

GENERAL CATALOGUE









HOW TO READ THE CATALOGUE

In order to identify more easily the product of your interest, we have developed two different indices that will help you in the search.

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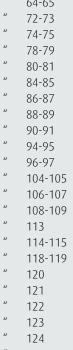
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ABOUT US

ODE is a leading company since 1960 in designing and manufacturing a complete line of solenoid valves and pumps able to satisfy to all our customers needs.

ODE is headquartered in Milan, Italy, with the manufacturing plant in Colico, close to the Swiss border.

In 2010 we celebrated 50 years of design and manufacturing excellence in the solenoid valves industry.

Our general purpose and customized valves are designed to operate very effectively in the coffee machines industry.

ODE's products are manufactured, assembled and tested in our factory in Italy using lean manufacturing techniques driven by Six Sigma quality practices.

ODE quality is based on the platform of process control granting the elimination of variances, a computerized integrated system able to guarantee the conformity of products, the recording each production step able to ensure effective data analysis as well as a complete and efficient traceability of both components and finished products, always maintaining standards of high competitiveness in the marketplace.

All the above allowed Ode to obtain the ISO 9001, UL, CSA, UR, VDE, NSF, PED and ATEX certifications.



THE CONCEPT OF QUALITY HAS ALWAYS BEEN PART OF ODE CULTURE AND MISSION.



ODE IN THE WORLD Argentina, Australia, Australia, Belgium, Brazil, Bulgaria, Chile, China, Croatia, Czech Republic, Denmark, Egypt, El Salvador, Finland, France, Germany, Greece, Guatemala, Hungary, India, Iran, Israel, Italy, Ivory Coast, Japan, Korea, Lebanon, Lithuania, Malaysia, Mexico, Morocco, Netherlands, New Zealand, Norway, Pakistan, Perù, Poland, Portugal, Romania, Russia, San Marino, Saudi Arabia, Serbia and Montenegro, Singapore, Slovakia, Slovenia, Spain, South Africa, Sweden, Switzerland, Syria, Taiwan, Tunisia, Turkey, Ukraine, United Arab Emirates, United Kingdom, Usa, Vietnam.



ATTENTION

Read carefully the conditions of sale before purchase

1 Subject

The present conditions represent all current and future contractual relations for ODE product suppliers.

2 Contract Preparation

2.1 The supply contract is concluded with the emission of the order confirmation on behalf of ODE.
If ODE does not accept part or all of the order, modifications to the order required will be sent in writing to the Client within five working days from the date of receipt. After 24 hours without receiving notification of objection from the client, the modifications introduced by ODE will be deemed to be accepted.

3 Exclusions

- 3.1 System design, installation of supplied devices, specific tests, instructional courses, assistance
- 3.2 In addition, taxes, exportation fees and any other additional expenses are not included in the price, unless otherwise specified and agreed upon by all parties.

4 Technical data, design and documents supplied

- 4.1 The information provided by ODE in catalogues, brochures, technical sheets or other illustrative documentation are only suggestive. This information is not binding unless specifically mentioned in the delivery.
- 4.2 ODE reserves the right to make modifications at any moment without warning in order to make technical and constructive improvements.
- 4.3 The client is expressly committed to not use images, technical information and other aspects of the delivery for various reasons other than those mentioned in the contract, they remain property of ODE and the client cannot previde them to third parties or reproduce them without written authorization.

5 Transport, packaging and consignment

- 5.1 Transport: for the transportation the goods, if not otherwise stipulated, are packaged in standard packaging, the client bears all risks.
- 5.2 Packaging: the packaging is not received by return to sender, unless agreed upon in writing among parties.
- 5.3 Consignment: the date of consignment and postage are not legally binding; in any circumstance, ODE is not liable for lateness of consignment:
 - a) If the client does not supply the details or materials necessary for the delivery before the deadline or requests variations to be made to a package or is delayed in answering requests deadline or requests variations to be made to a package or is delayed in answering requests of design approval.
 - b) If caused by reasons other than the good will and diligence of ODE, including lateness of subcontractors, that blocks or causes the excessively late consignment according to established terms.
 - Not including the specifications of article 13 below, regarding products not consigned to the client for reasons for which they are liable or otherwise, for causes outside the responsibility of ODE, the Client will accept the risks and expenses for custody.
- 5.4 Claims: no claims will be accepted if sent after eight days from the receipt of goods, unless otherwise agreed amongst parties.
- 5.5 If the client is not up to date with payments, ODE has the right to delay all consignments until the client has paid the sum owed.
- 5.6 If the ODE consignment is delayed where parties have previously agreed that ODE must pay a penalty fee for late consignment, the client cannot ask for compensation for damages caused above the penalty fee agreed upon.

6 Conformity and tests

- 6.1 A multilingual copy of the "Certificate of Conformity" regarding catalogue information, indicating the information of clients order and of the ODE delivery note is available if requested by the client within the delivery contract
- 6.2 Special deliveries according to client requests are to be agreed upon by parties and be executed at the expense of the client in the ODE headquarters.

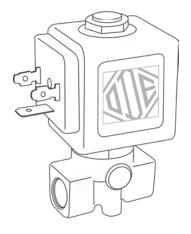
7 Prices, discounts and reparations

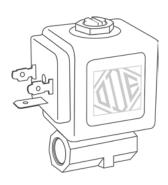
- 7.1 The prices indicated on the price list do not include VAT (value added tax)
- 7.2 Price variability: ODE reserves the right to vary prices without any warning; the price lists are not binding. The prices can also vary if the quantities ordered are reduced or requested to be delivered in a shorter time period than previously stipulated.
- 7.3 The offers emitted by ODE are referred to a specific consignment, they are not applicable for other deliveries of the same products if not otherwise specified in the supply contract.
- 7.4 All the discounts given by ODE are valid for thirty days from the date of proposal. Unless other wise agreed by all parties, discounts are irrevocable and expire after thirty days automatically according to article 1329 of the Italian Commercial Code. 7.5 Minimum Order: Direct orders below the following net sums are not accepted D 300,00 for OEM clients D 300,00 for distributors and reseliers price supplements will be applied to orders under this sum.

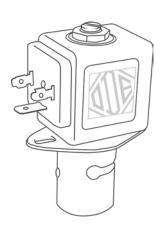
8 Payment

- 8.1 Unless otherwise stipulated payments must be made by the Client within the indicated terms of the invoice through the chosen credit institution.
- 8.2 For administrative reasons no rounding off will be accepted.
- 8.3 If the client's payment is late he's bound to pay the interest according to the Italia n Legislative Decree N" 231/2002, without necessity of statutory notice from ODE S.r.l., with calculation deriving from the above mentioned Decree and based on the currently applied interest rate as per the mentioned Decree.

 ODE has the right to request compensation for major damage caused and the termination of the contract according to the following article 13.







8.4 Any future disputes that occur between the parties do not exempt the Client from the obligation to observe the terms and conditions of payment.

9 Returns

- 9.1 Returns are not accepted if not authorized beforehand by our personnel, as a result of a written request from the Client. The transportation costs will remain at the client expense.
 - The value of the goods returned will be reduced by a percentage to be established, never below 20%, to account for costs incurred during testing and returning products to storage.
- 9.2 Similarly returns for repair or substitution of products must be previously authorized by our personnel through a written notice by the client regarding product defects; if the defects are covered by the guarantee, article 10 is applied.

10 Warranty

- 10.1 ODE guarantees the conformity of products supplied, the products are free from defects in materials a nel/or workmanship and they conform to all indications in the catalogue.
- 10.2 The warranty lasts 12 months beginning from the date of products consignment and for products or components substituted under warranty, from the day they are consigned to the client.
- 10.3 Within this period the client may denounce defects through relative non conformance documentation according to the terms of article 9.2, ODE is committed without obligation- within a reasonable time period in relation to the product of disputes- to repair or substitute the products or parts of the product that have proved dysfunctional free of charge; the client is obliged to send the dysfunctional products in an appropriate package, unless otherwise stipulated.
 - If ODE substitutes the products before receiving the dysfunctional products, the client is then obliged to return the dysfunctional products or articles to ODE unless otherwise stlpulated referring to the reparation/substitution bill in the returned consignment note guaranteed by ODE.
 - ODE reserves the right to charge the client for costs of products substituted and/or transportation fees if necessary, following testing, for products that are not covered by the guarantee.
- 10.4 The substitution and reparations are undertaken by ex-works; the costs and risks of transport of dysfunctional products are the responsibility of the client.
- 10.5 ODE excludes any warranty on products mounted or utilized incorrectly or noncompliantly to indications in the catalogue or in the instructions for usage and maintenance; in addition the warranty terminates if the products are stored incorrectly or exposed to insufficient maintenance or have been modified without ODE authorization.

11 Suppliers responsibility

- 11.1 ODE is thereafter responsible for the correct functioning of products supplied regarding characteristics and performance as indicated by the catalogue and/or relative documentation.
- 11.2 ODE is not responsible in any way for defects in machine operations or systems caused by the client or third parties to ODE products, even if these products have been mounted or connected following diagrams and illustrations produced by ODE.
- 11.3 The client cannot request compensation for indirect damage, lost profits or loss of production caused by the product, nor can they receive compensation above the value of the products supplied, with the exception of any aspects covered by the Consumer Code (Legislative decree 6 September 2005, number 206), and by article 1229 of the Italian commercial Code.

12 Retention of title

12.1 The products supplied remain the property of ODE until the client pays the agreed in full.

If the client does not pay, ODE reserves the right to request the restitution of the goods by the client, in this case they lose their right of ownership.

13 Resolutive clause expressed and resolutive conditions

- 13.1 The supply contract will terminate in accordance with article 1456 of the Italian Commercial Code following a simplified declaration written by ODE exercising the right of the resolutive clause expressed, if the client:

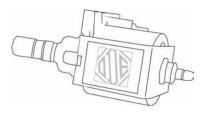
 a) omits or delays payments owed is late or does not consign the products within the terms stipulated by the previous article 5.
 - b) does not observe the obligations of copyright as stipulated in the previous article 4.
- 13.2 The contract will terminate if the client is in liquidation.

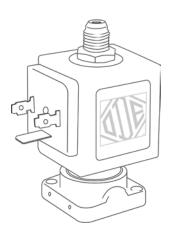
14 Applicable laws

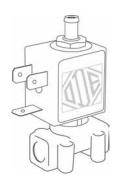
14.1 The supply contracts, including those for overseas clients, are regulated by the present general conditions and the Italian Law.

15 Court of Jurisdiction

15.1 The Court of Jurisdiction of Milan is competent if any dispute regarding the execution, interpretation, validity, resolution and termination of supply contracts between parties filed by the client; if the action is filed by ODE any Court according to the law is competent in addition to the Court of Jurisdiction of Milan.









GENERAL INFORMATION ABOUT ODE SOLENOID VALVES FUNCTIONING

GLOSSARY

This chapter illustrates some of the technical terms used in the ODE catalogue.

Fixed core: component in ferrous-magnetic material which, due to the effect of a magnetic field generated from the coil, attracts the plunger.

Plunger: component in ferrous-magnetic material which, under the effect of a magnetic field, moves towards the fixed core causing directly or indirectly the switching of the solenoid valve. Often the plunger houses one or more shutters which open or close one or more orifices for the solenoid valve functioning.

Complete plunger: this is the grouping of the plunger, the shutters and any springs.

Armature tube: a guide tube in which the plunger runs.

Complete armature tube: the assembly of fixed core and armature tube, generally welded or assembled with rolling, threading or other means.

Coil: it consists of a copper winding, a support bobbin and a holder in ferrous-magnetic material. The whole is covered over with insulating material from which the electrical connections emerge, which may be different depending on the type of coil. (see COIL INDEX). The winding generates the magnetic field while the ferrous-magnetic holder closes the magnetic circuit constituted by the holder itself, the plunger and the fixed core.

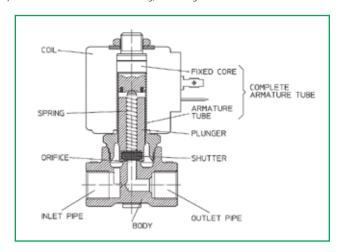
Shutter (or sealing gasket): this component may be housed directly in the plunger, in a gasket housing, in the piston, or be part of the complete diaphragm. With a movement the shutter opens or closes an orifice thus permitting or preventing the flow of fluid. Certain valves have more than one shutter, for example the 3 way direct acting solenoid valves: the two shutters, housed at the ends of the fixed core, alternately open and close the inlet and outlet orifices. There are also two shutters in the combined operation and in the pilot control solenoid valves, one acting on the pilot orifice and the other on the main orifice. Sometimes shutter function is carried out directly by the diaphragm or piston. Note: in the same solenoid valve there may be shutters made of different materials

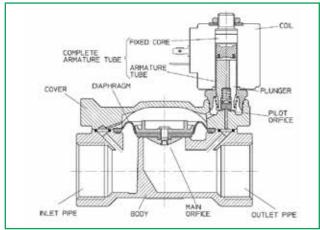
Orifice: this is a holed component which is opened or closed by the shutter, permitting or preventing the passage of fluid. It may be either machine-tooled or inserted. The solenoid valve main orifice is the one permitting maximum flow of the valve itself while the pilot orifice, when opened or closed due to an unbalance of pressure, leads to opening or closing the main one by means of a diaphragm or a piston.

Diaphragm: an element of mixed action or solenoid valves with pilot control which opens or closes the main orifice due to the effect of different pressures on its surfaces.

Complete diaphragm: this is the grouping of components united to the diaphragm such as diaphragm bearings, rivet etc.

Piston: an element of mixed action or solenoid valves with pilot control which opens or closes the main orifice due to the effect of different pressures on its surfaces.





Complete piston: this is the grouping of components united to the piston such as rivet, shutter etc.

Body: it is the central part of the solenoid valve. The pipes are on the body and the main orifice in generally inside. In some cases the body is divided in two parts: for example in solenoid valves for drink dispensing there is the upper body with the inlet pipe and the lower body with the main orifice and the outlet pipe.

Cover: this is found in certain solenoid valves, generally in all those with pilot control, the cover of which normally houses the pilot orifice.

Pipe: a mechanical component for connecting the solenoid valve to inlet, outlet and exhaust pipes.

1.1 2/2 way normally closed direct acting solenoid valves

Main components:

body with main orifice, complete armature tube + complete plunger (normally closed kit), coil.

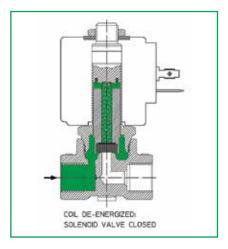
Functioning

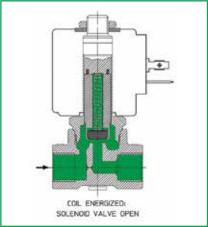
2/2 way normally closed direct acting solenoid valves have an inlet pipe and an outlet pipe. The plunger, on which a sealing gasket is mounted, provides directly for opening and closing the main orifice. When the coil is not energized, the plunger is in such a position as to close the orifice thus preventing the fluid flow.

When the coil is energized the plunger moves to such a position as to open the orifice, permitting fluid flow.

Notes:

in this solenoid valve range, a pressure increase causes the force required to open the valve: if the pressure difference between inlet and outlet is greater than the maximum value for which the solenoid valve has been designed, the latter may not open even with the coil energized.





1.2 2/2 way normally open direct acting solenoid valves

Main components:

body with main orifice, complete armature tube + plunger + rod + gasket holder assembly (normally open kit), coil.

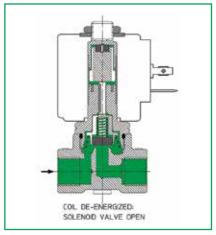
Functioning:

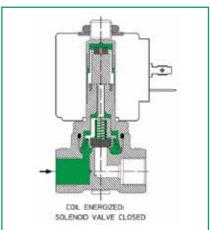
2/2 way normally open direct acting solenoid valves have an inlet pipe and a outlet pipe. The plunger, acting on the gasket holder by means of a rod, provides for opening and closing the solenoid valve. When the coil is not energized the gasket holder, under the action of a spring, is kept in such a position that the orifice is open, permitting fluid flow.

When the coil is energized the plunger moves downwards and, by means of the rod, pushes the gasket holder into a position that closes the orifice, preventing fluid flow.

Notes:

In this solenoid valve family an increase in pressure causes an increase in the force required to open the valve: if the pressure difference between inlet and outlet is greater than the maximum value for which the valve has been designed, the latter may not reopen even with the coil deactivated.





GENERAL INFORMATION ABOUT ODE SOLENOID VALVES FUNCTIONING

1.3 2/2 way normally closed solenoid valves with pilot control

Main components:

body with main orifice, cover, diaphragm (or piston) assembly, complete armature tube, + complete plunger (normally closed kit), coil.

Functioning:

2/2 way normally closed solenoid valves with pilot control have an inlet pipe and a outlet pipe. The main orifice, in the body, is opened by the effect of an unbalance in pressure between the upper and lower surfaces of a diaphragm (or piston): when the coil is not energized there is fluid under pressure in the chamber above the diaphragm while beneath the diaphragm there is pressure only in the area external to the main orifice: thus the resultant of the forces on the diaphragm is such as to push it and close the main orifice. When the coil is energized, movement of the plunger, on which a gasket is mounted, cause the pilot orifice opening and the chamber discharging above the diaphragm: the pressure unbalance moves the diaphragm which opens the main orifice.

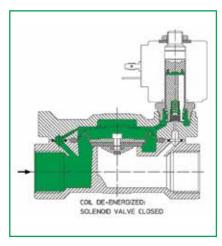
Notes

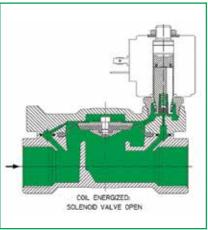
In this solenoid valves range there must be a minimum pressure difference between the inlet and the outlet pipes to ensure the correct solenoid valve functioning.

However, an excessive pressure difference between inlet and outlet, as with 2 way normally closed direct acting solenoid valves, causes an increase in the force required to open the pilot orifice, so if this pressure difference is greater than the maximum value for which the solenoid valve has been designed, the latter may not open even when the coil is energized. For a correct operation of the solenoid valve, and to avoid a quick wear of the diaphragm, it is advisable that, once starting the valve closing, the actual flow isn't higher than the KV (i.e.: flow rate through the valve with a pressure loss of 1 bar). For this reason, should the inlet pressure when the valve is open, be higher than 1 bar,

For this reason, should the inlet pressure when the valve is open, be higher than 1 bar, it is not advisable the use of the valve itself with free outlet, i.e. without an outlet restriction bringing the pressure drop to the value of 1 bar.

Moreover, particular attention must be paid in designing the hydraulic circuit to the problem of water hammering which could cause overpressures such as to lacerate the diaphragm or damage other parts of the solenoid valve.





1.4 2 way normally open solenoid valves with pilot control

Main components:

body with main orifice, cover, diaphragm (or piston) assembly, complete armature tube + plunger + gasket holder + gasket (normally open kit), coil.

Functioning:

2 way normally open solenoid valves with pilot control have an inlet and an outlet pipe. These solenoid valves functioning, as regards movement of the diaphragm, identical to that of 2 way normally closed solenoid valves with pilot control except that in place of the normally closed kit a normally open kit is mounted to open and close the pilot orifice. So in this case with the coil energized the pilot orifice is closed and the diaphragm therefore in such a position as to close the main orifice, whereas with the coil energized the pilot orifice is open, thus causing the main orifice to open.

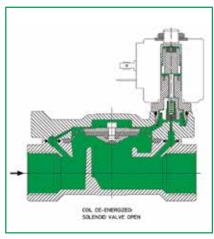
Notes

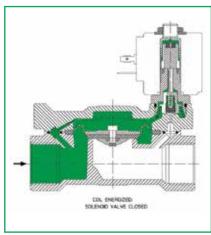
In this solenoid valves range there must be a minimum pressure difference between the inlet and outlet pipes to ensure correct solenoid valve functioning.

However, an excessive pressure difference between inlet and outlet, as with 2 way normally open direct acting solenoid valves, causes an increase in the force required to open the pilot orifice, so if this pressure difference is greater than the maximum value for which the solenoid valve has been designed, the latter may not reopen even when the coil is not energized. For a correct operation of the solenoid valve, and to avoid a quick wear of the diaphragm, it is advisable that, once starting the valve closing, the actual flow isn't higher than the KV (i.e.: flow rate through the valve with a pressure loss of 1 bar).

For this reason, the inlet pressure when the valve is open, should be higher than 1 bar, it is not advisable the use of the valve itself with free outlet, i.e. without an outlet restriction bringing the pressure drop to the value of 1 bar.

Moreover, particular attention must be paid in designing the hydraulic circuit to the problem of water hammering which could cause overpressures such as to lacerate the diaphragm or damage other parts of the solenoid valve.





1.5 2/2 way normally closed combined operation solenoid valves

Main components:

body with main orifice, cover, diaphragm (or piston) assembly, complete armature tube + complete plunger, coil.

Functioning:

2 way normally closed combined operation solenoid valves have an inlet and an outlet pipe. The main orifice opening, which is in the body, comes about by an unbalance is pressure between the upper and lower surfaces of a diaphragm (or piston) together with direct action of the plunger which is fixed to the diaphragm. Functioning is substantially similar to that of solenoid valves with pilot control as regards diaphragm movement except that even with small pressure differences between inlet and outlet, functioning is ensured by the direct action of the plunger on the diaphragm. So, also in this case, when the coil is not energized there is fluid under pressure in the chamber above the diaphragm while beneath the diaphragm there is pressure only in the area external to the main orifice: therefore the resultant of the forces on the diaphragm is such as to push it to close the main orifice. When the coil is energized, movement of the plunger, on which a gasket is mounted, opens an orifice on the complete diaphragm (pilot orifice) and discharges the chamber above the diaphragm. At the same time the plunger exercises direct force on the diaphragm, aiding its opening. The sum of this force and the pressures unbalance on the two sides of the diaphragm causes the diaphragm to move and open the main orifice.

Notes:

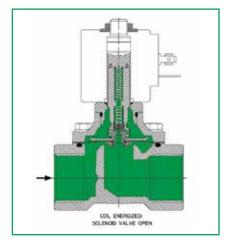
In this solenoid valves range there must not be a minimum pressure difference between the inlet and outlet pipes to ensure correct solenoid valve functioning.

However, an excessive pressure difference between inlet and outlet, as with 2 way normally closed direct acting solenoid valves, causes an increase on the force required to open the pilot orifice, so if this pressure difference is greater than the maximum value for which the solenoid valve has been designed, the latter may not open even when the coil is energized. For a correct operation of the solenoid valve, and to avoid a quick wear of the diaphragm, it is advisable that, once starting the valve closing, the actual flow isn't higher than the Kv (i.e.: flow rate through the valve with a pressure loss of 1 bar).

For this reason, the inlet pressure when the valve is open, should be higher than 1 bar, it is not advisable the valve itself use with free outlet, i.e. without an outlet restriction bringing the pressure drop to the value of 1 bar.

Moreover, particular attention must be paid in designing the hydraulic circuit to the problem of water hammering which could cause overpressures such as to lacerate the diaphragm or damage other solenoid valve parts.

COL. OF INCROZED. SOLENDO VALVE CLOSED



1.6 2/2 way normally open combined operation solenoid valves

Main components:

body with main orifice, cover, diaphragm (or piston) assembly, complete armature tube + complete plunger, coil.

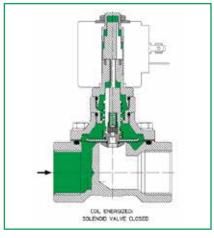
Functioning:

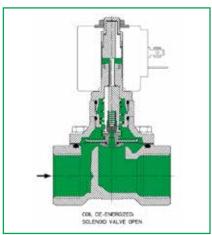
2 way normally open combined operation solenoid valves have an inlet pipe and a outlet pipe. 2 way normally open functioning is substantially similar to that of solenoid valves mixed actuated normally closed. The difference is basically in the piloting kit. Instead of a normally closed solenoid operator, it is mounted a normally open kit. In this case when the coil is powered the piloting orifice will be closed and the main seat will keep close the valve. The opposite happen when the coil is not powered and the main seat remains open allowing the fluid flow.

Notes

In this family of solenoid valves there must not be a minimum pressure difference between the inlet and outlet pipes to ensure correct functioning of the solenoid valve. However, an excessive pressure difference between inlet and outlet, as with 2 way normally closed direct acting solenoid valves, causes an increase in the force required to open the pilot orifice, so if this pressure difference is greater than the maximum value for which the solenoid valve has been designed, the latter may not open even when the coil is energized. For a correct operation of the solenoid valve, and to avoid a quick wear of the diaphragm, it is advisable that, once starting the valve closing, the actual flow isn't higher than the Kv (i.e.: flow rate through the valve with a pressure loss of 1 bar).

For this reason, should the inlet pressure when the valve is open, be higher than 1 bar, it is not advisable the use of the valve itself with free outlet, i.e. without an outlet restriction bringing the pressure drop to the value of 1 bar. Moreover, particular attention must be paid in designing the hydraulic circuit to the problem of water hammering which could cause overpressures such as to lacerate the diaphragm or damage other parts of the solenoid valve.





GENERAL INFORMATION ABOUT ODE SOLENOID VALVES FUNCTIONING

1.6 Proportional direct acting solenoid valves

Main components:

body with main orifice, complete armature tube + adjustment screws + plunger + gasket, coil.

Functioning

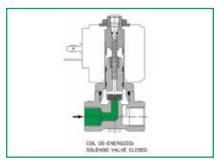
Proportional direct acting solenoid valves have an inlet and an outlet pipe. The plunger, on which a sealing gasket is mounted, provides directly for opening and closing the main orifice of the solenoid valve.

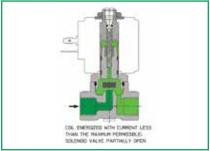
Unlike 2 way normally closed solenoid valves which have only two states, open and closed, a proportional solenoid valve, in function of the current run in the coil, can open partially. The solenoid valve can be set with the adjustment screws in such a way that, with the coil not energized, a perfect seal at maximum project pressure is guaranteed. For clarification regarding methods used for energising and controlling this type of solenoid valve, see the functioning scheme for these valves in this section.

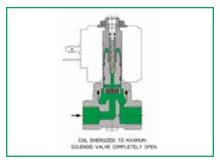
It is important to note that proportional solenoid valves are always operated by Direct Current (DC).

Notes:

On these valves, unlike the other models, the fluid shall enter into the valve so to pass through the main orifice from the lower side towards the higher one. In this solenoid valves range an increase in pressure, as 3 way solenoid valves, causes a reduction in the pressure required to open the valve: if the pressure difference between inlet and outlet is greater than the maximum value for which the solenoid valve has been tared, the latter may open even when the coil is not energized. Proportional solenoid valves are tared individually, at the moment of installation and inspection testing, with the adjustment screws in the fixed core: any modification of this taring may make the valve work in a different way with regard to the data shown on the label.







2.1 3/2 way normally closed direct acting solenoid valves

Main components:

body with orifice, complete armature tube + fixed core + plunger + 2 gaskets (3 way kit), coil.

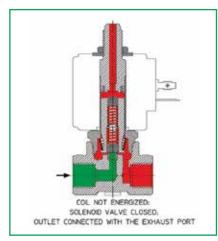
Functioning:

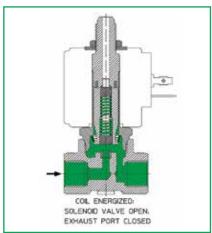
3 way normally closed solenoid valves have an inlet pipe, an outlet pipe and an exhaust pipe. The plunger, on which two gaskets are mounted, provides directly for opening and closing the solenoid valve's main orifice with one of the two gaskets and, simultaneously, opening or closing the outlet orifice with the other gasket. When the coil is not energized the plunger is in such a position as to close the main orifice, preventing the fluid flow from the inlet pipe to the outlet pipe, whereas the outlet pipe is in communication with the exhaust pipe. When the coil is energized the plunger moves to a position in which it opens the main orifice and closes the exhaust orifice, permitting fluid to flow from the inlet pipe to the outlet one and preventing flow to the exhaust.

Notes:

On these valves, unlike the other models, the fluid shall enter into the valve so to pass through the main orifice from the lower side towards the higher one.

In this solenoid valves range an increase in pressure causes a reduction in the force required to open the valve: if the pressure difference between inlet and outlet is greater than the maximum value for which the solenoid valve has been designed, the latter may open even when the coil is not energized.





3.1 Single solenoid valves for automatic drink-dispensers

Main components:

body, lower body with orifice, complete armature tube + fixed core + plunger + cap gasket (2 way kit), coil.

Functioning:

Single solenoid valves for drink-dispenser have an inlet pipe and an outlet pipe on which there is generally a small pipe for attaching a vent. The plunger, on which the sealing cap gasket is fitted, provides directly for opening and closing the orifice, as with 2 way normally closed solenoid valves.

When the coil is not energized the plunger is in a position that closes the orifice, preventing fluid flow from the inlet to the outlet pipe.

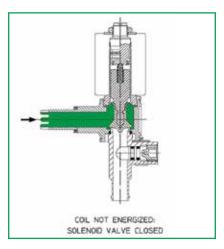
When the coil is energized the plunger moves to a position that opens the orifice, permitting fluid flow from the inlet to the outlet pipe.

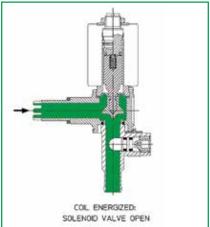
As well as opening and closing the orifice, the cap gasket provides for keeping the fluid separate from the armature tube-complete plunger and to avoid any deposit of limestone into the armature tube.

On the outlet pipe there is usually an adjustment screw for setting the solenoid valve flow, dividing the conduit.

Notes:

In this solenoid valves range an increase in inlet pressure causes a force reduction required to open the valve: if the inlet pressure is greater than the maximum value for which the solenoid valve has been designed, the latter may open even when the coil is not energized. On the lower body of the solenoid valves for automatic drink-dispensers there is also a little venting fitting, on which usually a plastic pipe is connected. This device assures a better fluid efflux and therefore a steady flow.





3.2 Solenoid valves manifold for automatic drink-dispensers

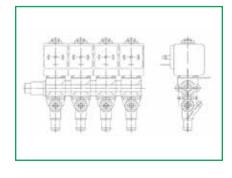
Main components:

headers, lower bodies with orifices, complete armature tube + fixed cores + plungers + cap gaskets (2 way kit), coils.

Functioning:

in the solenoid valves functioning the manifolds are identical to the single valves. The only difference is that they can be put together to form a group of solenoid valves with an inlet pipe and various outlet pipes, each one of which can be opened by energizing the corresponding coil.

The number of components of the group is in theory unlimited, but normally there are not more than $4 \div 5$ elements per group.



GENERAL INFORMATION ABOUT ODE SOLENOID VALVES FUNCTIONING

4. 5/2 way solenoid valves

Main components:

solenoid valve body, profiled shaft, pistons, spring where required, 3 way kit, coil.

Functioning

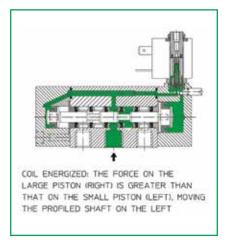
5 way solenoid valves are divided into two distinct groups: pneumatic return and spring return.

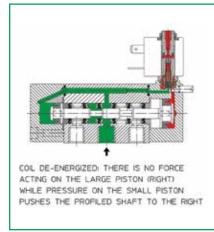
In pneumatic return 5 way solenoid valves, the coil energizing or de-energizing and on the consequent opening or closing of a pilot orifice an unbalance of forces is created on two pistons of different section, fixed to a suitably profiled shaft which moves, putting the inlet pipe (pipe 1) in communication with one of the other 4 pipes and putting others into outlet, closing or opening them in accordance with specific schemes for each single valve. The pilot orifice closure causes the return of the profiled shaft to its original position due to a play of pressures.

In 5 way spring return solenoid valves there is, instead of the small piston, a spring which carries out the function of the piston returning to its initial position when the coil is de-energized the pilot orifice is closed.

Notes:

For a correct solenoid valves functioning there must be a specified minimum pressure for each type of solenoid valve at the inlet pipe (pipe 1).







GENERAL PURPOSE SOLENOID VALVES ▶ 21A N.C./N.O. page 26-27 28-29 ▶ 21A PROP N.C. ▶ 21A-PW N.C./N.O. 30-31 ▶ 21A16 N.C. 32-33 34-35 ▶ 21H-EN N.C. ▶ 21HT-HN-HF N.C./N.O. 36-37 ▶ 21IH-IN N.C. 38-39 40-41 ▶ 21JN N.C. ▶ 21L N.C./N.O. 42-43 44-45 ▶ 21M N.O. 46-47 ▶ 21T N.C. ▶ 21W N.C./N.O. 48-49 ▶ 21X N.C. 50-51 ▶ 21YW-YN N.C./N.O. 52-53 54-55 ▶ 31A N.C./N.O. ▶ 31A N.C. 56-57 ▶ 31JN N.C. 58-59 ▶ 31L N.C. 60-61 ▶ 512 N.C. 62-63 ▶ 4743 N.C. 64-65

21A N.C./N.O.











FEATURES

- Wide range of application valves for liquids and gas
 Reliable proven design with high flow
 Small poppet valve for tight shutoff
 Wide range of elastomers
 Mountable in any position







21A	1	K	V	15	21A	**	В	D	А	08	024	А	5
	B= Flange	K= N.C.	V= FKM	10		n- for	B= 30mm	D	B= Class F	08= 8W	024 = 24V	C = DC	S= Without Approval
	1 = G 1/8	Z= N.O.	B= NBR	20	0 (D= for 8W coil	Ø 13	EN 175301-803					
Model valve	2 = G 1/4		E= EPDM	25 30	Orefice 10 ⁻¹ mm	G= for	U = 36mm Ø 13		V= Class H	12 = 12W	112 = 110V-120V	A= AC	Y= UL, CSA, VDE
	3 = G 3/8		T= PTFE	45		12W-14W coil	G = 52mm						
	4= G 1/2		R= RUBY	55		1244 1 WY COII	Ø 13			14 = 14W	223 = 220V-230V	D= AC	

(**) Only for N.O. version

					PF	RESSUR	E MA	х мо	PD (b	ar)			
DIDE		Kv	MAX VISCOSITY	PRESSURE			COIL	TYPE			CAC CODE	NIDT CODE	DRAWING
PIPE	(mm)	(I/min)	cSt (°E)	min		AC			DC		GAS CODE	NPT CODE	REFERENCE
					В	U	G	В	U	G			
Normally Closed										_			
	1,5	1,4	12(2)		30	-	-	18	-	-	21A1KV15		1
Floore	2	2	37(5)	0	22 35 35 16 30 30 21A1KV20 14 30 30 9 25 25 21A1KV25 10 25 25 6 18 20 21A1KV30		1						
Flange	2,5	3,2	53(7)	0	14	30	30	9	25	25			1
	3	4	53(7)		10	25	25	6	18	20	21A1KV30		1
	1,5	1,4	12(2)		30	-	-	18	-	-	21A3KV15		2
	2	2	37(5)		22	35	35	16	30	30	21A3KV20		2
G 1/8	2,5	3,2	53(7)	0	14	30	30	9	25	25	21A3KV25		2
	3	4	53(7)		10	25	25	6	18	20	21A3KV30	(Part numbering example	2
	4,5	6,5	53(7)		5	12	12	2	7	8	21A3KV45		2
	1,5	1,4	12(2)		30	-	-	18	-	-	21A2KV15	add "N" at the 4th digit	2
	2	2	37(5)		22	35	35	16	30	30	21A2KV20	21AN2K0V20)	3
5 4 /4	2,5	3,2	53(7)		14	30	30	9	25	25	21A2KV25		3
G 1/4	3	4	53(7)	0	10	25	25	6	18	20	21A2KV30		3
	4,5	6,5	53(7)		5	12	12	2	7	8	21A2KV45		3
	5,5	9	53(7)		3	7	10	1	2,5	5	21A2KV55		3
5.2 /0	4,5	6,5	53(7)		5	12	12	2	7	8	21A5KV45		4
G 3/8	5,5	9	53(7)	0	3	7	10	1	2,5	5	21A5KV55		4
/-	4,5	6,5	53(7)		5	12	12	2	7	8	21A8KV45		5
G 1/2	5,5	9	53(7)	0	3	7	10	1	2,5	5	21A8KV55		5
Normally Open													
	1,5	1,4	12(2)		25	-	-	25	-	-	21A1ZV15D		1
-1	2	2	37(5)		20	-	-	20	-	-	21A1ZV20D		1
Flange	2,5	3,2	53(7)	0	14	-	-	14	-	-	21A1ZV25D		1
	3	4	53(7)		10	-	-	10	-	-	21A1ZV30D		1
	1,5	1,4	12(2)		25	-	-	25	-	-	21A3ZV15(*)		2
	2	2	37(5)		20	30	30	20	30	30	21A3ZV20(*)		2
G 1/8	2,5	3,2	53(7)	0	14	17	17	14	17	17	21A3ZV25(*)		2
,	3	4	53(7)		10	15	15	10	15	15	21A3ZV30(*)		2
	4,5	6,5	53(7)		5	6	6	4	-	6	21A3ZV45(*)	(Part numbering example	2
	1,5	1,4	12(2)		25	-	-	25	-	-	21A2ZV15(*)	add "N" at the 4th digit	2
	2	2	37(5)		20	30	30	20	30	30	21A2ZV20(*)	21AN2K0V20)	3
5.4.4	2,5	3,2	53(7)		14	17	17	14	17	17	21A2ZV25(*)		3
G 1/4	3	4	53(7)	0	10	15	15	10	15	15	21A2ZV30(*)		3
	4,5	6,5	53(7)		4	6	6	4	-	6	21A2ZV45(*)		3
	5,5	9	53(7)		2,5	3,5	3,5	2,5	-	3,5	21A2ZV55(*)		3
5.2 /0	4,5	6,5	53(7)		4	6	6	4	-	6	21A5ZV45(*)		4
G 3/8	5,5	9	53(7)	0	2,5	3,5	3,5	2,5	-	3,5	21A5ZV55(*)		4
5 4 /2	4,5	6,5	53(7)		4	6	6	4	-	6	21A8ZV45(*)		5
G 1/2	5,5	9	53(7)	0	2,5	3,5	3,5	2,5	-	3,5	21A8ZV55(*)		5
(*) D for B Coil; G for U/G	coil												

TECHNICAL SPECIFICATION

- ▶ Body material: Brass UNI EN 12165 CW617N
- Armature tube: Stainless Steel AISI 300 series
- ▶ Plungers: Stainless Steel AISI 400 series
- > Spring: Stainless Steel AISI 300 series
- ▶ Media: mineral oils, gasoline, diesel, fuel oils water, air, inert fluids, inert gases, steam
- Ambient temperature: See coils catalogue page for its compatibility
- ▶ Fluid temperature: -10°C +140°C with FKM and EPDM seals
 - -10°C +90°C with NBR seals
 - -40°C +180°C with PTFE and RUBY seals
- Max allowable pressure (PS): 40 bar
- ▶ Protection class: IP65 (complete with electric plug)

IP67 (with antiumidity kit can be rated to IP67)

- ▶ Electrical conformity: IEC 335
- ▶ Switching time: 20 40 msec (depending on pressure conditions)

AVAILABLE ON REQUEST

- ▶ Low lead brass for food grade
- Nickel plated version
- ▶ NSF approved version
- Double spring for higher operative pressure
- ▶ High pressure up to 100bar (see High Pressure section)
- ▶ Compressor flange interface (i.e. 4690K0V20 see Drawing reference 1a)

REPAIR KIT

Normally Open

Coil B type (8W)

Orifice<=3mm:

Orifice>=3mm:

Coil U type (12W) Coil G type (14W)

Orifice<=3mm:

Orifice>=3mm: KT130ZV55-G

- Manual override (i.e. 21A3KV15-M)
- Explosion proof coil Ex m (see Atex section)
- Explosion proof coil Ex d (see Atex section)
- Explosion proof coil Ex nA (see Atex section)
- ▶ Latching coil (See coil section)

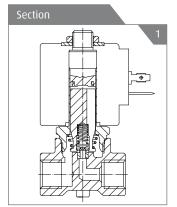


KT130ZV30-G

KT1307V55-F

KT130KV55-A

KT130ZV30-G



REPAIR KIT Normally Closed Orifice <=3mm: KT130KV30-A

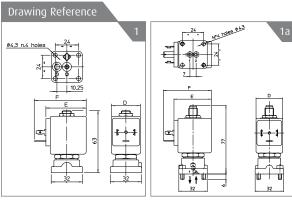
Orifice <=3mm: KT130KV30-A Orifice >=3mm: KT130KV55-A

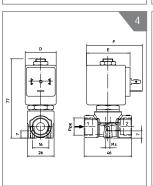
INSTALLATION

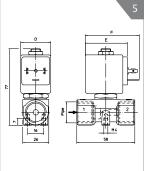
- ▶ The solenoid valves can be mounted in any position
- Other port connections available on request
- Maintenance and instruction sheet available in each solenoid valve box
- Availability of repair kit and coils as spares

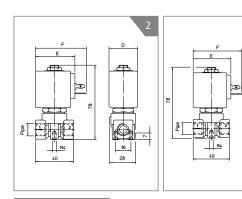
RELATED ITEMS

- P990305: Electrical plug EN 175301-803 Pg9
- ▶ P990306: Electrical plug EN 175301-803 Pg11
- ▶ P992126: Electrical plug EN 175301-803 Pg9 (with OR screw)
- ▶ P992127: Electrical plug EN 175301-803 Pg11 (with OR screw)
- P992128: Electrical plug EN 175301-803 cable 2 wires, 53cm
- ▶ R452714: Antihumidity kit (up to IP67 protection together with plugs P992126, P992127; P992128 & H coil class)
- ▶ P992087: Timer for automatic switch









Dimensiona	ale Table			
Figure	Coil Type	D mm	E mm	F mm
	В	30	42	56
1-1a-2-3-4-5	U	36	48	60
	G	52	55	67



21A PROP N.C.





- Flow control solenoid valve
 Good repeability and low isteresys
 Different flow curves depending on the coil (contact our Customer Service)





C€

21A	2	KC	V	15	
Model valve	2 = G 1/4	K= N.C.	V= FKM	15 20 25 30 45 55	Orefice 10 ⁻¹ mm

В	D	А	08	024	А	5
B= 30mm Ø 13	D	A= Class F	08= 8W	024 = 24V	C= DC	S= Without Approval
U = 36mm Ø 13	EN 175301-803	V= Class H	12 = 12W	112 = 110V-120V	A= AC	S= Without Approval

PIPE	Ø	Kv	MAX VISCOSITY	PRESSURE	PF	RESSUR		X MO TYPE		ır)	GAS CODE	NPT CODE	DRAWING
1111	(mm)	(l/min)	cSt (°E)	min	AC			DC			das cobl	NPT CODE	REFERENCE
					В	U	G	В	U	G			
	1,5	1,4	21(3)		-	-	-	10	10	-	21A2KCV15-10		1
	2	2	21(3)		-	-	-	10	10	-	21A2KCV20-10		2
6.1/4	2,5	3,2	21(3)	0	-	-	-	8	8	-	21A2KCV25-10		3
G 1/4	3	4	21(3)	0	-	-	-	5	5	-	21A2KCV30-10		4
	4,5	6,4	21(3)		-	-	-	1,5	1,5	-	21A2KCV45-10		5
	5,5	9	21(3)		-	-	-	-	1	-	21A2KCV55-10		6

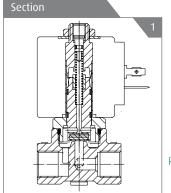
Proportional Technology Valve 2/2 Way Direct acting

TECHNICAL SPECIFICATION

- ▶ Body material: Brass UNI EN 12165 CW617N
- ▶ Armature tube: Stainless Steel AISI 300 series
- ▶ Plungers: Stainless Steel AISI 400 series
- ▶ **Spring:** Stainless Steel AISI 300 series
- Media: water, inert gases, mineral oils, gasoline
- ▶ Ambient temperature: See coils catalogue page for its compatibility
- ▶ Fluid temperature: -10°C +140°C with FKM seals
- Design pressure PS: 40 bar
- Protection class: IP65 (complete with electric plug)
- ▶ Electrical conformity: IEC 335

AVAILABLE ON REQUEST

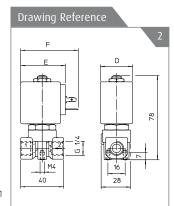
Proportional Electric Control System suitable on request, please consult the technical department for additional information



REPAIR KIT KT130KCV55-I

RELATED ITEMS

- ▶ P990305: Electrical plug EN 175301-803 Pg9
- ▶ P990306: Electrical plug EN 175301-803 Pg11

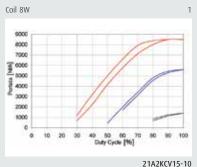


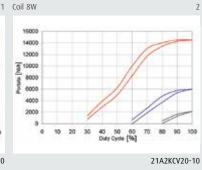
INSTALLATION

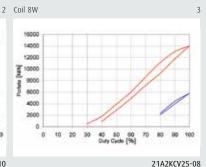
- ▶ Can be installed in any position
- Maintenance and instruction sheet available in each solenoid valve box

Flow Curve

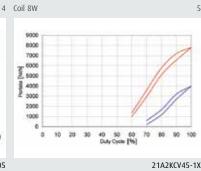
Produced with coil (8W); for 12W curve please consult technical departement

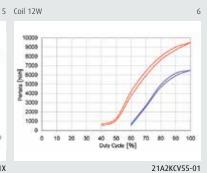












Dimensionale Table

Figure	Coil Type	D mm	E mm	F mm
7	В	30	42	54
Z	U	36	48	60



21A-PW N.C./N.O.

FEATURES

- Specially designed for compressor useHeavy duty design for high number of cyclesHigh working temperature

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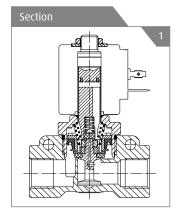
21PW	3	К0	T	120	
	2 = G 1/4	K0 = N.C.	T= PTFE		
Model valve	3 = G 3/8	W0= N.C.	F= H-NBR	55 120	Orefice 10 ⁻¹ mm
	4= G 1/2			120	

В	D	А	08	024	А	S
		A= Class F		024 = 24V	A= AC	S= Without Approval
B = 30mm Ø 13	D EN 175301-803	V= Class H	08= 8W	110 = 110V	C= DC	Y= UL, CSA, VDE
				223 = 220V-230V		
L	B A 05		024	A	S	
				024 = 24V	A= AC	S= Without Approval
L= 22mm Ø 10	B EN 175301-803		100 = 100V	D= AC		
				220 = 220V	B= AC	U= UL

						PRE	SSUR	E MA	к мо	PD (t	oar)				
PIPE		Kv	MAX VISCOSITY	PRESSURE				COIL	ГҮРЕ				GAS CODE	NPT CODE	DRAWING
1112	(mm)	(I/min)	cSt (°E)	min		Α	.C			D	C		das cobl	INIT CODE	REFERENCE
						В	G	U		В	G	U			
Normally Closed															
G 3/8	12	32	12(2)	0,5	-	18	20	20	-	-	15	-	21A1KV15		1
G 3/8	12	32	12(2)	0,3	-	15	15	15	-	-	10	-	21A1KV20		1
G 1/2	12	38	12(2)	0,5	-	18	20	20	-	-	15	-	21A1KV25		1
G 1/2	12	38	12(2)	0,3	-	15	15	15	-	-	10	-	21A1KV30		1
Normally Open															
G 1/4	5,5	9	53(7)	0,5	12	-	-	-	-	-	-	-	21A2W0F55-PW		1
G 1/4	5,5	9	53(7)	0,5	-	15	-	-	-	-	-	-	21A2Y0F55-PWB		2
G 3/8	12	32	12(2)	0,5	-	18	-	-	-	18	-	-	21PW3F0T120		2
G 3/8	12	32	12(2)	0,3	-	15	-	-	-	15	-	-	21PW3F0V120		2
G 1/2	12	38	12(2)	0,5	-	18	-	-	-	18	-	-	21PW4F0T120		2
G 1/2	12	38	12(2)	0,3	-	15	-	-	-	18	-	-	21PW4F0V120		2

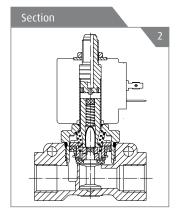
TECHNICAL SPECIFICATION

- ▶ Body material: Brass UNI EN 12165 CW617N
- Armature tube: Stainless Steel AISI 300 series (21A2)
- ▶ Welved armature tube: Brass UNI EN 12165 CW617N + Stainless steel AISI 300 series (21PW)
- ▶ Plungers: Stainless Steel AISI 400 series
- ▶ **Spring**: Stainless Steel AISI 300 series
- Media: air, inert gases, water
- Ambient temperature: See coils catalogue page for its compatibility
- ▶ Fluid temperature: -10°C +140°C with FKM seals
 - -10°C +140°C with H-NBR seals
 - -10°C +180°C with PTFE seals
- Design pressure PS: 25 bar
- ▶ Protection class: IP65 (complete with electric plug)
- ▶ Electrical conformity: IEC 335



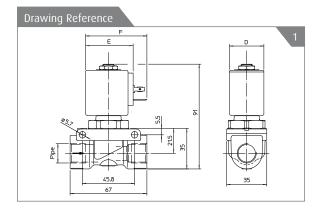
RELATED ITEMS

- ▶ P990305: Electrical plug EN 175301-803 Pg9
- ▶ P990306: Electrical plug EN 175301-803 Pg11
- ▶ P990307: Electrical plug EN 175301-803 Pg 9 (22 mm)
- ▶ P992126: Electrical plug EN 175301-803 Pg9 (with OR screw)
- P992127: Electrical plug EN 175301-803 Pg11 (with OR screw)
- P992128: Electrical plug EN 175301-803 cable 2 wires, 53cm
 R452714: Antihumidity kit (up to IP67 protection together with plugs P992126, P992127; P992128 & H coil class)
- ▶ P992087: Timer for automatic switch



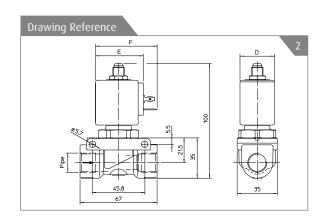
INSTALLATION

- ▶ The solenoid valves can be mounted in any position
- ▶ Holes and threaded connections for panel fixing
- ▶ Other port connections available on request
- ▶ Maintenance and instruction sheet available in each solenoid valve box
- ▶ Availability of repair kit and coils as spares



Dimensionale Table

Figure	Coil Type	D mm	E mm	F mm
1-7	В	30	42	54
1-2	L	22	27,5	39,5





21A16 N.C.



FEATURES

- Reliable solution for steam
 Flow regulation for steam control
 90° shape for compact installation





C€

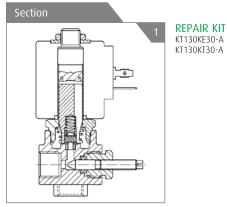
21A	16	K	T	120	
Model	16 5 1 /4	K= N.C.	E= EPDM	25	Orefice
Model valve	16 = G 1/4		T= PTFE	30	10 ⁻¹ mm

В	D	А	08	024	А	5
		A= Class F		024= 24V	C= DC	S= Without Approval
B = 30mm Ø 13	D EN 175301-803	V= Class H	08= 8W	110 = 110V-120V	A= AC	Y= UL, CSA, VDE
				223 = 220V-230V	D= AC	

PIPE	Ø (mm)	Kv (I/mn)	MAX VISCOSITY cSt (°E)	PRESSURE min	PRESSURE MA COIL AC B		GAS CODE	NPT CODE	DRAWING REFERENCE
Without Manual Har	ndweel								
	2,5	3,2		0	14	9	21A16KE25		1
G 1/4	3	4	F2/7\		10	6	21A16KE30	Not Applicable	1
0 1/4	2,5	3,2	53(7)	0	14	5	21A16KT25		1
	3	4			10	4	21A16KT25		1
With Manual Handw	reel								
	2,5	3,2			14	9	21A16KE25-XV		2
G 1/4	3	4	53(7)	0	10	6	21A16KE30-XV	Not Applicable	2
0 1/4	2,5	3,2	55(7)	U	14	5	21A16KT25-XV	пот Аррисаріе	2
	3	4			10	4	21A16KT25-XV		2

TECHNICAL SPECIFICATION

- ▶ Body material: Brass UNI EN 12165 CW617N
- ▶ Armature tube: Stainless Steel AISI 300 series
- ▶ Reliable solution for steam
- ▶ Plungers: Stainless Steel AISI 400 series
- ▶ **Spring:** Stainless Steel AISI 300 series
- Media: low pressure steam, mineral oils, gasoline, diesel, fuel oils, water
- ▶ Ambient temperature: See coils catalogue page for its compatibility
- Fluid temperature: -10°C +140°C with FKM, EPDM seals -40°C +180°C with PTFE, RUBY seals
- Design pressure PS: 25 bar
- ▶ Protection class: IP65 (complete with electric plug)
- ▶ Electrical conformity: IEC 335



RELATED ITEMS

- ▶ P990305: Electrical plug EN 175301-803 Pg9
- ▶ P990306: Electrical plug EN 175301-803 Pg11

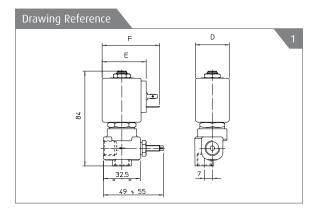
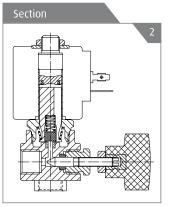


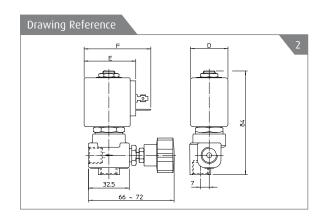
Figure Coil Type D mm E mm F mr



REPAIR KIT KT130KE30-A KT130KT30-A

INSTALLATION

- ▶ The solenoid valves can be installed in any position
- Maintenance and instruction sheet available in each solenoid valve box





21H-EN N.C.

FEATURES

- Compact design
 Pressure up to 20 bar
 Wide elastomers range for fluid compatibility





C€

21EN	2	K0	В	105		
	2= 1/4 (GAS o NPT)	K0 = N.C.	B= NBR			
Model	3= 3/8 (GAS o NPT)		E= EPDM	105	Orefice	ı
valve	4= 1/2 (GAS o NPT)		V= FKM	120 180	10 ⁻¹ mm	
	5= 3/4 (GAS o NPT)					

В	D	А	08	024	А	S
B = 30mm Ø 13		B= Class F	08= 8W	024 = 24V	C= DC	S= Without Approval
U = 36mm Ø 13	D EN 175301-803	V= Class H	12 = 12W	112 = 110V-120V	A= AC	Y= UL, CSA, VDE
G = 52mm Ø 13			14 = 14W	223 = 220V-240V	D= AC	

DIDE	Ø Kv MAX VI:	MAX VISCOSITY	MAX VISCOSITY PRESSURE		PRESSU		X MOP TYPE	D (bar)		CAC CODE	NOT CODE	DRAWING	
PIPE	(mm)	(I/min)	cSt (°E)	min		AC			DC		GAS CODE	NPT CODE	REFERENCE
					В	U	G	В	U	G			
1/4 NPT	10,5	20	12(2)	0,1	20	20	20	10	20	20		21EN2K0B105	1
G 3/8	12	35	12(2)	0,1	20	20	20	10	20	20	21H7KV120		1
3/8 NPT	10,5	25	12(2)	0,1	20	20	20	10	20	20		21EN3K0B105	1
G 1/2	12	45	12(2)	0,1	20	20	20	10	20	20	21H8KV120		1
1/2 NPT	10,5	20	12(2)	0,1	20	20	20	10	20	20		21EN4K0B105	
G 3/4	18	50	12(2)	0,1	16	16	16	3	10	16	21H9KV180		
3/4 NPT	18	50	12(2)	0,1	16	20	20	3	9	16		21EN5KB105	

TECHNICAL SPECIFICATION

- ▶ Body material: Brass UNI EN 12165 CW617N
- ▶ Armature tube: Stainless steel AISI series 300
- ▶ Welded armature tube Stainless steel AISI series 300+Brass UNI EN 12165 CW617N
- ▶ Plungers: Stainless Steel AISI 400 serie
- ▶ **Spring:** Stainless Steel AISI series 300
- ▶ Media: mineral oils, gasoline, diesel, air, water, steam, inert gases
- > Ambient temperature: See coils catalogue page for its compatibility
- ▶ Fluid temperature: -10°C +90°C with seals NBR
 - -10°C +140°C with seals FKM, EPDM
- Design pressure PS: 16 20 bar
- ▶ Protection class: IP65 (complete with electric plug)
- ▶ Electrical conformity: IEC 335

AVAILABLE ON REQUEST

▶ Explosion proof coil Ex nA (see Atex section)

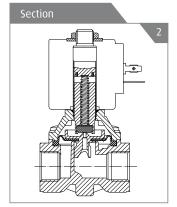


Section

REPAIR KIT KTGEN2K0B10

RELATED ITEMS

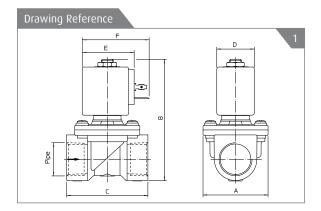
- ▶ P990305: Electrical plug EN 175301-803 Pg9
- ▶ P990306: Electrical plug EN 175301-803 Pg11
- ▶ P992126: Electrical plug EN 175301-803 Pg9 (with OR screw)
- ▶ P992127: Electrical plug EN 175301-803 Pg11 (with OR screw)
- ▶ P992128: Electrical plug EN 175301-803 cable 2 wires, 53cm
- R452714: Antihumidity kit (up to IP67 protection together with plugs P992126, P992127; P992128 & H coil class)
- ▶ P992087: Timer for automatic switch

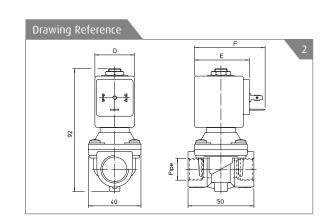


REPAIR KIT KTGOH7KV12 KTGOH9KV18

INSTALLATION

- ▶ The solenoid valves can be mounted in any position
- Other port connections available on request
- Maintenance and instruction sheet available in each solenoid valve box
- Availability of repair kit and coils as spares





Dimensionale Table

Figure	Coil Type	A mm	B mm	C mm	D mm	E mm	F mm
	В				30	42	54
1-2	U	40	90	50 72	36	48	60
	G				52	55	67



21HT-HN-HF N.C./N.O.

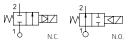


FEATURES

- Minimum pressure not required
 Textyle diaphragm for heavy duty applications also with air
 Normally closed and normally open available as standard

CE





(Pressure Equipment Directive 97/23/CE) for S.V. 21HF7÷21HF8

21HT	6	K0	V	250	
	2= G 1/4 - 1/4 NPT	K0= N.C.	V= FKM		
	3= G 3/8 - 3/8 NPT	Z0= N.0.	Y= NBR+PA	110	
Model	5= G 3/4 - 3/4 NPT			160 200	Orefice
valve	6= G 1 - 1 NPT			250 350	10 ⁻¹ mm
	7 = G1 1/4 - 1 1/4 NPT			400	
	8= G 1/2 - 1/2 NPT				

В	D	А	08	024	А	5
B= 30mm Ø 13	D EN 175301-803	A= Class F	08= 8W	024 = 24V	C= DC	S= Without Approval
U = 36mm Ø 13		V= Class H	12 = 12W	110 = 110V-120V	A= AC	Y= UL, CSA, VDE
G = 52mm Ø 13			14 = 14W	230 = 230V-240V	D= AC	

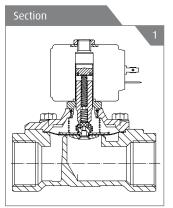
						PRESSL			D (bar)				
PIPE	Ø (mm)	Kv (l/min)	MAX VISCOSITY cSt (°E)	PRESSURE min			COIL	TYPE			GAS CODE	NPT CODE	DRAWING
	(111111)	(1/111111)	(31 (L)	'''''		AC			DC				REFERENCE
Normally Charact		(1) For DC only			В	U	G	В	U	G			
Normally Closed		, ,											
1/4	11	20	12(2)	0	14	14	14	5	14	14		21HN2K0Y110-HT	1
3/8	11	20	12(2)	0	14	14	14	5	14	14	21HT3K0Y110	21HN3K0Y110-HT	1
3/8	11	6,5	12(2)	0	-	-	-	14	-	-	21HT3KOY110-S (1)		1
1/2	16	40	12(2)	0	14	14	14	2,5	11	14	21HT4K0Y160	21HN4K0Y160-HT	1
1/2	16	40	12(2)	0	-	-	-	10	-	-	21HT4K0Y160-S (1)		1
3/4	16	40	12(2)	0	14	14	14	1,5	11	14	21HT5K0Y160	21HN5K0Y160-HT	1
3/4	20	120	12(2)	0	16	16	16	6	16	16	21HF5K0V200		3
3/4	16	30	12(2)	0	-	-	-	10	-	-	21HT5K0Y160-S (1)		1
1	25	120	12(2)	0	8	14	14	-	1,5	6	21HT6K0Y160	21HN6K0Y160-HT	1
1	25	90	12(2)	0	-	-	-	1	6	12	21HT6K0Y160-S (1)		1
1	25	140	12(2)	0	16	16	16	5	16	12	21HF6K0V250		3
1 1/4	35	270	12(2)	0	16	16	16	-	-	6	21HF7K0V350		3
1 1/2	40	280	12(2)	0	16	16	16	-	-	6	21HF8K0V400		3
Normally Open		(*) To use in AC	, DC coil will be supplied	with a bridge rec	tifier								
1/4	11	20	12(2)	0	10	-	-	10	-	-		21HN2Z0Y110-HT(*)	2
3/8	11	20	12(2)	0	10	-	-	10	-	-	21HT3Z0Y110(*)	21HN3Z0Y110-HT(*)	2
1/2	16	40	12(2)	0	10	-	-	10	-	-	21HT4Z0Y160(*)	21HN4Z0Y160-HT(*)	2
3/4	16	40	12(2)	0	10	-	-	10	-	-	21HT5ZOY160(*)	21HN5Z0Y160-HT(*)	2

- ▶ Body material: Brass UNI EN 12165 CW617N
- ▶ Armature tube: Stainless Steel AISI 300 series
- ▶ Plungers: Stainless Steel AISI 400 series
- ▶ **Spring:** Stainless Steel AISI 300 series
- Media: air, gasoline, fuel oils, inert gases, water, mineral oils, diesel, steam
- ▶ Ambient temperature: See coils catalogue page for its compatibility
- ▶ Fluid temperature: -10°C +90°C with NBR+PA seals
 - -10°C +140°C with FKM+NBR,EPDM seals
- ▶ Design pressure PS: 16 bar
- ▶ Protection class: IP65 (complete with electric plug)
- ▶ Electrical conformity: IEC 335
- ▶ Switching time: 20 40 msec

AVAILABLE ON REQUEST

▶ Explosion proof coil Ex nA (see Atex section)





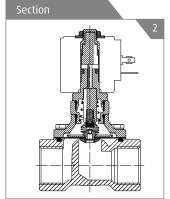
REPAIR KIT Normally Closed

21HN - 21HT For 1/4÷3/8 KTGHT3K0Y11 For 1/2÷3/4 KTGHT4K0Y16 For 1 KTGHT6K0Y25 21HF

For 1 KTGHF5K0V20 For 1 1/4÷1 1/2 KTGHF7K0V35

RELATED ITEMS

- P990305: Electrical plug EN 175301-803 Pg9
- P990306: Electrical plug EN 175301-803 Pg11
- ▶ P992126: Electrical plug EN 175301-803 Pg9 (with OR screw)
- ▶ P992127: Electrical plug EN 175301-803 Pg11 (with OR screw)
- ▶ P992128: Electrical plug EN 175301-803 cable 2 wires, 53cm
- R452714: Antihumidity kit (up to IP67 protection together with plugs P992126, P992127; P992128 & H coil class)
- ▶ P992087: Timer for automatic switch

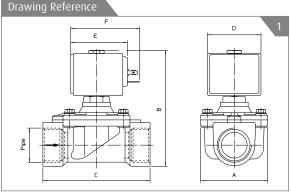


REPAIR KIT Normally Open

21HN - 21HT For 1/4÷3/8 KTGHT3Z0Y11 For 1/2÷3/4 KTGHT4ZK0Y16

INSTALLATION

- ▶ The solenoid valves can be mounted in any position
- Other port connections available on request
- ▶ Maintenance and instruction sheet available in each solenoid valve box
- $\,\blacktriangleright\,$ Availability of repair kit and coils as spares



Drawing Reference

Drawing Reference 2

	Dimensionale lable												
	Figure	Coil Type	D mm	E mm	F mm	G mm							
		В	30	42	54	20,5							
	1-2-3	U	36	48	60	23,5							
		G	52	55	67	25							



21IH-IN N.C.

FEATURES

- Minimum pressure not required
 Textyle diaphragm for heavy duty applications
 AISI 316 for high compatibility with aggressive fluids

CE



(Pressure Equipment Directive 97/23/CE) for S.V. 21IH7÷21IH8 - IHS 21IN7÷21IN8...-IHS

21IH	3	K1	V	150	
	3= G 3/8 - 3/8 NPT	K1 = N.C.	V= FKM		
	4= G 1/2 - 1/2 NPT			150	
Model	5= G 3/4 - 3/4 NPT			160 200	Orefice
valve	6= G 1 - 1 NPT			250 350	10 ⁻¹ mm
	7 = G1 1/4 - 1 1/4 NPT			400	
	8= G1 1/2 - 1 1/2 NPT				

В	D	А	08	024	А	S
B = 30mm Ø 13	D EN 175301-803	A= Class F	08= 8W	024 = 24V	C= DC	S= Without Approval
U = 36mm Ø 13		V= Class H	12 = 12W	110 = 110V-120V	A= AC	Y= UL, CSA, VDE
G = 52mm Ø 13			14 = 14W	230 = 230V-240V	D= AC	

PIPE	Ø (mm)	Kv (l/min)	MAX VISCOSITY cSt (°E)	PRESSURE min	PRESSURE MAX MOPD (bar) COIL TYPE AC DC		COIL TYPE		COIL TYPE		COIL TYPE		COIL TYPE		COIL 1		COIL		COIL TY		COIL TYPE		TYPE DC		GAS CODE	NPT CODE	DRAWING REFERENCE
				B U G		G	В	U	G			REFERENCE															
3/8	15	40	12(2)		14	-	-	6	-	14	21IH3K1V150	21IN3K1V150-IH	1														
1/2	16	50	12(2)		14	-	-	6	-	14	21IH4K1V160	21IN4K1V160-IH	1														
3/4	20	60	12(2)		14	-	-	6	-	14	21IH5K1V200	21IN5K1V200-IH	1														
1	25	140	12(2)	0	14	-	-	3	8	14	21IH6K1V250	21IN6K1V250-IH	1														
1 1/4	35	300	12(2)	U	-	14	-	-	-	-	21IH7K1V350	21IN7K1V250-IH	1														
1 1/4	35	300	12(2)		-	-	-	-	7	-	21IH7K1V350-S	21IN7K1V250-IHS	1														
1 1/2	40	340	12(2)		-	14	-	-	-	-	21IH8K1V400	21IN8K1V400-IH	1														
1 1/2	40	340	12(2)		-	-	-	-	7	-	21IH8K1V400-S	21IN8K1V400-IHS	1														

- ▶ Body material: Stainless Steel AISI 316 series
- ▶ Armature tube: Stainless Steel AISI 316 series
- Plungers: Stainless Steel AISI 400 series
- Spring: Stainless Steel AISI 300 series
- Ex d Housing in Aluminium die cast
- Media: air, inert gas, water, mineral oils, gasoline, diesel
- > Ambient temperature: See coils catalogue page for its compatibility
- ▶ Fluid temperature: -10°C +90°C with NBR + PA seals -10°C +140°C with FKM + PA seals
- Design pressure PS: 16 bar
- ▶ Protection class: IP65 (complete with electric plug)
- ▶ Electrical conformity: IEC 335

AVAILABLE ON REQUEST

- ▶ Explosion proof coil Ex m (see Atex section)
- ▶ Explosion proof coil Ex d (see Atex section)
- ▶ Explosion proof coil Ex nA (see Atex section)
- ▶ Latching coil (see Atex section)



REPAIR KIT G 3/8 - 3/8 NPT ÷ G 1/2 - 1/2 NPT KTGIH3K1V15 G 3/4 - 3/4 NPT KTGIH5K1V20

REPAIR KIT KTGIH6K1V25 G 1 1/4 - 1 1/4 NPT ÷ G 1 1/2 - 1 1/2 NPT KTGIH7K1V35

RELATED ITEMS

- P990305: Electrical plug EN 175301-803 Pg9
- ▶ P990306: Electrical plug EN 175301-803 Pg11
- ▶ P992126: Electrical plug EN 175301-803 Pg9 (with OR screw)
- ▶ P992127: Electrical plug EN 175301-803 Pg11 (with OR screw)
- ▶ P992128: Electrical plug EN 175301-803 cable 2 wires, 53cm
- R452714: Antihumidity kit (up to IP67 protection together with plugs P992126, P992127; P992128 & H coil class)
- ▶ P992087: Timer for automatic switch

- ▶ The solenoid valves can be mounted in any position
- Other port connections available on request
- Maintenance and instruction sheet available in each solenoid valve box
- ▶ Availability of repair kit and coils as spares

Drawing Reference	
<u> </u>	

Dimensionale Table											
Figure	Coil Type	D mm	E mm	F mm	G mm						
	В	30	42	54	20,5						
1	U	36	48	60	23,5						
	G	52	55	67	25						

Dimensiona	Dimensionale Table											
Figure	Pipe	A mm	B mm	C mm								
	G 3/8 3/8 NPT	58	92	68								
	G 1/2 1/2 NPT	50	72	00								
1	G 3/4 3/4 NPT	58	100	75								
,	G 1 1 NPT	65	109	90								
	G 1/4 1/4 NPT	94	125	128								
	G 1/2 1/2 NPT	74	123	120								



21JN N.C.





- Compact designLow power consumptionNSF approved version

CE NSE



21J	N1	R0	٧	12	
Model	N1 = G 1/8	R0= N.C.	V= FKM	15	Orefice
valve	BM= M5X0,5		B= NBR	20 25	10 ⁻¹ mm

L	В	А	05	024	С	5
		A= Class F	05 = 5W	024 = 24V	C= DC	S= Without Approval
L 22 mm	В	V= Class H	04= 4W	110 = 110V-120V	A= AC	
2,5W - 5W -4W	EN 175301-803			220 = 220V	B= AC	U= UL
				230 = 230V	A= AC	V= VDE

PIPE	Ø Kv MAX VISCOSITY (mm) (I/min) cSt (°E)	PRESSURE	PR	PRESSURE MAX MOPD (bar) COIL TYPE					- GAS CODE	NPT CODE	DRAWING		
FIFL		(I/min)	cSt (°E)	min	2,5W	AC 5W		2,5W	DC 5W		UA3 CODE	1117 6002	REFERENCE
M5	2	2	37(5)		-	22		۷۷ د, ک	10		21JBMR0B20		2
MS	1,2	1	12(2)		20	25		3,5	12		21JN1R0V12	Part numbering example add "-JN" after code 21JN1R0V20-JN	1
	1,2	'	12(2)	0	20	23		ر, ر	12		21)11110112		'
	1,2	1	12(2)		20	25		3,5	12		21JN1R1V12-T3(*)		1
C 1 /0	1,5	1,1	12(2)		-	25		-	10		21JN1R0V15		1
G 1/8	2	2	37(5)		-	22		-	10		21JN1R0V20		1
	2,3	2,3	37(5)		6	18		-	8		21JN1R0V23		1
	2,3	2,3	37(5)		6	18		-	8		21JN1R1V23-T3(*)		1

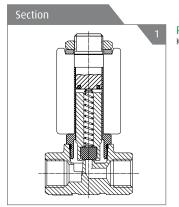
(*) NSF Certified

- ▶ Body material: Brass
- ▶ Armature tube: Stainless steel AISI 300 series
- ▶ Plungers: Stainless Steel AISI 400 series
- ▶ **Spring:** Stainless Steel AISI 300 series
- ▶ Media: mineral oils, gasoline, diesel, fuel oils water, air, inert fluids, inert gases
- ▶ Ambient temperature: See coils catalogue page for its compatibility
- ▶ Fluid temperature: -10°C +140°C with FKM seals -10°C +90°C with NBR seals
- Design pressure PS: 40 bar
- ▶ Protection class: IP65 (complete with electric plug)
- ▶ Electrical conformity: IEC 335
- > Switching time: 20 msec A (Depending on pressure conditions)

AVAILABLE ON REQUEST

- Nickel plated version
- ▶ Explosion proof coil Ex nA (see Atex section)

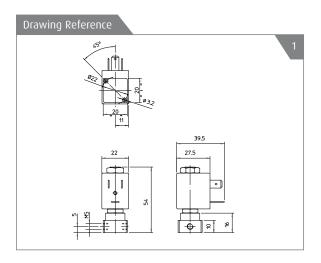


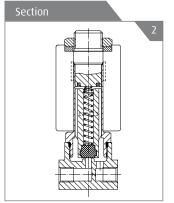


REPAIR KIT KT100R0V25-FJ

RELATED ITEMS

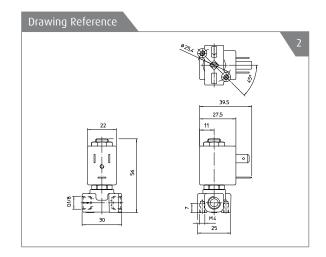
▶ P990307: Electrical plug EN 175301-803 Pg11





REPAIR KIT KT100R0B25-FJ

- ▶ The solenoid valves can be mounted in any position
- Instruction sheet available in each solenoid valve box
- ▶ Fixing holes





21L N.C./N.O.







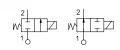




FEATURES

- Small poppet valve for tight shut off
 Mountable in any position
 AISI 316 for aggressive fluids





21L	1	K1	V	25	
Model	1 = G 1/8	K1= N.C.	V= FKM	25 30	Orefice
valve	2 = G 1/4	Z= N.0.	T= PTFE	40 55	10 ⁻¹ mm

L	В	А	05	024	А	5
B = 30mm Ø 13		A= Class F	08= 8W	024 = 24V	C= DC	S= Without Approval
U = 36mm Ø 13	D EN 175301-803	V= Class H	12 = 12W	112 = 110V-120V	A= AC	Y= UL, CSA, VDE
G = 52mm Ø 13			14 = 14W	230 = 230V-240V	D= AC	

						PRESSU	JRE MA	х морі	D (bar)				
PIPE		Kv	MAX VISCOSITY	PRESSURE			COIL	TYPE			GAS CODE	NPT CODE	DRAWING
11112	(mm)	(l/min)	cSt (°E)	min		AC			DC		das cobe	111 6002	
					В	U	G	В	U	G			
Normally Closed													
	2,5	3,2	53(7)	0	14	30	30	9	25	25	21L1K1T25		1
	3	4	53(7)	0	10	25	25	6	17	20	21L1K1T30		1
G 1/8	4	5	53(7)	0	6	15	15	1,7	6	8	21L1K1T40		1
0 1/0	2,5	3,2	53(7)	0	14	30	30	9	25	25	21L1K1T25		1
	3	4	53(7)	0	10	25	25	6	17	20	21L1K1T30		1
	4	5	53(7)	0	6	15	15	1,7	6	8	21L1K1T40	Part numbering	1
	2,5	3,2	53(7)	0	14	30	30	9	25	25	21L2K1T25	example add "N"	2
	3	4	53(7)	0	10	25	25	6	17	20	21L2K1T30	at the 4th digit	2
	4	5	53(7)	0	6	15	15	1,7	6	8	21L2K1T40	21LN1K1T25	2
G 1/4	5,5	9	53(7)	0	3,5	6	7	1	2	5	21L2K1T55		2
0 1/4	2,5	3,2	53(7)	0	14	30	30	9	25	25	21L2K1T25		2
	3	4	53(7)	0	10	25	25	6	18	20	21L2K1T30		2
	4	5	53(7)	0	6	15	15	1,7	6	8	21L2K1T40		2
	5,5	9	53(7)	0	3,5	7	10	1	2,5	5	21L2K1T55		2
Normally Open													
G 1/8	2,5	3,2	53(7)	0	14	-	-	14	-	-	21L1ZV25(*)		2
0 1/0	3	4	53(7)	0	10	-	-	10	-	-	21L1ZV30(*)	(On request)	2
G 1/4	5,5	9	53(7)	0	2,5	3,5	3,5	2,5	3,5	3,5	21L2ZV55(*)		2

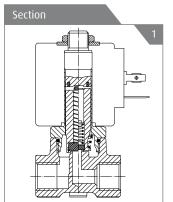
(*) D for B coil; G for U/G coil

- ▶ Body material: Stainless steel AISI 316 series
- ▶ Armature tube: Stainless steel AISI 300 series
- Plungers: Stainless Steel AISI 400 series
- Spring: Stainless Steel AISI 300 series
- Media: demineralized water, steam, syrups, chemical products compatible with stainless steel
- Ambient temperature: See coils catalogue page for its compatibility
- ▶ Fluid temperature: -10°C +140°C with FKM seals -40°C +180°C with PTFE seals
- Design pressure PS: 40 bar
- ▶ Protection class: IP65 (complete with electric plug)
- ▶ Electrical conformity: IEC 335
- > Switching time: 20 40 msec (depending on pressure conditions)

AVAILABLE ON REQUEST

- ▶ Lateral regulation
- ▶ Explosion proof coil Ex nA (see Atex section)



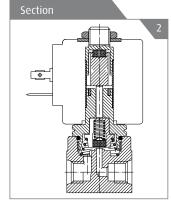


REPAIR KIT Normally Closed Orifice <=3mm: KT130KT30-H KT130KV30-H

Orifice >=3mm: KT130KT55-H KT130KV55-H

RELATED ITEMS

- P990305: Electrical plug EN 175301-803 Pg9
- ▶ P990306: Electrical plug EN 175301-803 Pg11
- ▶ P992126: Electrical plug EN 175301-803 Pg9 (with OR screw)
- ▶ P992127: Electrical plug EN 175301-803 Pg11 (with OR screw)
- ▶ P992128: Electrical plug EN 175301-803 cable 2 wires, 53cm R452714: Antihumidity kit (up to IP67 protection together with
- plugs P992126, P992127; P992128 & H coil class)
- ▶ P992087: Timer for automatic switch



REPAIR KIT Normally Open KT130Z30-F Coil B type (8W) KT130ZV55-F Coil U type (12W) Coil G type (14W) KT130ZV55-G

INSTALLATION

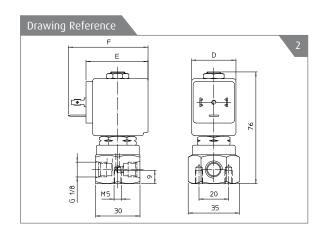
- ▶ The solenoid valves can be mounted in any position
- ▶ Holes and threaded connections for panel fixing
- ▶ Other port connections available on request
- Maintenance and instruction sheet available in each solenoid valve box
- ▶ Availability of repair kit and coils as spares

Drawing Reference

E E TO
30 39

Dimensionale Table

Figure	Coil Type	D mm	E mm	F mm
	В	30	42	54
1-2-3	U	36	48	60
	G	52	55	67











FEATURES

- Response time reduced
 Reliable for heavy applications
 In line connection
 Suitable for compressors applications



C€

I	21M	0	A	V	25	
	Model valve	0 = G 1/8	A= N.C.	V= FKM	15 17 25	Orefice 10 ⁻¹ mm

В	D	А	08	024	А	S
		A= Class F		024 = 24V	C= DC	S= Without Approval
B= 30mm Ø 13	D EN 175301-803	V= Class H	08= 8W	112 = 110V	A= AC	Y= UL, CSA, VDE
				230 = 230V	D= AC	
L	В	А	05	024	А	5
L= 22mm Ø 10	B EN 175301-803	A= Class F	05= 5W	024 = 24V	A= DC	S= Without Approval

						PRESSU	JRE MA	х морі	D (bar)			
PIPE	Ø	Kv	MAX VISCOSITY	PRESSURE			COIL	TYPE		GAS CODE	NPT CODE	DRAWING
FIFL	(mm)	(I/min)	cSt (°E)	min		AC			DC	UAS CODE	INFT CODE	REFERENCE
					В	L		В	L			
	2,5	3,5	53(7)	0	18	-		-	-	21M0AV25(*)		1
	2,5	3,5	53(7)	4	-	-		18	-	21M0AV25(*)		1
	2,5	3,5	53(7)	0	18	-		-	-	212M0AV25(*)		1
	2,5	3,5	53(7)	4	-	-		18	-	212M0AV25(*)		1
G 1/8	2,5	3,5	53(7)	0	8	-		-	-	21M0AV25(**)		1
0 1/0	2,5	3,5	53(7)	4	-	-		8	-	21M0AV25(**)		1
	2,5	3,5	53(7)	0	8	-		-	-	212M0AV25(**)		1
	2,5	3,5	53(7)	4	-	-		8	-	212M0AV25(**)		1
	2,5	1	12(2)	0	-	15		-	-	4144XPV17		2
	2,5	0	12(2)	0,8	-	12		-	12	4144W0V15		2

(*) for Gas/Air (**) for Liquids

- ▶ Body material: Brass UNI EN 12164 CW614N
- ▶ Armature tube: Stainless steel AISI 300 series
- ▶ Plungers: Stainless Steel AISI 400 series
- ▶ **Spring:** Stainless Steel AISI 300 series
- Media: mineral oils, gasoline, diesel, fuel oils, water, air, inert gases
- ▶ Ambient temperature: See coils catalogue page for its compatibility
- ▶ Fluid temperature: -10°C +90°C with NBR seals
 - -10°C +140°C with FKM seals
- Design pressure PS: 25 bar for S.V. 21MDesign pressure PS: 40 bar for S.V. 4144
- ▶ Protection class: IP65 (complete with electric plug)
- ▶ Electrical conformity: IEC 335

AVAILABLE ON REQUEST

▶ Explosion proof coil Ex nA (see Atex section)

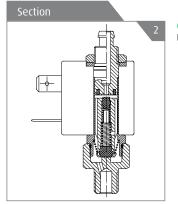


Section

REPAIR KIT

RELATED ITEMS

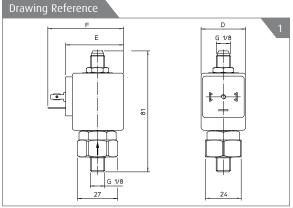
- ▶ P990305: Electrical plug EN 175301-803 Pg9
- ▶ P990306: Electrical plug EN 175301-803 Pg11
- ▶ P992126: Electrical plug EN 175301-803 Pg9 (with OR screw)
- ▶ P992127: Electrical plug EN 175301-803 Pg11 (with OR screw)
- ▶ P992128: Electrical plug EN 175301-803 cable 2 wires, 53cm
- R452714: Antihumidity kit (up to IP67 protection together with plugs P992126, P992127; P992128 & H coil class)
- ▶ P992087: Timer for automatic switch

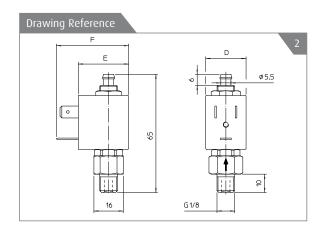


COIL P/N KT100XPV25-IJ

INSTALLATION

- ▶ The solenoid valves can be mounted in any position
- ▶ Holes and threaded connections for panel fixing
- ▶ Other port connections available on request
- Maintenance and instruction sheet available in each solenoid valve box
- ▶ Availability of repair kit and coils as spares





21T N.C.





FEATURES

- Compact designMinimim pressure is not requiredVersion DVGW approved for gas application



C€

21T	1	В	V	17	
	1 = G 1/8			17	
Model valve	2 = G 1/4	K= N.C.	V= FKM	22 28	Orefice 10 ⁻¹ mm
				40	

В	D	А	80	024	Α	5
		A= Class F	08= 8W	024 = 24V	C= DC	S= Without Approval
B= 30mm Ø 13	D EN 175301-803	V= Class H	04= 4W	110 = 110V-120V	A= AC	Y= UL, CSA, VDE
				230 = 230V	D= AC	

PIPE	Ø (mm)	Kv (I/min)	MAX VISCOSITY cSt (°E)	PRESSURE min			X MOP TYPE		GAS CODE	NPT CODE	DRAWING REFERENCE
	(11111)	(1/11111)	(5)		В	AC	В	DC			KEFEKENCE
Normally Closed	ı										
	1,7	1,5	37(5)	0	30		15		21TG1KR0V17	21TN1KR0V17	1
G 1/8	2,2	2,1	37(5)	0	20		10		21TG1KR0V22	21TN1KR0V22	1
0 1/0	2,8	3,5	53(7)	0	12		6		21TG1KR0V28	21TN1KR0V28	1
	4	5	53(7)	0	6		2		21TG1KR0V40	21TN1KR0V40	1
	1,7	1,5	37(5)	0	30		15		21TG2KR0V17	21TN2KR0V17	1
G 1/4	2,2	2,1	37(5)	0	20		10		21TG2KR0V22	21TN2KR0V22	1
0 1/4	2,8	3,5	53(7)	0	12		6		21TG2KR0V28	21TN2KR0V28	1
	4	5	53(7)	0	6		2		21TG2KR0V40	21TN2KR0V40	1
Normally Closed	DVGW Appro	oval									
G 1/4	4	5	53(7)	0	2		-		21T2BB40-F-AP		1
0 1/4	4	,	-	0	2		-		2362-AP		2







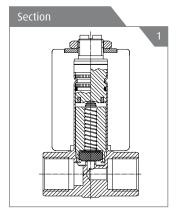


- ▶ Body material: Brass UNI EN 12165 CW617N
- ▶ Armature tube: Brass UNI EN 12165 CW617N
- ▶ Plungers: Stainless Steel AISI 400 series
- ▶ **Spring:** Stainless Steel AISI 300 series
- Media: mineral oils, gasoline, diesel, fuel oils, water, air, inert fluids, inert gases, combustible gases
- Ambient temperature: See coils catalogue page for its compatibility
- ▶ Fluid temperature: -10°C +140°C with seals FKM -10°C +90°C with seals NBR
- ▶ Working temperature for S.V. approved: -15°C +80°C
- ▶ Design pressure PS: 30 bar
- ▶ Protection class: IP 65 (complete with electric plug)
- ▶ Electrical conformity: IEC 335
- > Switching time: 20 msec (depending on pressure conditions)

AVAILABLE ON REQUEST

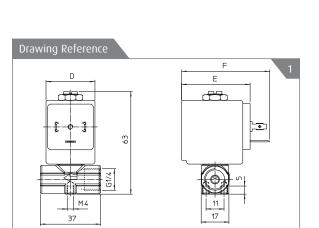
▶ Explosion proof coil Ex nA (see Atex section)





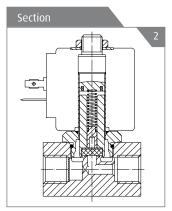
RELATED ITEMS

- ▶ P990305: Electrical plug EN 175301-803 Pg9
- ▶ P990306: Electrical plug EN 175301-803 Pg11



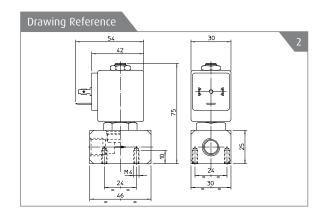
Dimensionale Table

Figure	Pipe	Coil Type	D mm	E mm	F mm
1	G 1/8	R	30	/12	54
'	G 1/4	В	30	72	54



COIL P/N RBDA04230AS

- ▶ The solenoid valves can be installed in any position
- ▶ Fixing holes
- Other port connections available on request
- Instruction sheet available in each solenoid valve box
- ▶ Coils available as spares





21W N.C./N.O.





FEATURES

- High flow rates
 Long life version
 Wide range of applications valves for liquids and gases
 Wide elastomers range
 Mountable in any position



21W	3	K	В	190	
	3= G 3/8 - 3/8 NPT	K= N.C.	V= FKM		
	4= G 1/2 - 1/2 NPT	Z = N.O.	B= NBR		
	5= G 3/4 - 3/4 NPT		E= EPDM	130 190	
Model valve	6= G 1 - 1 NPT			250 350	Orefice 10 ⁻¹ mm
	7 = G 11/4 - 11/4 NPT			400 500	
	8= G 11/2 - 11/2 NPT				
	9= G 2 - 2 NPT				

В	D	А	08	024	А	5
		A= Class F		024 = 24V	A= AC	S= Without Approval
B= 30mm Ø 13	D EN 175301-803	V= Class H	08= 8W	110 = 110V	C= DC	Y= UL, CSA, VDE
				223= 220V-230V		
L	В	А	05	024	А	5
L	В	А	05	024 024= 24V	A = AC	S = Without Approval
L= 22mm Ø 10	B B EN 175301-803	A = Class F	05 05= 5W			S= Without Approval

						PRESSU	IRE MA	х морі	D (bar)				
DIDE		Kv	MAX VISCOSITY	PRESSURE				TYPE			CAC CODE	NIDT CODE	FLOW
PIPE	(mm)	(I/min)	cSt (°E)	min		AC			DC		GAS CODE	NPT CODE	CURVE
					В	U	G	В	U	G			
Normally Closed													
3/8	13	60	12(2)	0,2	16	-	-	16	-	-	21WA3K0B130	21WN3K0B130	1
3/8	13	60	12(2)	0,2	-	12	-	-	12	-	21WA3R0B130	21WN3R0B130	2
1/2	13	70	12(2)	0,2	16	-	-	16	-	-	21WA4K0B130	21WN4K0B130	1
1/2	13	70	12(2)	0,2	-	12	-	-	12	-	21WA4R0B130	21WN4R0B130	2
3/4	19	140	12(2)	0,2	16	-	-	16	-	-	21W3KB190	21WN5KB190	1
1	25	190	12(2)	0,2	16	-	-	16	-	-	21W4KB250	21WN6KB250	1
1 1/4	35	400	12(2)	0,2	10	-	-	10	-	-	21W5KB250	21WN7KB350	1
1 1/2	40	520	12(2)	0,2	10	-	-	10	-	-	21W6KB400	21WN8KB400	1
2	50	750	12(2)	0,2	10	-	-	10	-	-	21W7KB500	21WN9KB500	1
Normally Open													
3/8	13	60	12(2)	0,2	16	-	-	16	-	-	21WA3K0B130	21WN3Z0B130	1
3/8	13	60	12(2)	0,2	16	12	-	-	12	-		21WN3ZIB130	1
1/2	13	70	12(2)	0,2	16	-	-	16	-	-	21WA4Z0B130	21WN4Z0V130	1
1/2	13	70	12(2)	0,2	16	12	-	-	12	-	21WA4Z0B130	21WN4Z0V130	1
3/4	19	140	12(2)	0,2	16	-	-	16	-	-	21W3ZB190		1
1	25	190	12(2)	0,2	16	-	-	16	-	-	21W4ZB250		1
1 1/4	35	400	12(2)	0,2	10	-	-	10	-	-	21W5ZB250		1
1 1/2	40	520	12(2)	0,2	10	-	-	10	-	-	21W6ZB400		1
2	50	750	12(2)	0,2	10	-	-	10	-	-	21W7ZB500		1

- ▶ Body material: Brass UNI EN 12165 CW617N
- ▶ Armature tube: Stainless Steel AISI 300 series
- Plungers: Stainless Steel AISI 400 series
- Spring: Stainless Steel AISI 300 serie
- Media: air, water, inert gas, low pressure steam mineral oils, gasoline, diesel, R 134a, R 404a
- Ambient temperature: See coils catalogue page for its compatibility
- ▶ Fluid temperature: -10°C +140°C with FKM, EPDM seals
 - -10°C +90°C with NBR seals
- ▶ **Design pressure PS:** G 3/8 G 1/2 20 bar

3 /8 NPT - 1 NPT 25 bar G 3/4 - G 1 25 bar

G 1 1/4 - 1 1/4 NPT - G 2 - 2 NPT 16 bar ▶ Protection class: IP 65 (complete with electric plug)

▶ Electrical conformity: IEC 335

AVAILABLE ON REQUEST

- ▶ Manual override (i.e. 21WA3K0B130-M)
- Manual override+closing speed control (i.e. 21WA3K0B130-MR)
- Progressive closing (i.e. 21WA3K0B130-PC)
- ▶ Spring on diaphragm (i.e. 21WA4R0B130-MM)
- Latching coils (see coil section)
- Explosion proof coil Ex nA (see Atex section)



REPAIR KIT

Normally Closed - Kit 13 mm G3/8-3/8 NPT ÷ G 1/2-1/2 NPT KTGWA3K0B13 G3/4-3/4 NPT ÷ G 1-1 NPT KTG0W3KB19 G1 1/4-1 1/4 NPT ÷ G 1 1/2- 1 1/2 NPT KTG0W5KB35 G 2-2 NPT KTG0W7KB50

Normally Closed - Kit 10 mm

RELATED ITEMS

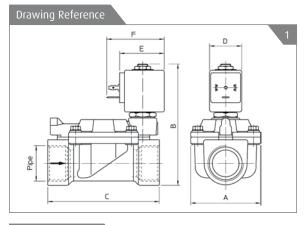
- P990305: Electrical plug EN 175301-803 Pg9
- ▶ P990306: Electrical plug EN 175301-803 Pg11
- ▶ P992126: Electrical plug EN 175301-803 Pg9 (with OR screw)
- ▶ P992127: Electrical plug EN 175301-803 Pg11 (with OR screw)
- ▶ P992128: Electrical plug EN 175301-803 cable 2 wires, 53cm
- ▶ P992087: Timer for automatic switch

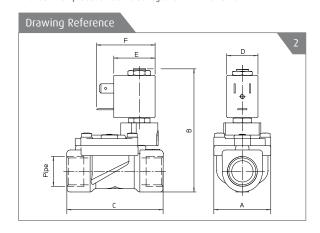
REPAIR KIT

Normally Closed - Kit 13 mm G3/8-3/8 NPT ÷ G 1/2-1/2 NPT KTGWA3K0B13 G3/4-3/4 NPT ÷ G 1-1 NPT KTG0W3KB19 G1 1/4-1 1/4 NPT ÷ G 1 1/2- 1 1/2 NPT KTG0W5KB35 G 2-2 NPT KTG0W7KB50

INSTALLATION

- ▶ The solenoid valves can be mounted in any position
- ▶ Holes and threaded connections for panel fixing
- Other port connections available on request
- Maintenance and instruction sheet available in each solenoid valve box
- Availability of repair kit and coils as spares
- Attention: for fuse selection please refer to the "Instruction sheet Atex products" delivered together with the valve





Dimensionale Table

Figure	Pipe	Coil Type	A mm	B mm	C mm	D mm	E mm	F mm
	G 3/8 - 3/8 NPT	В	40	97	60	30/47	42	54
	03/0 3/01011	L	40	84,5	00	-	-	-
	G 1/2 - 1/2 NPT	В	40	97	66	-	-	-
	G 1/2 - 1/2 INFT	L	40	84,5	00	-	-	-
1	G 3/4 - 3/4 NPT	В	65	105	104	-	-	-
	G 1 - 1 NPT	В	65	112	104	-	-	-
	G 1 1/4 - 1 1/4 NPT G 1 1/2 - 1 1/2 NPT	В	98	125	144	-	-	-
	G 1/2 - 1/2 NPT	В	118	141	172	-	-	-



21X N.C.





- Proven Pilating SystemReliable for heavy applicationsSuitable for high temperature



CE

21X	2	K	V	120	
	2 = G 1/2	K= N.C.	V= FKM		
Model	3 = G 3/4	K = N.O.	B= NBR	120	Orefice
valve	4= 6 1		E= EPDM	190 250	10 ⁻¹ mm
			T= PTFE		

В	D	А	08	024	A	5
B = 30mm Ø 13		B= Class F	08= 8W	024 = 24V	C= DC	S= Without Approval
U = 36mm Ø 13	D EN 175301-803	V= Class H	12 = 12W	112 = 110V-120V	A= AC	Y= UL, CSA, VDE
G = 52mm Ø 13			14 = 14W	230 = 230V	D= AC	

DIDE	Ø	Kv	Kv MAX VISCOSITY (I/min) cSt (°E)	PRESSURE	PRESSURE MAX MOPD (bar) COIL TYPE						CAC CODE	NOT CODE	DRAWING
PIPE	(mm)	(l/min)		min		AC			DC		GAS CODE	NPT CODE	REFERENCE
					В	U	G	В	U	G			
G 1/2	12	35	-	0,5	10	-	-	10	-		21X2KT120		1
G 1/2	12	35	12(2)	0,1	20	-	-	20	-	-	21X2KV120		1
1/2 NPT	12	35	12(2)	0,1	20	-	-	20	-	-		21XN4K1V120	1
G 3/4	19	120	-	0,5	10	-	-	10	-	-	21X3KT190		1
G 3/4	19	130	12(2)	0,1	16	-	-	16	-	-	21X3KV190		1
G 1	25	130	-	0,5	10	-	-	10	-	-	21X4KT250		1
G 1	25	160	12(2)	0,1	16	-	-	16	-	-	21X4KV120		1
1 NPT	25	160	12(2)	0,1	16	-	-	16	-	-		21XN6K1V250	1

- ▶ Body material: Stainless Steel AISI 316 series
- ▶ Armature tube: Stainless Steel AISI 300 series
- ▶ Plungers: Stainless Steel AISI 400 series
- ▶ **Spring:** Stainless Steel AISI 300 series
- Media: steam, hot water, chemical products compatible with stainless steel, demineralized water, air, water, low pressure steam
- Ambient temperature: See coils catalogue page for its compatibility
- ▶ Fluid temperature: -10°C +90°C with NBR seals

-10°C +140°C with FKM, EPDM seals

(*) +180°C with PTFE seals

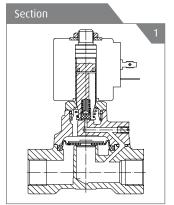
(* WARNING: For a correct functioning of the solenoid valve the minimum temperature should not be less than + 60°C; in order to ensure a long diaphragm life, the steam filtration is recommended)

- Design pressure PS: 25 bar
- ▶ Protection class: IP 65 (complete with electric plug)
- ▶ Electrical conformity: IEC 335
- ▶ Switching time: 20-40 msec

AVAILABLE ON REQUEST

▶ Explosion proof coil Ex nA (see Atex section)





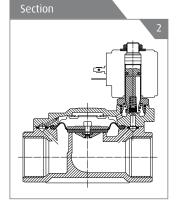
REPAIR KIT

KT130KT30-H KT130KV30-H

G 1/2 - 1/2 NPT KTG0X1KT12 KTG0X1KV12 G 3/4 - G 1 - 1 NPT KTG0X3KT19

RELATED ITEMS

- P990305: Electrical plug EN 175301-803 Pg9
- ▶ P990306: Electrical plug EN 175301-803 Pg11
- ▶ P992126: Electrical plug EN 175301-803 Pg9 (with OR screw)
- ▶ P992127: Electrical plug EN 175301-803 Pg11 (with OR screw)
- P992128: Electrical plug EN 175301-803 cable 2 wires, 53cm
- R452714: Antihumidity kit (up to IP67 protection together with plugs P992126, P992127; P992128 & H coils class)
- ▶ P992087: Timer for automatic switch



INSTALLATION

- ▶ The solenoid valves can be mounted in any position
- ▶ Holes and threaded connections for panel fixing
- ▶ Other port connections available on request
- Maintenance and instruction sheet available in each solenoid valve box
- Availability of repair kit and coils as spares

Drawing Reference

Dimensionale Table

Figure	Pipe	Coil Type	A mm	B mm	C mm	D mm	E mm	F mm
1-2	G 1/2 1/2 NPT	В	40	103	73	30	42	54
1-2	G 3/4 G1 1 NPT	В	65	115	104	30	42	54



21YW-YN N.C./N.O.





FEATURES

- Dedicate to control steam applicationPiston designHigh life time

CE



21YW	4	K0	T	15	
	4= G 1/2 1/2 NPT	K0= N.C.			
Model valve	5= G 3/4 3/4 NPT	ZO = N.O.	T= PTFE	130 190 250	Orefice 10 ⁻¹ mm
	6= G 1 1 NPT				

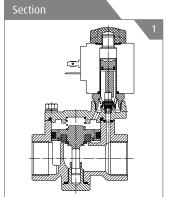
В	D	٧	80	024	C	5
		F= Class H		024 = 24V	C= DC	S= Without Approval
B = 30mm Ø 13	D EN 175301-803	V= Class H	08= 8W	110 = 110V-120V	A= AC	Y= UL, CSA, VDE
				230 = 230V-240V	D= AC	

					PRESSU	JRE MAX	MOPI	D (bar)				
PIPE		Kv	MAX VISCOSITY	PRESSURE			COIL T	YPE		GAS CODE	NPT CODE	FLOW
PIPE	(mm)	(I/min)	cSt (°E)	min		AC			DC	GAS CODE	NPT CODE	CURVE
								В				
Normally Closed												
G 1/2	13	50	-	0,9	10			10		21YW4K0T130		1
1/2 NPT	13	50	-	0,9	10			10			21YN4K0T130-YW	1
G 3/4	19	90	-	0,9	10			10		21YW5K0T190		1
3/4 NPT	19	90	-	0,9	10			10			21YN5K0T190-YW	1
G 1	25	160	-	0,9	10			10		21YW6K0T250		1
1 NPT	25	160	-	0,9	10			10			21YN6K0T250-YW	1
Normally Open												
G 1/2	13	50	-	0,9	10			10		21YW4Z0T130		2
1/2 NPT	13	50	-	0,9	10			10			21YN4KZ0T130-YW	2
G 3/4	19	90	-	0,9	10			10		21YW5Z0T190		2
3/4 NPT	19	90	-	0,9	10			10			21YN5Z0T190-YW	2
G 1	25	160	-	0,9	10			10		21YW6Z0T250		2
1 NPT	25	160		0,9	10			10			21YN6Z0T250-YW	2

- ▶ Body material: Brass UNI EN 12165 CW617N
- Armature tube: Stainless Steel AISI 300 series
- Plungers: Stainless Steel AISI 400 series
- Spring: Stainless Steel AISI 300 series
- Media: steam, hot water
- Ambient temperature: See coils catalogue page for its compatibility
- Fluid temperature: -40°C +180°C with PTFE seals
- Design pressure PS: 25 bar
- ▶ Protection class: IP 67
 - (with coil fitted by connector dedicated)
- ▶ Electrical conformity: IEC 335
- ▶ **Switching time:** 20-40 msec

AVAILABLE ON REQUEST

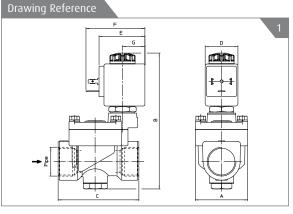
▶ NPT threads

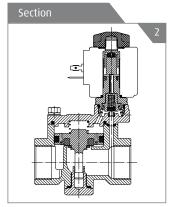


REPAIR KIT Normally Closed KT130KT30-AGP

G 1/2 - 1/2 NPT KTPYW4K0T13 G 3/4 - 3/4 NPT KTPYW5K0T19 G 1 - 1 NPT KTPYW6K0T25

- R452714: Antihumidity kit (up to IP67 protection together with plugs P992126, P992127; P992128 & H coils class)
- ▶ P992087: Timer for automatic switch

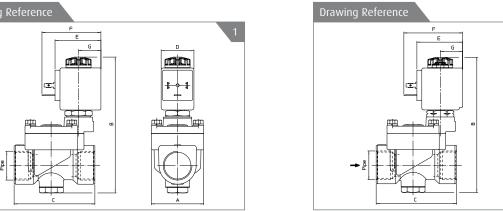




REPAIR KIT Normally Open KT130ZT30-TG

G 1/2 - 1/2 NPT KTPYW4Z0T13 G 3/4 - 3/4 NPT KTPYW5Z0T19 G 1 - 1 NPT KTPYW6Z0T25

- ▶ The solenoid valves can be mounted in any position
- ▶ Holes and threaded connections for panel fixing
- ▶ Other port connections available on request
- Maintenance and instruction sheet available in each solenoid valve box
- ▶ Availability of repair kit and coils as spares



Drawing Reference	
F E	2
G -	D
	TIEM PAIN
F F 1	
1/45-54	
→ a	
c	A

Dimensi	Dimensional Table												
Figure	Pipe	Coil Type	A mm	B mm	C mm	D mm	E mm	F mm	G mm				
	G 1/2 1/2 NPT	В	40	114	65	30	42	54	20,5				
1-2	G 3/4 3/4 NPT	В	48	127	74	30	42	54	20,5				
	G 1 1 NPT	В	62	137	93	30	42	54	20,5				



31A N.C./N.O.









FEATURES

- Threaded exhaust connection
 Reliable performance
 Suitable with triple certification UL, CSA, VDE
 High flow

C€





31A	1	А	V	15		В	D	А	80	024	А	S
		A= N.C.	R= RUBY A= N.C.	10		B = 30mm Ø 13	D EN 175301-803	A= Class F	08= 8W	024 = 24V	A= AC	S= Without Approval
Model valve	Model 1 SUBPLATE A= N.0			15 20	Orefice 10 ⁻¹ mm			V= Class H		110 = 110V-120V	C= DC	Y= UL, CSA, VDE
			V= FKM	25						223 = 220V-230V	D= AC	

PIPE	Ø	Kv	MAX VISCOSITY) cSt (°E)	PRESSURE	PRESSURE MAX MOPD (bar) COIL TYPE						- GAS CODE	NPT CODE	DRAWING
PIPE	(mm)	(I/min)			AC		DC			GAS CODE	NPT CODE	REFERENCE	
					В	U	G	В	U	G			
Normally Closed		(*) 3rd way ext	naust= Ø 2,5 mm										
	1,5(*)	1,4	-	0	15			15			31A1A5R15-AG		1
	1,5(*)	1,4	-	0	15			15			21A1A5R15-AVG		1
	1(*)	0,45	-	0	20			20			31A1AR10		1
	1,5(*)	1,4	-	0	15			15			31A1AR15		1
	1,5(*)	1,4	-	0	15			15			31A1AR15-ORV		1
SUBPLATE	1,5(*)	1,4	-	0	15			15			31A1AR15-VORV		1
MOUNTING	2(*)	2	-	0	10			10			31A1AR20		1
	2,5(*)	3,2	-	0	6			6			31A1AR25		1
	1(*)	0,45	12(2)	0	20			20			31A1AV10		1
	1,5(*)	1,4	12(2)	0	15			15			31A1AV15		1
	2(*)	2	37(5)	0	10			10			31A1AV20		1
	2,5(*)	3,2	53(7)	0	6			6			31A1AV25		1
Normally Open													
SUBPLATE	1,5(*)	1,4	-	0	15			-			31A1FV15-Z		1
MOUNTING	2,5(*)	1,4	-	0	15			-			31A1FV20-Z		1

Suffix	description: 31A1A5R15-AG
-AG	Version with dempness-proof kit
-AVG	Version with dempness-proof kit
-ORV	Sealing system with FKM
-VORV	Armature tube sealing with FKM
-Z	Sub base FKM O-Ring

- ▶ Body material: Brass UNI EN 12165 CW617N
- ▶ Armature tube: Stainless Steel AISI 300 series
- ▶ Plungers: Stainless Steel AISI 400 series
- ▶ **Spring:** Stainless Steel AISI 300 series
- Media: mineral oils, gasoline, diesel, air, inert gases, water, steam, fuel oils, hot water,
- > Ambient temperature: See coils catalogue page for its compatibility
- ▶ Fluid temperature: -10°C +140°C with FKM seals
 - -40°C +180°C with RUBY seals
- Design pressure PS: 40 bar
- ▶ Protection class: IP 65 (complete with electric plug)
- ▶ Electrical conformity: IEC 335
- ▶ Switching time: 20-40 msec

AVAILABLE ON REQUEST

- Also available with low lead brass for food grade
- ▶ The use of rigid sealings usually implies a slight leakage, limited within 2scc/min at the pressure of 1 bar
- Manual override (i.e. 31A2AV15-M)
- ▶ Latching coil (See coil section)

Section

REPAIR KIT Normally Closed KT130AR30-B KT130AR30-A KT130AR30-AV

Normally Open KT130FV30-AZ

RELATED ITEMS

- ▶ P990305: Electrical plug EN 175301-803 Pg9
- ▶ P990306: Electrical plug EN 175301-803 Pg11
- ▶ P992126: Electrical plug EN 175301-803 Pg9 (with OR screw)
- ▶ P992127: Electrical plug EN 175301-803 Pg11 (with OR screw)
- P992128: Electrical plug EN 175301-803 cable 2 wires, 53cm
- R452714: Antihumidity kit (up to IP67 protection together with plugs P992126, P992127; P992128 & H coils class)
- ▶ P992087: Timer for automatic switch

- ▶ The solenoid valves can be mounted in any position
- ▶ Holes and threaded connections for panel fixing
- ▶ Other port connections available on request
- Maintenance and instruction sheet available in each solenoid valve box
- ▶ Availability of repair kit and coils as spares

Drawing Reference	
9 4.3 n.4 holes	1
2 · • • • • • • • • • • • • • • • • • •	
	G 1/8
	<u>₽</u> • 4
32	32

Dimensionale Table									
Figure	Coil Type	D mm	E mm	F mm					
1	В	30	42	54					



31A N.C.







- Threaded exhaust connection
 Reliable performance
 Suitable with triple certification UL, CSA, VDE
 High flow

C€



31A	3	А	R	15	
Model	3= G 1/8 2= G 1/4	A = N C	R= RUBY	10 15	Orefice
valve	2 = G 1/4	A= N.C.	V= FKM	20 25 30	10 ⁻¹ mm

В	D	А	80	024	А	S
		A= Class F		024 = 24V	A= AC	S= Without Approval
B= 30mm Ø 13	D EN 175301-803	V= Class H	08= 8W	110 = 110V-120V	C= DC	Y= UL, CSA, VDE
				223 = 220V-230V	D= AC	

DIDE	Ø KV MAX VISCOSITY		PRESSURE	PRESSURE MAX MOPD (bar) COIL TYPE)	- GAS CODE	NPT CODE	DRAWING	
PIPE	(mm)	(l/min)	cSt (°E)	min	В	AC U	G	В	DC U	G	GAS CODE	NPT CODE	REFERENCE
Normally Closed													
	1(*)	0,45	12(2)	0	20			20			31A3AR10		1
	1,5(*)	1,4	12(2)	0	15			15			31A3AR15		1
	2(*)	2	37(5)	0	10			10			31A3AR20		1
	2,5(*)	3,2	53(7)	0	6			6			31A3AR25		1
	1(*)	0,45	12(2)	0	20			20			31A3AV10		1
	1,5(*)	1,4	12(2)	0	15			15			31A3AV15		1
	2(*)	2	37(5)	0	10			10			31A3AV20		1
G 1/8	2,5(*)	2,5	53(7)	0	6			6			31A3AV25		1
0 1/0	3(*)	4	53(7)	0	5			5			31A3AV30		1
	1,5(*)	1,4	12(2)	0	15			15			31A3CV15		1
	1(*)	0,8	12(2)	0	18			18			31A3GV10-U		1
	1,5(*)	1,4	12(2)	0	10			10			31A3FV15-U		1
	2,5(*)	3,2	53(7)	0	4			4			31A3AV25-U		1
	3(*)	4	53(7)	0	3,5			3,5			31A3EV30-U		1
	1(*)	0,45	12(2)	0	20			20			31A2AR10		1
	1,5(*)	1,4	12(2)	0	15			15			31A2AR15		1
	2(*)	2	37(5)	0	10			10			31A2AR20		1
	2,5(*)	3,2	53(7)	0	6			6			31A2AR25		1
	1(*)	0,45	12(2)	0	20			20			31A2AV10		1
	1,5(*)	1,4	12(2)	0	15			15			31A2AV15		1
	2(*)	2	37(5)	0	10			10			31A2AV20		1
C 1 /4	2,5(*)	3,2	53(7)	0	6			6			31A2AV25		1
G 1/4	3(*)	4	53(7)	0	5			5			31A2AV30		1
	1(*)	0,8	12(2)	0	18			18			31A2GV10-U		1
	1,5(*)	1,4	12(2)	0	10			10			31A2FV15-U		1
	2,5(*)	3,2	53(7)	0	4			4			31A2AV25-U		1
	3(*)	4	53(7)	0	3,5			3,5			31A2EV30-U		1
	2(*)	2	37(5)	0	7			7			31A2FV20-U		1

(*) 3rd way exhaust= 31A-GV Ø 1mm, 31A-FV Ø 1,5mm, 31A-AR Ø 2,5mm, 31A-AV Ø 2,5mm, 31A-EV Ø 2,5mm

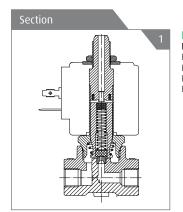
Suffix description: 31A3GV10-U									
-U	Universal valve								
	flow in any valve direcion respecting ressure mantioned in the table above								

- ▶ Body material: Brass UNI EN 12165 CW617N
- ▶ Armature tube: Stainless Steel AISI 300 series
- ▶ Plungers: Stainless Steel AISI 400 series
- > Spring: Stainless Steel AISI 300 series
- Media: mineral oils, gasoline, diesel, air, inert gases, water, steam, fuel oils, hot water,
- > Ambient temperature: See coils catalogue page for its compatibility
- ▶ Fluid temperature: -10°C +140°C with FKM seals
 - -40°C +180°C with RUBY seals
- Design pressure PS: 40 bar
- ▶ Protection class: IP 65 (complete with electric plug)
- ▶ Electrical conformity: IEC 335
- ▶ Switching time: 20-40 msec

AVAILABLE ON REQUEST

- Also available with low lead brass for food grade
- ▶ The use of rigid sealings usually implies a slight leakage, limited within 2scc/min at the pressure of 1 bar.
- ▶ Explosion proof coil Ex nA (see Atex section)
- Latching coil (See coil section)





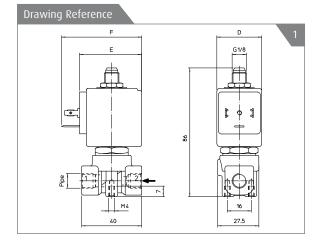
REPAIR KIT Normally Closed KT130AR30-A KT130AR30-AR KT130CU30-A KT130AU30-A

RELATED ITEMS

- ▶ P990305: Electrical plug EN 175301-803 Pg9
- ▶ P990306: Electrical plug EN 175301-803 Pg11
- ▶ P992126: Electrical plug EN 175301-803 Pg9 (with OR screw)
- ▶ P992127: Electrical plug EN 175301-803 Pg11 (with OR screw)
- P992128: Electrical plug EN 175301-803 cable 2 wires, 53cm
- ▶ R452714: Antihumidity kit (up to IP67 protection together with plugs P992126, P992127; P992128 & H coils class)
- ▶ P992087: Timer for automatic switch

INSTALLATION

- ▶ The solenoid valves can be mounted in any position
- ▶ Holes and threaded connections for panel fixing
- ▶ Other port connections available on request
- Maintenance and instruction sheet available in each solenoid valve box
- ▶ Availability of repair kit and coils as spares



Dimensionale Table

Figure	Coil Type	D mm	E mm	F mm
1	В	30	42	54



31JN N.C.











FEATURES

- Compact designUp to 15 barCoil adjustable in any position without tools

C€

31JN	1	W0	٧	12	
Model	1 = G 1/8	W0= N.C.	V= FKM	12	Orefice
valve			B= NBR	15 23	10 ⁻¹ mm

L	В	А	05	024	С	S
		A= Class F	05= 5W	024 = 24V	C= DC	S= Without Approval
L 22 mm	В	V= Class H		110 = 110V-120V	A= AC	
5W	EN 175301-803			220 = 220V	B= AC	U= UL
				230 = 230V	A= AC	V= VDE

PIPE	Ø (mm)	Kv (I/min)	MAX VISCOSITY cSt (°E)	PRESSURE min	PRESSURE MAX MOPD (bar) COIL TYPE AC DC		GAS CODE	NPT CODE	DRAWING REFERENCE		
SUBPLATE MOUNTUNG	1,2(*)	1	12(2)	0	15		- -		4628Y0V12	N/A	1
(*) 3rd way exhaust= Ø 1,	2mm										
SUBPLATE MOUNTUNG	1,2(*)	1	12(2)	0	15		15		31JKBW0V12	N/A	1
	1,2(*)	1	12(2)		15		15		31JN1W0V12		1
C 1 /0	1,2(*)	0,6	12(2)		15		15		31JR1W0B12-M		1
G 1/8	1,5(*)	1	12(2)		10		10		31JR1W0B15-M		1
	2,3(*)	2,3	37(5)		5		5		31JN1W0V23		1
(*) 3rd way exhaust= Ø 1,	5mm										
	1,2(*)	1	12(2)		15		-		31JN1XPV12		2
G 1/8	1,2(*)	1	12(2)	0	15		15		31JN1XPV12-S	N/A	2
	2,3(*)	2,3	37(5)		-		-		31JN1XPV23		2

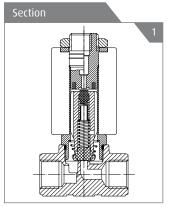
^{(*) 3}rd way exhaust= Ø 1,7mm

- ▶ Body material: Brass
- ▶ Armature tube: Stainless Steel AISI 300 series
- ▶ Plungers: Stainless Steel AISI 400 series
- ▶ **Spring:** Stainless Steel AISI 300 series
- Media: low pressure steam, mineral oils, gasoline, diesel, fuel oils, water
- ▶ Ambient temperature: See coils catalogue page for its compatibility
- ► Fluid temperature: -10°C +90°C with NBR seals
 - -10°C +140°C with FKM seals
- Design pressure PS: 40 bar
- ▶ Protection class: IP 65 (complete with electric plug)
- ▶ Electrical conformity: IEC 335
- ▶ Switching time: 20-40 msec

AVAILABLE ON REQUEST

- Manual override (i.e. 21A3KV15-M)
- ▶ NSF approved version
- Also available with low lead brass for food grade
- ▶ Explosion proof coil Ex nA (see Atex section)

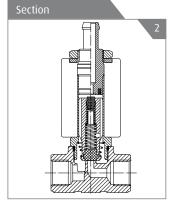




REPAIR KIT KT100W0V25-FJ

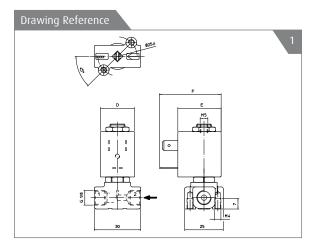
RELATED ITEMS

- P990305: Electrical plug EN 175301-803 Pg9
- ▶ P990306: Electrical plug EN 175301-803 Pg11
- ▶ P992126: Electrical plug EN 175301-803 Pg9 (with OR screw)
- ▶ P992127: Electrical plug EN 175301-803 Pg11 (with OR screw)
- ▶ P992128: Electrical plug EN 175301-803 cable 2 wires, 53cm
- R452714: Antihumidity kit (up to IP67 protection together with plugs P992126, P992127; P992128 & H coils class)
- ▶ P992087: Timer for automatic switch

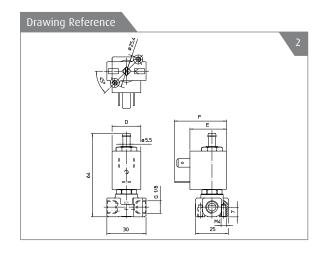


REPAIR KIT KT100XPV25-IJ

- ▶ The solenoid valves can be mounted in any position
- ▶ Holes and threaded connections for panel fixing
- ▶ Other port connections available on request
- Maintenance and instruction sheet available in each solenoid valve box
- ▶ Availability of repair kit and coils as spares



Dimensionale Table										
Figure	Coil Type	D mm	E mm	F mm						
1-2	L	22	27,5	39,5						





31L N.C.









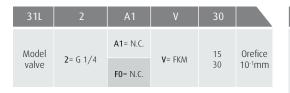




FEATURES

- Ideal for pilotingHigh flow rateQuick response

C€



В	D	А	08	024	Α	5	
				024 = 24V			
B = 30mm Ø 13	D EN 175301-803	A= Class F	08= 8W	110 = 110V-120V	C= DC	S= Without Approval	
				223 = 220V-230V			

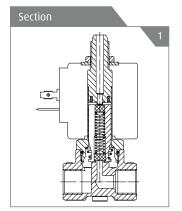
PIPE	Ø	Kv	MAX VISCOSITY	PRESSURE		PRESSU	JRE MA COIL		D (bar)	GAS CODE	NPT CODE	DRAWING
11111	(mm) (l/mi	(I/min)	(I/min) cSt (°E)	min	AC		DC		4/13 6001	NI I CODE	REFERENCE	
								В				
Normally Closed		(*) 3rd way exl	haust= Ø 2,5 mm									
G 1/4	3(*)	4	53(7)	0	5			5		31L2A1V30		1
Normally Closed		(*) 3rd way exl	haust= Ø 1,5 mm									
G 1/4	15(*)	1,4	12(2)	0	10			10		31L2F0V15-U		2

- ▶ Body material: Stainless Steel 316 AISI series
- Armature tube: Stainless Steel 300 AISI series
- ▶ Plungers: Stainless Steel AISI 400 series
- ▶ **Spring:** Stainless Steel AISI 300 series
- Media: mineral oils, gasoline, diesel, fuel oils
- ▶ Ambient temperature: See coils catalogue page for its compatibility
- ▶ Fluid temperature: -10°C +140°C with FKM seals
- Design pressure PS: 40 bar
- ▶ Protection class: IP 65 (complete with electric plug)
- ▶ Electrical conformity: IEC 335
- ▶ Switching time: 20-40 msec

AVAILABLE ON REQUEST

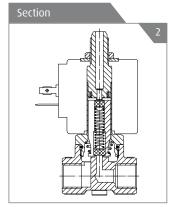
▶ Explosion proof coil Ex nA (see Atex section)



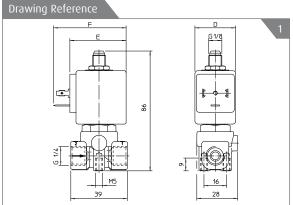


RELATED ITEMS

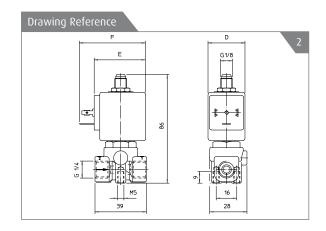
- ▶ P990305: Electrical plug EN 175301-803 Pg9
- ▶ P990306: Electrical plug EN 175301-803 Pg11
- ▶ P992126: Electrical plug EN 175301-803 Pg9 (with OR screw)
- ▶ P992127: Electrical plug EN 175301-803 Pg11 (with OR screw)
- ▶ P992128: Electrical plug EN 175301-803 cable 2 wires, 53cm
- R452714: Antihumidity kit (up to IP67 protection together with plugs P992126, P992127; P992128 & H coils class)
- ▶ P992087: Timer for automatic switch



- ▶ The solenoid valves can be mounted in any position
- ▶ Holes and threaded connections for panel fixing
- Other port connections available on request
- Maintenance and instruction sheet available in each solenoid valve box
- ▶ Availability of repair kit and coils as spares



	Dimensionale Table							
Dimensio	onale Table							
Figure	Coil Type	D mm	E mm	F mm				
1-2	В	30	42	54				





512 N.C.









FEATURES

- Suitable for rotating actuators controlProven constructionLong-life sealing system

CE





5126	2	0W0	В	12	
Model valve	2 = G 1/4	0W0= N.C.	B= NBR	12	Orefice 10 ⁻¹ mm

L	В	А	05	024	А	5
L = 22mm Ø 10		A= Class F	05 = 5W	024= 24V	A= AC	S= Without Approval
	D EN 175301-803		04= 4W	230 = 230V		V= VDE
		V= Class H		220 = 220V		V= UL

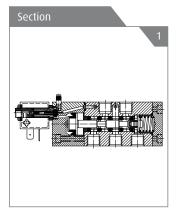
					PRESSURE MAX MOPD (bar)								
PIPE		Kv	MAX VISCOSITY cSt (°E)	PRESSURE min	COIL TYPE						GAS CODE	NPT CODE	DRAWING
PIPE	(mm)	(l/min)			AC			DC		GAS CODE		INPT CODE	REFERENCE
					L			L					
1 /4	6	6,5	-	1,3	10			10			515620W0B12-2	515620W0B12-N2	1
1/4	6	6,5	-	1,3	10			10					2

- ▶ Body material: Aluminium
- ▶ Armature tube: Stainless steel AISI 300 series
- ▶ Plungers: Stainless Steel AISI 400 series
- ▶ **Spring:** Stainless Steel AISI 300 series
- Media: lubricated air
- ▶ Ambient temperature: See coils catalogue page for its compatibility
- ▶ Fluid temperature: -10°C +90°C with NBR seals
- Design pressure PS: 10 bar
- ▶ Protection class: IP 65 (complete with electric plug)
- Electrical conformity: IEC 335Switching time: 20-40 msec

AVAILABLE ON REQUEST

▶ Explosion proof coil Ex nA (see Atex section)

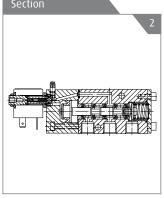




REPAIR KIT KT100W0B25-FJ

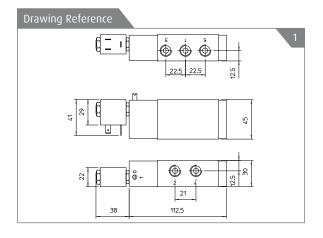
RELATED ITEMS

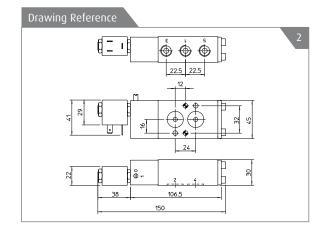
- ▶ P990305: Electrical plug EN 175301-803 Pg9
- ▶ P990306: Electrical plug EN 175301-803 Pg11
- ▶ P992126: Electrical plug EN 175301-803 Pg9 (with OR screw)
- ▶ P992127: Electrical plug EN 175301-803 Pg11 (with OR screw)
- P992128: Electrical plug EN 175301-803 cable 2 wires, 53cm
- R452714: Antihumidity kit (up to IP67 protection together with plugs P992126, P992127; P992128 & H coils class)
- ▶ P992087: Timer for automatic switch



REPAIR KIT KT100W0B25-FJ

- ▶ The solenoid valves can be mounted in any position
- ▶ Holes and threaded connections for panel fixing
- Other port connections available on request
- Maintenance and instruction sheet available in each solenoid valve box
- ▶ Availability of repair kit and coils as spares







4743 N.C.





FEATURES

- CarwashMountable in any position



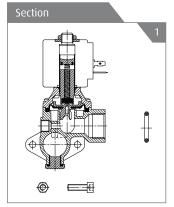


4743	K0	V	120	
Model valve	2 = G 1/4	0W0= N.C.	B= NBR	Orefice 10 ⁻¹ mm

В	D	А	08	024	A	5
B = 30mm Ø 13	D	A= Class F	08= 8W	024 = 24V	C= DC	S= Without Approval
U = 36mm Ø 13	EN 175301-803	V= Class H	12 = 12W	230 = 230V	D= AC	

						PRESSURE MAX MOPD (bar)								
PIPE		Kv	MAX VISCOSITY	PRESSURE	COIL TYPE						GAS CODE	NPT CODE	DRAWING	
	FIFE	(mm)	(l/min)	cSt (°E)	min	AC			DC			UAS CODE	INFT CODE	REFERENCE
						В	U		В	U				
	FLANGE	12	40	12(2)	0,1	16	-		10	16		4743K0V120		1

- ▶ Body material: Brass UNI EN 12165 CW617N
- ▶ Armature tube: Stainless Steel AISI 300 series
- ▶ Plungers: Stainless Steel AISI 400 series
- ▶ **Spring:** Stainless Steel AISI 300 series
- Media: water
- Ambient temperature: See coils catalogue page for its compatibility
- ▶ Fluid temperature: -10°C +140°C with FKM seals
- Design pressure PS: 20 bar
- Protection class: IP65 (complete with electric plug)
- ▶ Electrical conformity: IEC 335
- > Switching time: 20 40 msec (depending on pressure conditions)



REPAIR KIT KTG0H7KV12

RELATED ITEMS

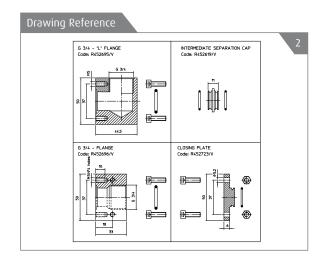
- ▶ P990305: Electrical plug EN 175301-803 Pg9
- ▶ P990306: Electrical plug EN 175301-803 Pg11
- ▶ P992126: Electrical plug EN 175301-803 Pg9 (with OR screw)
- ▶ P992127: Electrical plug EN 175301-803 Pg11 (with OR screw)
- ▶ P992128: Electrical plug EN 175301-803 cable 2 wires, 53cm
- ▶ P992087: Timer for automatic switch

Drawing Reference

Dimensionale Table

Figure	Coil Type	D mm	E mm	F mm
1-7	В	30	42	54
1-2	U	36	48	60

- ▶ The solenoid valves can be mounted in any position
- ▶ Holes and threaded connections for panel fixing
- ▶ Other port connections available on request
- Maintenance and instruction sheet available in each solenoid valve box
- ▶ Availability of repair kit and coils as spares







TECHNOPOLYMER SOLENOID VALVES

▶ 21D-K N.C. page 68-69
 ▶ 21JP N.C. " 70-71
 ▶ 21SBG N.C. " 72-73
 ▶ 31JP N.C. " 74-75



21D-K N.C.



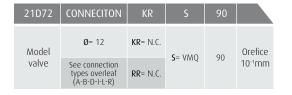


- Totally separation valveReliable solution for hot water application
- Flow regulation for hot water control90° shape for compact installation

- Directly connected to the boilerReliable switch on-off time for accurate dispensing
- Modular system for multiple valve manifold
- NSF approved version







В	D	А	08	024	А	5
				024 = 24V	A= AC	
B = 30mm Ø 13	D EN 175301-803	A= Class F	08= 8W	110 = 110V	C= DC	S= Without Approval
				223 = 220V-230V		
1	С	А	12	024	E	5
1	С	А	12	024 024= 24V	E= 50%	S
I= 28mm 12 W	C = 2 faston	A = Class F	12 12= 12W			S = Without Approval

	Ø	Ø	Kv	MAX VISCOSITY	PRESSURE	PRESSURE MAX MOPD (bar) COIL TYPE								DRAWING
PIPE	(mm)	(l/min)	cSt (°E)	min		AC			DC		GAS CODE	NPT CODE	REFERENCE	
					В	1		В	-1					
Ø 12	9	*	-	0	0,3			0,3			21D72KRS90-L		1	
Ø 12	9	*	-	0	0,3			0,3			21D72KRS90-M		1	
Ø 11	9	*	-	0	0,3			0,3			21D72KRS90-R		1	
Ø 12	9	*	-	0		0,3			0,3		21D72RRS90-L		2	
Ø 12	9	*	-	0		0,3			0,3		21D72RRS90-M		2	
Ø 11	9	÷	-	0		0,3			0,3		21D72RRS90-R		2	
	9	*	-	0	0,3			0,3			21K72KRS90-000		3	
	9	*	-	0	0,3			0,3			22K72KRS90-000		3	
	9	*	-	0	0,3			0,3			23K72KRS90-000	N/A	3	
	9	÷	-	0	0,3			0,3			24K72KRS90-000	IV/ A	3	
See connection	9	*	-	0	0,3			0,3			25K72KRS90-000		3	
types	9	÷	-	0	0,3	0,3		0,3	0,3		26K72KRS90-000		3	
overleaf	9	*	-	0		0,3			0,3		21K72RRS90-000		2	
(A-B-D- I-L-R)	9	*	-	0		0,3			0,3		22K72RRS90-000		2	
,	9	*	-	0		0,3			0,3		23K72RRS90-000		2	
	9	*	-	0		0,3			0,3		24K72RRS90-000		2	
	9	*	-	0		0,3			0,3		25K72RRS90-000		2	
	9	*	-	0		0,3			0,3		26K72RRS90-000		2	

^{*} FLOW RATE WITH HEAD OF 80mm= 2,5 I/min.

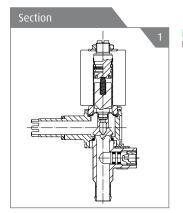
Total Separation Solenoid Salve 2/2 Way With Flow Regulation Direct Acting Dispenser Valve

TECHNICAL SPECIFICATION

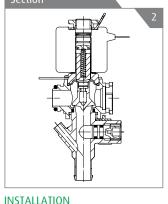
- ▶ Body material: PSU (Polysulphone)
- Armature tube: Brass UNI EN 12164 CW614N
- Plungers: Stainless Steel AISI 400 series
- **Spring:** Stainless Steel AISI 300 series
- Media: water
- Ambient temperature: See coils catalogue page for its compatibility
- ▶ Fluid temperature: +2°C +100°C with VMQ seals

AVAILABLE ON REQUEST

Manifold: (Please see key code for complete part numbering and for manifold construction)

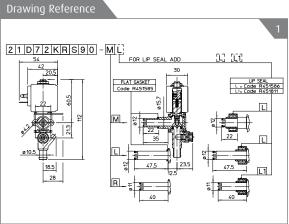


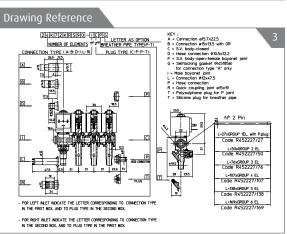
REPAIR KIT KR130KRS90-L3

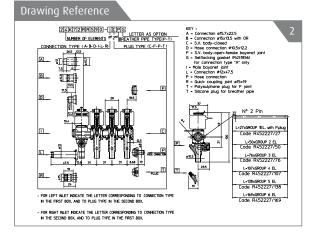


REPAIR KIT KR100RRS90-L2

- Maintenance and instruction sheet available in each solenoid valve box
- The valves can be connected directly on the boiler









21JP N.C.















FEATURES

- Food gradeHigh performance technopolymerCompact design

CE NSE

21JP	1	RR	٧	12	
Model	1 = G 1/8	RR= N.C.	V= FKM	12	Orefice
valve	A = G 1/8	R1= N.C.		23	10 ⁻¹ mm

L	В	А	05	024	А	5
		A= Class F	05 = 5W	024 = 24V	A= AC	S= Without Approval
L 22 mm	В	V= Class H	2X= 2,5W		C= DC	Y= UL, CSA, VDE
2,5 - 4W- 5W	EN 175301-803			110 = 110V		X= UL, VDE
				230 = 230V		U= UL

				PRESSURE MAX MOPD (bar)									
PIPE		Kv	MAX VISCOSITY	PRESSURE	COIL TYPE						GAS CODE	NPT CODE	DRAWING
FIFE	(mm)	(I/min)	cSt (°E)	min		AC			DC		GAS CODE	NPT CODE	REFERENCE
					2,5W	5W		2,5W	5W				
G 1/8 male	1,2	1	12(2)	0	15	15		3,5	12		21JPARRV12		1
G 1/8 male	1,2	1	12(2)	0	15	15		3,5	12		21JPAR1V12-TO(*)		1
G 1/8 male	2,3	2,1	37(5)	0	6	15		-	8		21JPARRV23		1
G 1/8 male	2,3	2,1	37(5)	0	6	15		-	8		21JPAR1V23-TO(*)	(Available on request)	1
G 1/8	1,2	1	12(2)	0	15	15		3,5	12		21JP1RRV12	(Available of request)	2
G 1/8	1,2	1	12(2)	0	15	15		3,5	12		21JP1R1V12-TO(*)		2
G 1/8	2,3	2,1	37(5)	0	6	15		-	8		21JP1RRV23		2
G 1/8	2,3	2,1	37(5)	0	6	15		-	8		21JP1R1V23-TO(*)		2

(*) NSF Certified

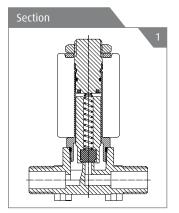
- Max torque for fittings and nut assembly 2Nm
 In case glue is used to seal the fittings, verify the compatibility with body material (PPS)
 For applications, with steam, please consult our Technical Service

- ▶ Body material: PPS
- Armature tube (for JPARR JP1RR) Brass UNI EN 12165 CW617N
- ▶ Armature tube (JPAR1 JP1R1) Stainless Steel AISI 300 series
- ▶ Plungers: Stainless Steel AISI 400 series
- ▶ **Spring**: Stainless Steel AISI 300 series
- Media: air, water, inert gases, steam
- ▶ Ambient temperature: See coils catalogue page for its compatibility
- ▶ Fluid temperature: -10°C +140°C with FKM seals
- ▶ **Design pressure PS**: 16 bar
- ▶ Protection class: IP65 (complete with electric plug)
- Electrical conformity: IEC 335
- > Switching time: 20 40 msec (depending on pressure conditions)

AVAILABLE ON REQUEST

▶ NSF approved version

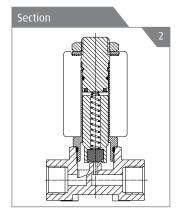




REPAIR KIT Coil L 2,5W-5W (see coil list)

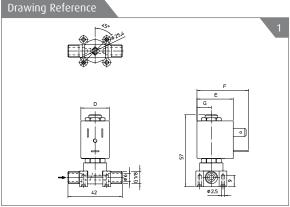
RELATED ITEMS

▶ P990307: Electrical plug EN 175301-803 Pg9



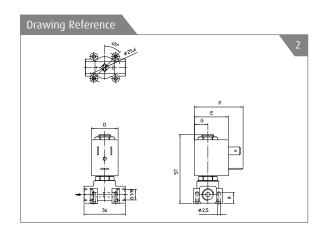
REPAIR KIT Coil L 2,5W-5W (see coil list)

- ▶ The solenoid valves can be mounted in any position
- ▶ Holes and threaded connections for panel fixing
- ▶ Other port connections available on request
- Maintenance and instruction sheet available in each solenoid valve box



Drawing Reference	
\$50 pt	1
D	

Dimensionale Table													
Figure	Coil Type	D mm	E mm	F mm	G mm								
1-2	L	22	27,5	39,5	11								



21SBG N.C.















FEATURES

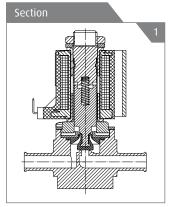
- NSF approved versionTotally separation ValveFluid untouched when flowing

CE NSF.



					PRESSURE MAX MOPD (bar)							NPT CODE	DRAWING
PIPE	Ø	Kv	MAX VISCOSITY	PRESSURE min	COIL			. TYPE			GAS CODE		
PIPE	(mm)	(I/min)	cSt (°E)			AC			DC		GAS CODE	NPT CODE	REFERENCE
					Н			Н					
Ø 7	3	4	-	0	-			1			21SBGS4E30_H036		1
Ø 7	5	6	-	0	-			1			21SBGS4E50_H036		1

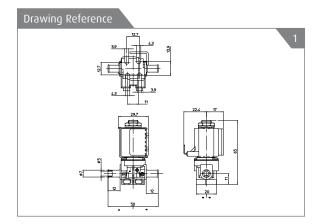
- ▶ Body material: PEI
- Armature tube: Brass UNI EN 12164 CW614N
- ▶ Plungers: Stainless Steel AISI 400 serie
- ▶ **Spring:** Stainless Steel AISI 300 serie
- ▶ Media: water
- ▶ Up to 1 bar
- ▶ Ambient temperature: See coils catalogue page for its compatibility
- ▶ Fluid temperature: 0°C +95°C with EPDM seals
- ▶ Electrical conformity: IEC 335



REPAIR KIT Coil P/N RHLR7X024CS

RELATED ITEMS

- ▶ The solenoid valves can be mounted in any position
- ▶ Holes and threaded connections for panel fixing
- Other port connections available on request
- ▶ Maintenance and instruction sheet available in each solenoid valve box
- $\,\blacktriangleright\,$ Availability of repair kit and coils as spares.



31JP N.C.





- Light and reliableUp to 15 bar
- ▶ Proven actuation system



	CE	(NSF.)
		10.50
		1101.
		(
-		

31JP	1	ХР	٧	12	
Model valve	1 = G 1/8	XP= N.C.	V= FKM	12	Orefice
			B= NBR	23	10 ⁻¹ mm

L	В	А	05	024	С	S
L 22 mm 5W	D EN 175301-803	A= Class F	05 = 5W	024 = 24V	C= DC	S= Without Approval
		V= Class H	2X= 2,5W	110 = 110V-120V	A= AC	
				220 = 220V	B= AC	U= UL

PIPE	Ø	Kv	MAX VISCOSITY	PRESSURE		PRESSL	JRE MA COIL		D (bar))	GAS CODE	NPT CODE	DRAWING
PIPE	(mm)	(I/min)	cSt (°E)	min		AC			DC		GAS CODE		REFERENCE
					L			L					
G 1/8 male	1,2(*)	0,75	12(2)	0	15			-			31JPAXPV12-T0(**)		1
G 1/8 male	1,2(*)	0,75	12(2)	0	15			-			31JPAXRV12		1
G 1/8 male	2,3(*)	2,1	37(5)	0	15			-			31JPAXPV23-T0(**)		1
G 1/8 male	2,3(*)	2,1	37(5)	0	15			-			31JPAXRV23	(Available on request)	1
G 1/8 female	1,2(*)	0,75	12(2)	0	15			-			31JP1XPV12-TO(**)	(Available on request)	2
G 1/8 female	1,2(*)	0,75	12(2)	0	15			-			31JP1XRV12		2
G 1/8 female	2,3(*)	2,1	37(5)	0	15			-			31JP1XPV23-TO(**)		2
G 1/8	2,3(*)	2,1	37(5)	0	15			-			31JP1XRV23		2

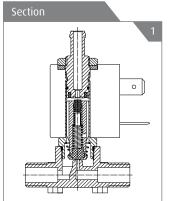
^{(*) 3}rd way exhaust= Ø 1,7mm (**) NSF Certified

- Max torque for fittings and nut assembly 2Nm
 In case glue is used to seal the fittings, verify the compatibility with body material (PPS)
 For applications, with steam, please consult our Technical Service

- ▶ Body material: PPS
- Armature tube (fig.1)Stainless Steel AISI 300 series
- ▶ Armature tube (fig.2) Brass UNI EN 12165 CW617N
- ▶ Plungers: Stainless Steel AISI 400 serie
- ▶ Spring: Stainless Steel AISI 300 serie
- Media: air, water, inert gases, steam
- ▶ Ambient temperature: See coils catalogue page for its compatibility
- ▶ Fluid temperature: -10°C + 140°C with FKM seals
- Design pressure PS: 16 bar
- Protection class: IP 65 (complete with electric plug)
- ▶ Electrical conformity: IEC 335
- ▶ Switching time: 20-40 msec

AVAILABLE ON REQUEST

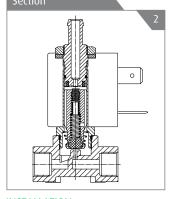
▶ NSF approved version



REPAIR KIT

For spare parts please consult our technical department

Coil P/N RLBA



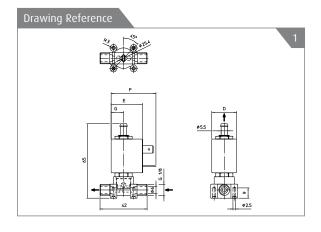
REPAIR KIT

For spare parts please consult our technical department

Coil P/N RLBA

RELATED ITEMS

▶ P990307: Electrical plug EN 175301-803 Pg9

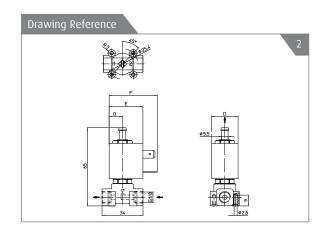


Dimensionale Table

Figure	Coil Type	D mm	E mm	F mm	G mm	
1-2	L	22	27,5	39,5	11	

INSTALLATION

- ▶ The solenoid valves can be mounted in any position
- ▶ Holes and threaded connections for panel fixing
- ▶ Other port connections available on request
- Maintenance and instruction sheet available in each solenoid valve box







PINCH SOLENOID VALVES

▶ 21Z N.C./N.O.

page 78-79

▶ 31Z N.C.

" 80-81



21Z N.C./N.O.





FEATURES

- Totally separate ValveUp to 36 Kg closing forceFluid untouched when flowed

CE



В	D	V	08	024	С	V
B = 30mm Ø 13	D EN 175301-803	V= Class F	08= 8W	024 = 24V	C= DC	V= VDE
G	D	А	12	024	С	S
G = 52mm Ø 13	D EN 175301-803	A= Class F	12 = 12W	024 = 24V	C= DC	S= Without Approval
М	А	A	04	024	С	5
M= 16mm Ø 7	A EN 175301-803	A= Class F	04 04= 4W	024 024= 24V	C = DC	S = Without Approval
M = 16mm	A					

	TUBINGS			PINCHING			WER				
Ø int.	Ø ext.	WALL	GAS CODE	FORCE		ABSORPTION [watt]		PRESSURE	WEIGHT	DRAWING	
(mm)	(mm)	THICKNESS		(g)		COIL T	YPE DC		MAX	(g)	REFERENCE
		(mm)			M	В	U				
Normally Clo	osed		(*) To use in AC, a rectifi	er bridge will be supp	olied with the	DC coil					
0,76	1,65	0,4	21Z16M1S05	180	4					50	1
1,57	3,18	0,8	21Z16M1S20	240	4					50	1
1,98	3,18	0,6	21Z16M1S25	210	4					50	1
3,5	6	-	21Z25B1S65	650		8				220	2
7	12	2,5	21Z30G2S99	2600				14	1	540	2
7	12	2,5	21Z30G2S99-5	2600				14	1(*)	540	2
Normally Op	en		(*) With tubings hardnes	s 70 ± 3 shore A							
0,76	1,65	0,4	21Z16M2S05	250	4					50	1
1,57	3,18	0,8	21Z16M2S20	900	4					50	1
1,98	3,18	0,6	21Z16M2S25	400	4					50	1
3,5	6	-	21Z25B2S65	1500		8				220	2
3,5	6	-	21Z25B2S65	2100			12(*)			220	2

- ▶ Body material: Anodized Aluminium
- Armature tube: Armature tube: Brass UNI EN 12164 CW614N

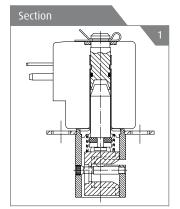
+ Nickel Plated (for 21Z16)

Brass - UNI EN 12164 CW614N (for 21Z25)

- ▶ Welded Armature tube: Brass UNI EN 12164 CW614
 - + Stainless Steel AISI 300 series
- ▶ Plungers: Stainless Steel AISI 400 series
- Spring: Stainless Steel AISI 300 series
- ▶ Pinching device POM C= Acetalic resin
- ▶ Ambient temperature: -10°C +40°C
- ▶ Protection class: IP65 (complete with electric plug)
- ▶ Electrical conformity: IEC 335 ▶ Switching time: 20-40 msec

AVAILABLE ON REQUEST

- For different tube diameter or haedress, please consult our technical department
- Explosion proof coil Ex nA (see Atex section)



REPAIR KIT

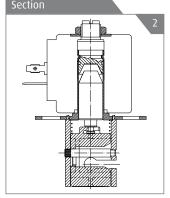
For spare parts please consult our technical department

Coil P/N

For 21Z16: RMAA0424CS For other: Coil B type (08W) Coil G type (14W) Coil U type (12W)

RELATED ITEMS

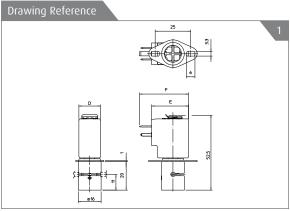
- ▶ P990305: Electrical plug EN 175301-803 Pg9
- ▶ P990306: Electrical plug EN 175301-803 Pg11
- ▶ P992126: Electrical plug EN 175301-803 Pg9 (with OR screw)
- ▶ P992127: Electrical plug EN 175301-803 Pg11 (with OR screw)
- P992128: Electrical plug EN 175301-803 cable 2 wires, 53cm
- R452714: Antihumidity kit (up to IP67 protection together with plugs P992126, P992127; P992128 & H coils class)
- ▶ P992087: Timer for automatic switch



REPAIR KIT For spare parts please consult our technical department

INSTALLATION

- \blacktriangleright This S.V. is suitable for soft silicon tubings with hardness 55 \pm 3 shore A.
- ▶ Tubing are not included in our supply.
- ▶ When used with less that 2,2mm external diameter pipes, a pipe holder should be mounted (for 21Z1).
- ▶ The solenoid valves can be mounted in any position
- Maintenance and instruction sheet available in each solenoid valve box

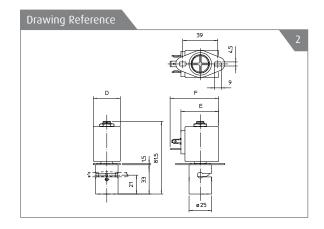


Drawing Reference	
	25
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	E E S 225

	<u> </u>	
Figure	Coil Type	Dm
1	M	16

Dimensionale Table

Figure	Coil Type	D mm	E mm	F mm
1	M	16	26	34,5
	В	30	42	54
2	G	52	55	67
	U	36	48	60





31Z N.C.









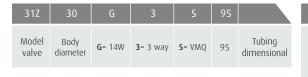




FEATURES

- Totally separate valve
 Up to 36 Kg closing force
 Fluid untouched when flowed
 Bidirectional flow control
 Suitable for food pharmaceutical and medical application

CE



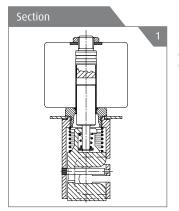
G	D	Н	14	024	С	S
G = 52mm Ø 13	D EN 175301-803	H= Class H	14 = 14W	024 = 24V	C= DC	S= Without Approval
			14 = 14W	012 = 12V		
		V= Class H				V= VDE

		TUBINGS		PINCHING		POWER						
ı	Ø int.	Ø ext.	WALL	GAS CODE	PINCHING ABSORPTION [watt]		PRESSURE	WEIGHT	DRAWING			
	(mm)	(mm)	THỊCKNĘSS	4/13 6002	(g)		COIL TYPE DC		MAX	(g)	REFERENCE	
			(mm)		(3)	G						
	6,4	9	-	31Z30G3S95	1250	14				1	500	1

- ▶ Body material: Anodized Aluminium
- Armature tube: Brass UNI EN 12164 CW614N
 - + Stainless Steel AISI 300 series
- ▶ Plungers: Stainless Steel AISI 400 series
- ▶ **Spring:** Stainless Steel AISI 300 series
- ▶ Pinching device POM C= Acetalic resin
- ▶ Ambient temperature: -10°C +40°C
- Protection class: IP65 (complete with electric plug)
- Electrical conformity: IEC 335 ▶ Switching time: 20-40 msec

AVAILABLE ON REQUEST

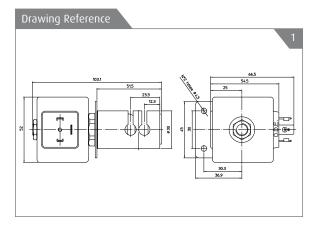
- For different tube diameter or haedress, please consult our technical department
- ▶ Explosion proof coil Ex nA (see Atex section)



REPAIR KIT For spare parts please consult our technical department

RELATED ITEMS

- ▶ P990305: Electrical plug EN 175301-803 Pg9
- P990306: Electrical plug EN 175301-803 Pg11
 P992126: Electrical plug EN 175301-803 Pg9 (with OR screw)
- ▶ P992127: Electrical plug EN 175301-803 Pg11 (with OR screw)
- ▶ P992128: Electrical plug EN 175301-803 cable 2 wires, 53cm
- R452714: Antihumidity kit (up to IP67 protection together with plugs P992126, P992127; P992128 & H coils class)
- ▶ P992087: Timer for automatic switch



INSTALLATION

- \blacktriangleright This S.V. is suitable for soft silicon tubings with hardness 55 \pm 3 shore A.
- Tubing are not included in our supply.
- ▶ When used with less that 2,2mm external diameter pipes, a pipe holder should be mounted (for 21Z1).
- $\,\blacktriangleright\,$ The solenoid valves can be mounted in any position
- Maintenance and instruction sheet available in each solenoid valve box





EXPLOSION PROOF SOLENOID VALVES ATEX

▶ 21A Ex d & Ex m N.C./N.O.	page	e 84-85
▶ 21IH Ex d N.C.	"	86-87
▶ 21L Ex m Ex d N.C.	"	88-89
▶ 21W Ex m, Ex d N.C/N.O.	"	90-91
▶ 21X Ex m, Ex d N.C.	"	92-93
▶ 31A2 Ex m, Ex d N.C.	"	94-95
▶ 31L Ex m, Ex d N.C.	"	96-97



21A Ex d & Ex m N.C./N.O.





- Wide range of application high flow valves for liquids, gaseousHazardous environment
- Small poppet valve for tight shutoff
 Mountable in any position
 Dedicated to CPT Market







21A	2	QD	٧	15	
	2 = G 1/4	QD= N.C. Ex m	V= FKM	15 20	
Model valve	3 = G 3/8 KI = N.C. Ex d		F= H-NBR	25 30	Orefice 10 ⁻¹ mm
		ZI = N.0. Ex d		45 55	

В	D	A	08	012	С	5
	D EN 175301-803	A= Class F	08= 8W	012 = 12V	C= DC	
				024 = 24V	D= AC	
B= 30mm Ø 13				048= 48V		S= Without Approval(*)
כו ש				110 = 110V		
				223 = 220V-230V		
(*) Ex d protection	class when assembled	with Ex housing	ıa			

T	N	А	4X	024	D	4
T = 36mm Ø 14,5	N 3 cables cm 300	A= Class F	4X= 7,2V	024 = 24V		4 = Ex m T4
			5X= 9,13V	110 = 110V	D= AC	
			05 = 7,7V-9,2V	224 = 220V-240V		
			10 = 10,1W		C= DC	

			MAX VISCOSITY	PRESSURE	PRESSURE MAX MOPD (bar))			
PIPE		Kv			COIL TYPE						GAS CODE	NOT CODE	FLOW
PIPE	(mm)	(l/min)	cSt (°E)	min		AC			DC		GAS CODE	NPT CODE	CURVE
					В	T		В	T				
Normally Closed Ex i	m												
	1,5	1,4	12(2)		-	16		-	16		21A3QDV15		1
	2	2	37(5)		-	16		-	16		21A3QDV20	(Part numbering example	1
G 1/8	2,5	3,2	53(7)	0	-	14		-	9		21A3QDV25	add "N" at the 4th digit	1
	3	4	53(7)		-	10		-	6		21A3QDV30	21AN1Q)	1
	4,5	6,5	53(7)		-	5		-	2		21A3QDV45		1
	1,5	1,4	12(2)		-	16		-	16		21A2QDV15		1
	2	2	37(5)		-	16		-	16		21A2QDV20		1
64/4	2,5	3,2	53(7)	0	-	14		-	9		21A2QDV25	(Part numbering example	1
G 1/4	3	4	53(7)	0	-	10		-	6		21A2QDV30	add "N" at the 4th digit 21AN2Q)	1
	4,5	6,5	53(7)		-	5		-	2		21A2QDV45	21/11/29/	1
	5,5	9	53(7)		-	3		-	1		21A2QDV55		1
Normally Closed Ex	1												
	1,5	1,4	12(2)		30	-		18	-		21A3KIV15		2
C 4 /0	2	2	37(5)	0	22	-		16	-		21A3KIV20	(Part numbering example add "N" at the 4th digit 21AN1KI)	2
G 1/8	2,5	3,2	53(7)	0	14	-		9	-		21A3KIV25		2
	3	4	53(7)		10	-		6	-		21A3KIV30	,	2
	1,5	1,4	12(2)		30	-		18	-		21A2KIV15		2
C 1 /4	2	2	37(5)	0	22	-		16	-		21A2KIV20	(Part numbering example	2
G 1/4	2,5	3,2	53(7)	0	14	-		9	-		21A2KIV25	add "N" at the 4th digit 21AN2KI)	2
	3	4	53(7)		10	-		6	-		21A2KIV30	,	2
Normally Open Ex d													
	1,5	1,4	12(2)		30	-		18	-		21A3ZIV15		2
5 4 /0	2	2	37(5)		22	-		16	-		21A3ZIV20	(Part numbering example	2
G 1/8	2,5	3,2	53(7)	0	14	-		9	-		21A3ZIV25	add "N" at the 4th digit 21AN1ZI)	2
	3	4	53(7)		10	-		6	-		21A3ZIV30	2	2
	1,5	1,4	12(2)		30	-		18	-		21A2ZIV15		2
5.4.4	2	2	37(5)		22	-		16	-		21A2ZIV20	(Part numbering example	2
G 1/4	2,5	3,2	53(7)	0	14	-		9	-		21A2ZIV25	add "N" at the 4th digit 21AN2ZI)	2
	3	4	53(7)		10	-		6	-		21A2ZIV30	E II WAZEI)	2

- ▶ **Body material**: Brass UNI EN 12165 CW617N
- ▶ Armature tube: Stainless Steel AISI 300 series
- ▶ Plungers: Stainless Steel AISI 400 series
- ▶ **Spring:** Stainless Steel AISI 300 series
- **Ex d Housing:** in Aluminium die cast
- ▶ Media: mineral oils, gasoline, diesel, fuel oils, air, inert gases, water, 134 a, R 404a
- **Ex m Ambient temperature:** See coils catalogue page for its compatibility
- ▶ Ex m Fluid temperature: -10°C +80°C with FKM seals
 - -30°C + 80°C with H-NBR seals
- ► Ex d Housing Ambient temperature: -40°C +60°C ► Ex d Fluid temperature: -10°C +140°C with FKM seals
- Design pressure PS: 40 bar
- Protection class: Ex m IP65 (complete with electric plug); Ex d IP65 (with hosing fitted by cable gland Atex Ex d)
- ▶ Electrical conformity: IEC 335

- > Switching time: 20 40 msec (depending on pressure conditions)
- ▶ (Conforme to Atex Directive 94/9/CE ATEX)

For S.V. 21A3..I

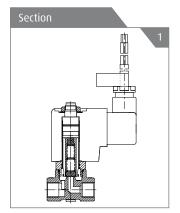
II 2G Ex d IIC T6 o T5 Gb

II 2D Ex tb IIIC T80°C o T90°C Db IP67

(Tamb: -40° C $\leq +60^{\circ}$ C)

For S.V. 21A..Q II 2G Ex mb IIC Gb II 2D Ex mb IIIC t 130°C Db IEC Ex m II T4

A21 IP65 T130°C

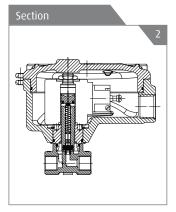


REPAIR KIT

For spare parts please consult our technical department

Coil P/N Ex mb II T 4

RTNA4X024D4 RTNA5X110D4 RTNA05224DA RTNA10024C4



REPAIR KIT

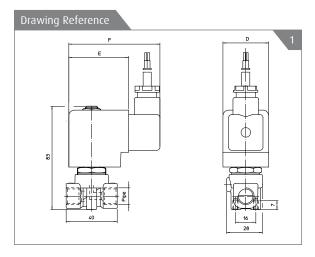
For spare parts please consult our technical department

ACCESSORIES

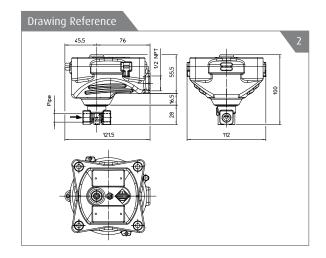
Code P992219 Cable Gland (to be ordered separately)

INSTALLATION

- ▶ The solenoid valves can be mounted in any position
- Maintenance and instruction sheet available in each solenoid valve box
- Attention: for fuse selection please refer to the "Instruction sheet Atex products" delivered together with the valve
- Fixing holes
- Holes and threaded connections for panel fixing



Dimensionale Table										
Figure	Coil Type	D mm	E mm	F mm						
1	T	36	47	71						





21IH Ex d N.C.









FEATURES

- Wide range of application high flow valves for liquids, gaseousHazardous environment
- Small poppet valve for tight shutoff
 Mountable in any position
 Dedicated to CPT Market





W	
1	N.C.

21IH	3	KI	V	150		В	D	А	08	012	С	5
	3= G 3/8 - 3/8 NPT	KI= N.C.	V= FKM							012 = 12V	C= DC	
Model	4= G 1/2 - 1/2 NPT		B= NBR	150 160	Orefice						024= 24V	D= AC
valve	5= G 3/4 - 3/4 NPT			200 250	10 ⁻¹ mm	B= 30mm Ø 13	D EN 175301-803	A= Class F	08= 8W	048= 48V		S= Without Approval(*)
	6= G 1 - 1 NPT			230						110= 110V		
										223 = 220V-230V		

(*) Ex d protection class when assemled with Ex housing

PIPE	Ø Kv		MAX VISCOSITY	PRESSURE	PRESSURE MAX MOPD (bar) COIL TYPE						- GAS CODE	NPT CODE	DRAWING
PIPE	(mm)	(I/min)	cSt (°E)	min	В	AC		R	DC		GAS CODE	INITCODE	REFERENCE
					В			В					
G 3/8 3/8 NPT	15	40	12(2)		14			6			21IH3KIV150	21IN3KIV150-IH	1
G 1/2 1/2 NPT	16	50	12(2)		14			6			21IH4KIV160	21IN4KIV160-IH	1
G 3/4 3/4 NPT	20	60	12(2)	0	14			6			21IH5KIV200	21IN5KIV200-IH	1
G 1 1 NPT	25	140	12(2)		14			3			21IH6KIV250	21IH6KIV250-IH	1

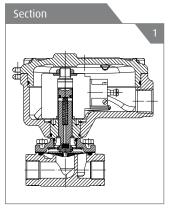
- ▶ Body material: Stainless Steel AISI 316
- Armature tube: Stainless Steel AISI 316
- ▶ Plungers: Stainless Steel AISI 400 Series
- ▶ **Spring:** Stainless Steel AISI 300 Series Ex d Housing in Aluminium die cast
- Media: air, inert gases, water, mineral oils, gasoline, diesel
- ▶ Housing ambient temperature: -40°C +60°C
- ▶ Fluid temperature: -10°C +80°C with NBR seals
 - -10°C +80°C with FKM seals
- Design pressure PS: 16 bar
- ▶ Protection class: IP65 (with hosing fitted by cable gland Atex Ex d
- ▶ Electrical conformity: IEC335

(Conforme to Atex Directive 94/9/CE ATEX)

II 2G Ex d IIC T6 o T5 Gb

II 2D Ex tb IIIC T80° o T95°C Db IP67

(Tamb: -40° C $\leq +60^{\circ}$ C)



DEDAID KIT

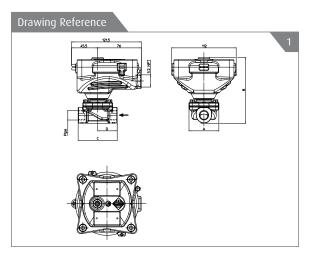
For spare parts please consult our technical department

ACCESSORIES

Code P992219 Cable Gland (to be ordered separately)

INSTALLATION

- The solenoid valves can be mounted in any position
- ▶ Other port connections available on request
- ▶ Maintenance and instruction sheet available in each solenoid valve box
- Attention: for fuse selection please refer to the "Instruction sheet Atex products" delivered together with the valve
- Availability of repair kit and coils as spares.



Dimensionale Table

Figure	Pipe	A mm	B mm	C mm	D mm	
	G 3/8 3/8 NPT	52	114,5	68	34	
4	G 1/2 1/2 NPT	32	114,5	08	54	
·	G 3/4 3/4 NPT	58	123	75	37,5	
	G 1 1 NPT	65	131	90	45	



21L Ex m Ex d N.C.



FEATURES

- Wide range of applications high flow valves for liquids, gaseous
 Reliable proven design with high flow
 Small poppet valve for tight shutoff
 Mountable in any position

C	ϵ	⟨Ex⟩



21L	1	QD	V	25	
Model valve	2 = G 1/8	QD= N.C.	V= FKM	25 30	Orefice 10 ⁻¹ mm
	3 = G 1/4	KI= N.C	F= H-NBR	45 55	

В	D	A	08	012	С	5					
				012 = 12V	C= DC						
				024 = 24V	D= AC						
B= 30mm D EN 1	D EN 175301-803	A= Class F	08= 8W	048= 48V		S= Without Approval(*)					
	EN 173301 003			110 = 110V							
				223 = 220V-230V							
(*) Ex d protection	(*) Ex.d. protection class when assembled with Ex. housing										

T	N	А	4X	024	D	4	
			4X= 7,2V	024 = 24V			
T= 36mm	N 3 cables cm 300	A= Class F	5X= 9,13V	110 = 110V	D= AC	4= Ex m T4	
Ø 14,5			05 = 7,7V-9,2V	224 = 220V-240V			
			10 = 10,1W	024= 24V	C= DC		

PIPE	Ø			PRESSURE	PRESSURE MAX MOPD (bar) COIL TYPE				PD (bar	·)	GAS CODE	NPT CODE	DRAWING
PIPE	(mm)	(I/min)	cSt (°E)	min		AC			DC		GAS CODE	NPT CODE	REFERENCE
					В	T							
Normally Closed Ex n	n												
	2,5	3,2	53(7)		-	14		-	9		21L1QDV25		1
G 1/8	3	4	53(7)	0	-	10		-	6		21L1QDV30		1
	4	5	53(7)		-	6		-	1,7		21L1QDV40	(Part numbering example add "N" at the 4th digit 21LN1QDV25)	1
	2,5	3,2	53(7)		-	14		-	9		21L2QDV25		1
G 1/4	3	4	53(7)	0	-	10		-	6		21L2QDV30		1
0 1/4	4	5	53(7)	0	-	6		-	1,7		21L2QDV40		1
	5,5	9	53(7)		-	3,5		-	1		21L2QDV55		1
Normally Closed Ex d													
	2,5	3,2	53(7)		14	-		9	-		21L2KIV25		2
G 1/4	3	4	53(7)	0	10	-		6	-		21L2KIV30	(Part numbering example add "N" at the 4th digit	2
0 1/4	4	5	53(7)	U	6	-		1,7	-		21L2KIV40	21LN2KIV25)	2
	5,5	3,2	53(7)		3,5	-		1	-		21L2KIV55	,	2

- ▶ Body material: Stainless Steel AISI 316
- ▶ Armature tube: Stainless steel AISI 300 series
- Plungers: Stainless Steel AISI 400 series
- Spring: Stainless Steel AISI 300 series
- ▶ Ex d Housing in Aluminium die cast
- Media: mineral oils, gasoline, diesel, fuel oils, air, water, inert gases, 134 a, R 404a
- **Ex m Ambient temperature:** See coils catalogue page for its compatibility
- ▶ Ex m Fluid temperature: -10°C +80°C with FKM seals
- -30°C +80°C with H-NBR seals ▶ Ex d Housing Ambient temperature: -40°C +60°C
- ▶ Ex d Fluid temperature: -10 +80°C with FKM seals
- ▶ Design pressure PS: 40 bar
- Protection class: Ex m IP65 (complete with electric plug); Ex d IP65 (with hosing fitted by cable gland Atex Ex d)
- ▶ Electrical conformity: IEC 335

▶ (Conforme to Atex Directive 94/9/CE ATEX) For S.V. 21L..I

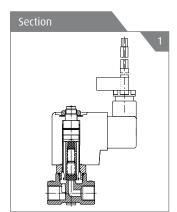
II 2G Ex d IIC T6 o T5 Gb

II 2D Ex tb IIIC T80°C o T90°C Db IP67 (Tamb: -40° C $\leq +60^{\circ}$ C)

For S.V. 21L..Q

II 2G Ex mb IIC Gb

II 2D Ex tb IIIC t130°C Db

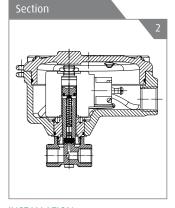


REPAIR KIT

For spare parts please consult our technical department

Coil P/N Ex mb II T 4

RTNA4X024D4 RTNA5X110D4 RTNA05224DA RTNA10024C4



REPAIR KIT

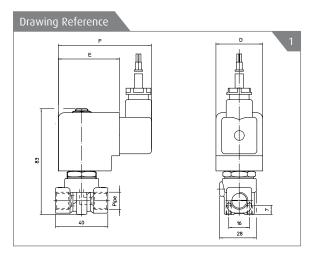
For spare parts please consult our technical department

ACCESSORIES

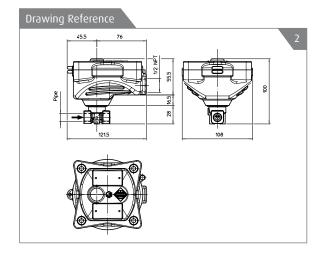
Code P992219 Cable Gland (to be ordered separately)



- ▶ The solenoid valves can be mounted in any position
- Maintenance and instruction sheet available in each solenoid valve box
- Attention: for fuse selection please refer to the "Instruction sheet Atex products" delivered together with the valve
- Fixing holes
- Holes and threaded connections for panel fixing



Dimensionale Table									
Figure	Coil Type	D mm	E mm	F mm					
1	T	36	47	71					





21W Ex m, Ex d N.C/N.O.





FEATURES

- Wide range of applications high flow valves for liquids, gaseousReliable proven design with high flows
- Small poppet valve for tight shutoffMountable in any position







(Pressure Equipment Directive 97/23/CE) for S.V. 21WN7÷21WN9 - 21W5÷21W7

21WA	3	QD	V	130		
Model 4	3 = G 1/8		V= FKM	130		
	4= G 1/2 T	QD	F= H-NBR	190 250	Orefice	
	5 = G 3/4	N.C. Ex m		350 400	10 ⁻¹ mm	
	6 = G 1			500		

21W3	3	KI	В	190	
	3 = G 1/8 - 3/8 NPT	KI N.C. Ex d	B= NBR		
Model	4= G 1/2 - 1/2 NPT	ZI N.O. Ex d	E= EPDM	130 190	Orefice
valve	5 = G 3/4 - 3/4 NPT		F= H-NBR	250 350	10 ⁻¹ mm
	6= G 1 - 1 NPT		V= FKM	400	
	7 = G 1 1/4 - 1 1/4 NPT			500	
	8= G 1 1/2 - 1 1/2NPT				
	9= G 2 - 2 NPT				

В	D	А	08	012	С	S
B = 30mm Ø 13	D EN 175301-803	A= Class F		012 = 12V	C= DC	
				024 = 24V	D= AC	
			08=8W	048= 48V		S= Without Approval(*)
				110 = 110V		
				223 = 220V-230V		

(*) Ex d protection class when assemled with Ex housing

T	N	А	4X	024	D	4	
			4X= 7,2V	024 = 24V			
T= 36mm	N	A= Class F	5X= 9,13V	110 = 110V	D= AC	4 = Ex m T4	
Ø 14,5	3 cables cm 300		05 = 7,7V-9,2V	224 = 220V-240V			
			10 = 10W	024= 24V	C= DC		

0105	Ø	Kv	MAX VISCOSITY	PRESSURE	PR	RESSUR	X MOI TYPE	PD (bar)		NOT CODE	FLOW
PIPE	(mm)	(I/min)	cSt (°E)	min		AC		DC	— GAS CODE	NPT CODE	CURVE
					T	В	T	В			
Normally Closed Ex r	n										
G 3/8	13	60	12(2)	0,2	16	-	16	-	21WA3QDV130		1
G 1/2	13	70	12(2)	0,2	16	-	16	-	21WA4QDV130		1
G 3/4	19	140	12(2)	0,2	16	-	16	-	21W3QDV190		1
G 1	25	190	12(2)	0,2	16	-	16	-	21W4QDV250		1
G 1 1/4	35	400	12(2)	0,2	16	-	16	-	21W5QDV350		1
G 1 1/2	40	520	12(2)	0,2	10	-	10	-	21W6QDV400		1
G 2	50	750	12(2)	0,2	10	-	10	-	21W7QDV500		1
Normally Closed Ex r	n										
3/8"	13	60	12(2)	0,2	-	16	-	16	21WA3KIB130	21WN3KIB130	2
1/2"	13	70	12(2)	0,2	-	16	-	16	21WA4KIB130	21WN4KIB130	2
3/4"	19	140	12(2)	0,2	-	16	-	16	21W3KIB190	21WN5KIB190	2
1"	25	190	12(2)	0,2	-	16	-	16	21W4KIB250	21WN6KIB250	2
1/4"	35	400	12(2)	0,2	-	10	-	10	21W5KIB350	21WN7KIB350	2
1/2"	40	520	12(2)	0,2	-	10	-	10	21W6KIB400	21WN8KIB400	2
2"	50	750	12(2)	0,2	-	10	-	10	21W7KIB500	21WN9KIB500	2
Normally Open Ex m											
3/8"	13	60	12(2)	0,2	-	16	-	16	21WA3ZIB130	21WN3ZIB130	2
1/2"	13	70	12(2)	0,2	-	16	-	16	21WA4ZIB130	21WN4ZIB130	2
3/4"	19	140	12(2)	0,2	-	16	-	16	21W3ZIB190	21WN5ZIB190	2
1"	25	190	12(2)	0,2	-	16	-	16	21W4ZIB250	21WN6ZIB250	2
1/4"	35	400	12(2)	0,2	-	10	-	10	21W5ZIB350	21WN7ZIB350	2
1/2"	40	520	12(2)	0,2	-	10	-	10	21W6ZIB400	21WN8ZIB400	2
2"	50	750	12(2)	0,2	-	10	-	10	21W7ZIB500	21WN9ZIB500	2

- ▶ Body material: Brass UNI EN 12165 CW617N
- ▶ Armature tube: Stainless Steel AISI 300 series
- ▶ Plungers: Stainless Steel AISI 400 series
- ▶ **Spring:** Stainless Steel AISI 300 series
- ▶ Ex d Housing in Aluminium die cast
- Media: mineral oils, gasoline, diesel, air, inert gases, water, R 134a, R 404a
- **Ex m Ambient temperature:** See coils catalogue page for its compatibility
- **Ex m Fluid temperature:** -10°C +80°C with FKM seals
 - -30°C +80°C with H-NBR seals
- Design pressure PS: G 3/4 1 25 bar

25 bar for 21WA3Q ÷ 21WA4Q

20 bar for 21WA3KI ÷ 21WA4KI

21WA3ZI ÷ 21WA4ZI

- ▶ Ex d Ambient temperature: -40°C +60°C
- ▶ Ex d Housing Fluid temperature: -10°C +80°C with FKM seals

▶ Protection class: Ex m IP 65

(complete with electric plug); Ex IP 65 (with hosing fitted by cable gland Atex Ex d)

- ▶ Electrical conformity: IEC335
- > Switching time: 20-40 msec (depending on pressure conditions)
- ▶ (Conforme to Atex Directive 94/9/CE ATEX)

For S.V. 21W..I

II 2G Ex d IIC T6 o T5 Gb

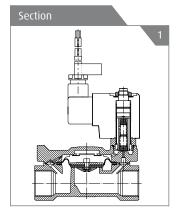
II 2D Ex tb IIIC T80°C o T90°C Db IP67

(Tamb: -40°C ≤ +60°C)

For S.V. 21W..Q

II 2G Ex mb IIC Gb

II 2D Ex tb IIIC t130°C Db

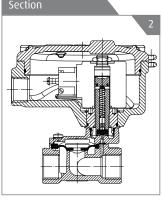


REPAIR KIT

For spare parts please consult our technical department

Coil P/N Ex mb II T 4

RTNA4X024D4 RTNA5X110D4 RTNA05224DA RTNA10024C4



REPAIR KIT

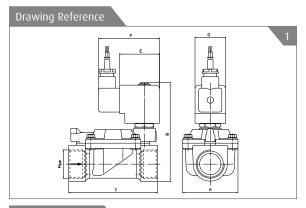
For spare parts please consult our technical department

ACCESSORIES

Code P992219 Cable Gland (to be ordered separately)



- ▶ The solenoid valves can be mounted in any position
- Maintenance and instruction sheet available in each solenoid valve box
- Attention: for fuse selection please refer to the "Instruction sheet Atex products" delivered together with the valve
- ▶ Fixing holes
- ▶ Holes and threaded connections for panel fixing



Drawing Reference

Dimensionale Table

Figure	Pipe	Coil Type	A mm	B mm	C mm	D mm	E mm	F mm
	3/8	B T	40	120 103	60	47 36	- 47	71
	1/2	B T	40	120 103	66	50 36	- 47	71
	3/4	B T	65	128 111	104	89 36	- 47	71
1-2	1	B T	65	136 118	104	89 36	- 47	71
	1 1/4	B T	98	153 131	144	125 36	- 47	71
	1 1/2	B T	98	153 131	144	125 36	- 47	71
	2	B T	118	144 147	172	150 36	- 47	71



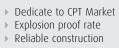
21X Ex m, Ex d N.C.







FEATURES







21X	2	QD	V	120	
	2= G 1/2 4= 1/2 NPT	QD= N.C. Ex m	V= FKM		
Model valve	3= G 3/4 5= 3/4 NPT	KI= N.C. Ex d	F= H-NBR	120 190 250	Orefice 10 ⁻¹ mm
	4= G 1 6= 1 NPT			230	

В	D	A	08	012	С	S
				012 = 12V	C= DC	
				024= 24V	A= AC	
B= 30mm D Ø 13 EN 17530	D EN 175301-803	A= Class F	08= 8W	048= 48V		S= Without Approval(*)
D 13	214 17 330 1 003			110 = 110V		
				223 = 220V-230V		
(*) Ex d protection	class when assembled	with Fy housing	ın			

T	N	А	4X	024	D	4
			4X= 7,2V	024 = 24V		
T= 36mm	N	A= Class F	5X= 9,13V	110 = 110V	D= AC	4 = Ex m T4
Ø 14,5	3 cables cm 300	77 (1033)	05 = 7,7V-9,2V	224 = 220V-240V		4- EX III 14
			10 = 10,1W	024 = 24V	C= DC	

PIPE	Ø	Kv	MAX VISCOSITY	PRESSURE				GAS CODE	NPT CODE	DRAWING			
	(mm)	(I/min)	cSt (°E)	min		AC			DC				REFERENCE
N. II el Ie					В	T		В	T				
Normally Closed Ex r	n												
1/2	12	35	12(2)		-	16		-	16		21X2QDV120	21XN4QDV120	1
3/4	19	130	12(2)	0,1	-	16		-	16		21X3QDV190	21XN5QDV190	1
1	25	160	12(2)		-	16		-	16		21X4QDV250	21XN6QDV250	1
Normally Closed Ex o	l												
1/2	12	35	12(2)		20	-		20	-		21X2KIV120	21XN2KIV120	2
3/4	19	130	12(2)	0,1	16	-		16	-		21X3KIV190	21XN3KIV190	2
1	25	160	12(2)		16	-		16	-		21X4KIV250	21XN4KIV250	2

- ▶ Body material: Stainless Steel AISI 316
- ▶ Armature tube: Stainless Steel AISI 300 series
- ▶ Plungers: Stainless Steel AISI 400 series
- ▶ **Spring:** Stainless Steel AISI 300 series
- ▶ Ex d Housing in Aluminium die cast
- ▶ Media: mineral oils, gasoline, diesel, fuel oils, air inert gases, water, 134 a, R 404a
- **Ex m Ambient temperature:** See coils catalogue page for its compatibility
- **Ex m Fluid temperature:** -10°C +80°C with FKM seals
- ▶ Ex d Housing Ambient temperature: -40°C +60°C
- ▶ Ex d Fluid temperature: -30°C +80°C with H-NBR seals
 - -10°C +140°C with FKM seals
- Design pressure PS: 25 bar
- ▶ Protection class: Ex m IP65 (complete with electric plug)
 - Ex d IP 65 (with hosing fitted by cable gland Atex Ex d)
- ▶ Electrical conformity: IEC 335

- Switching time: 20-40 msec (depending on pressure conditions)
- (Conforme to Atex Directive 94/9/CE ATEX)
 For S.V. 21X2Q..

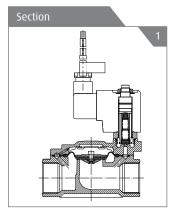
II 2G Ex mb IIC Gb II 2D Ex tb IIIC t130°C Db

For S.V. 21X2KI...

II 2G Ex d IIC t6 o t5 Gb

II 2D Ex bb IIIC T80°C o T95°C Db

(Tamb: -40°C ≤ +60°C)

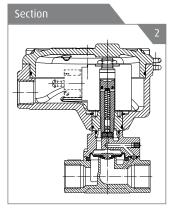


REPAIR KIT

For spare parts please consult our technical department

Coil P/N Ex mb II T 4

RTNA4X024D4 RTNA5X110D4 RTNA05224DA RTNA10024C4



REPAIR KIT

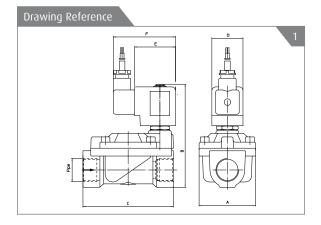
For spare parts please consult our technical department

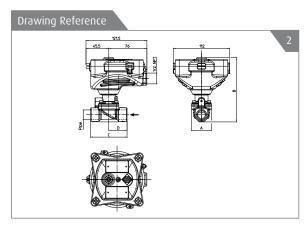
ACCESSORIES

Code P992219 Cable Gland (to be ordered separately)



- ▶ The solenoid valves can be mounted in any position
- Maintenance and instruction sheet available in each solenoid valve box
- Attention: for fuse selection please refer to the "Instruction sheet Atex products" delivered together with the valve
- ▶ Holes and threaded connections for panel fixing





Dimensionale Table

Figure	Pipe	Coil Type	A mm	B mm	C mm	D mm	E mm	F mm
	G 1/2 1/2 NPT	B T	40	120 110	73	36,5 36	- 47	71
1-2	G 3/4 3/4 NPT	B T	65	136 120	104	88,5 36	- 47	71
	G 1 1 NPT	B T	65	136 120	104	88,5 36	- 47	71



31A2 Ex m, Ex d N.C.

















FEATURES

- Wide range of applications high flow valves for liquids, gaseousReliable proven design with high flows
- Small poppet valve for tight shutoffMountable in any position

31A	3	PD	V	15	
Model	2 = G 1/4	PD= N.C. Ex m	V= FKM	15 20	Orefice
valve	3 = G 3/8	EI= N.C. Ex d	F= H-NBR	25 30	10 ⁻¹ mm

A	08	012	С	5
		012 = 12V	C= DC	
		024= 24V	A= AC	
A= Class F	08= 8W	048= 48V		S= Without Approval(*)
003		110 = 110V		
		223 = 220V-230V		
		-803 A= Class F 08= 8W	-803 A= Class F 08= 8W 048= 48V 110= 110V 223= 220V-230V	012= 12V

 $(^{*})$ Ex d protection class when assembled with Ex housing

T	N	А	4X	024	D	4	
			4X= 7,2V	024 = 24V			
T = 36mm	N	A= Class F	5X = 9,13V	110 = 110V	D= AC	4 = Ex m T4	
Ø 14,5	3 cables cm 300	A C10331	05 = 7,7V-9,2V	224 = 220V-240V		4- EX III 14	
			10 = 10,1W	024 = 24V	C= DC		

	Ø			PRESSURE	PRESSURE MAX MOPD (bar) COIL TYPE								FLOW
PIPE	(mm)	(I/min)	cSt (°E)	min		AC			DC		GAS CODE	NPT CODE	CURVE
					В	T		В	T				
Normally Closed Ex m		(*) 3rd way ex	haust= Ø 3mm										
	1,5(*)	1,2	12(2)		-	15		-	15		31A3PDV15		1
G 1/8	2(*)	2	37(5)	0	-	10		-	10		31A3PDV20		1
0 1/8	2,5(*)	3	53(7)	U	-	6		-	6		31A3PDV25		1
	3(*)	3,5	53(7)		-	5		-	5		31A3PDV30	(Part numbering example add "N" at the 4th digit	1
	1,5(*)	1,2	12(2)		-	15		-	15		31A2PDV15	31AN1PD; 31AN2PD)	1
G 1/4	37(5)	0	-	10		-	10		31A2PDV20	, ,	1		
	2,5(*)	3	53(7)	U	-	6		-	6		31A2PDV25		1
	3(*)	3,5	53(7)		-	5		-	5		31A2PDV30		1
Normally Closed Ex d		(*) 3rd way ex	haust= Ø 3mm										
	1(*)	0,45	12(2)		20	-		20	-		31A3EIV10		2
	1,5(*)	1,4	12(2)		15	-		15	-		31A3EIV15		2
G 1/8	2(*)	2	37(5)	0	10	-		10	-		31A3EIV20		2
	2,5(*)	3,2	53(7)		6	-		6	-		31A3EIV25		2
	3(*)	4	53(7)		5	-		5	-		31A3EIV35	(Part numbering example add "N" at the 4th digit	2
	1(*)	0,45	12(2)		20	-		20	-		31A2EIV10	31AN1EI; 31AN2EI)	2
	1,5(*)	1,4	12(2)		15	-		15	-		31A2EIV15	, , ,	2
G 1/4	2(*)	2	37(5)	0	10	-		10	-		31A2EIV20		2
	2,5(*)	3,2	53(7)		6	-		6	-		31A2EIV25		2
		53(7)		5	-		5	-		31A2EIV35		2	

- ▶ Body material: Brass UNI EN 12165 CW617N
- ▶ Armature tube: Stainles Steel AISI 300 series
- ▶ Plungers: Stainless Steel AISI 400 series
- ▶ **Spring:** Stainless Steel AISI 300 series
- ▶ Ex d Housing in Aluminium die cast
- ▶ Media: mineral oils, gasoline, diesel, fuel oils, air inert gases, water, 134 a, R 404a
- > Ambient temperature: See coils catalogue page for its compatibility
- ▶ Ex m Fluid temperature: -10°C +80°C with FKM seals
- -30°C +80°C with H-NBR seals
 Ex d Housing Ambient temperature: -40°C +60°C
- Design pressure PS: 40 bar
- Protection class: Ex m IP 65 (complete with electric plug);

Ex d IP 65 (with hosing fitted by cable gland Atex Ex d)

▶ Electrical conformity: IEC 335

 Switching time: 20-40 msec (depending on pressure conditions)

(Conforme to Atex Directive 94/9/CE ATEX)

For S.V. 31A3EI..

II 2G Ex d IIC T6 o T5 Gb

II 2D Ex tb IIIC T80°C o T90°C Db IP67

(Tamb: $-40^{\circ}C \le +60^{\circ}C$)

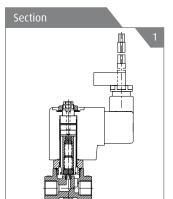
For S.V. 31A3P..

II 2G Ex mb II T4

II 2D Ex tD

IEC Ex m II T4

A21 IP65 T130°C

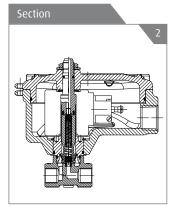


REPAIR KIT

For spare parts please consult our technical department

Coil P/N Ex mb II T 4

RTNA4X024D4 RTNA5X110D4 RTNA05224DA RTNA10024C4



REPAIR KIT

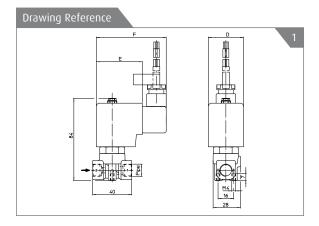
For spare parts please consult our technical department

ACCESSORIES

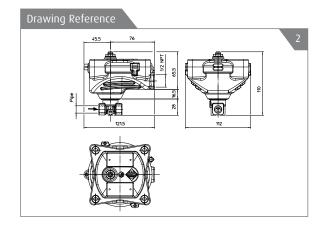
Code P992219 Cable Gland (to be ordered separately)



- ▶ The solenoid valves can be mounted in any position
- Maintenance and instruction sheet available in each solenoid valve box
- Attention: for fuse selection please refer to the "Instruction sheet Atex products" delivered together with the valve
- ▶ Holes and threaded connections for panel fixing



Dimensio	onale Table			
Figure	Coil Type	D mm	E mm	F mm
1	T	36	47	71





31L Ex m, Ex d N.C.





- Ideal for pilotingHigh flow rateAtex approval





31L	1	PD	V	20	
Model	1 = G 1/8	PD= N.C. Ex m	V= FKM	20	Orefice
valve	2 = G 1/4	EI= N.C. Ex d	F= H-NBR	30	10 ⁻¹ mm

В	D	А	08	012	С	5
				012 = 12V	C= DC	
				024= 24V	D= AC	
B= 30mm D A= Cla Ø 13 EN 175301-803	A= Class F	08= 8W	048= 48V		S= Without Approval(*)	
213	EIV 175501 605			110 = 110V		
				223 = 220V-230V		
(*) Ev d protection	class when assembled	with Ev housin	in			

T	N	А	4X	024	D	4	
			4X= 7,2V	024 = 24V			
T = 36mm	N	A= Class F	5X= 9,13V	110 = 110V	D= AC	4 = Ex m T4	
Ø 14,5	3 cables cm 300	77 (1033)	05 = 7,7V-9,2V	224 = 220V-240V		4- EX III 14	
			10 = 10,1W	024= 24V	C= DC		

PIPE	PIPE Ø KV MAX VISCOSITY (mm) (I/min) cSt (°E)		MAX VISCOSITY	PRESSURE min	PRESSURE MAX MOPD (bar) COIL TYPE					ar)	GAS CODE	NPT CODE	DRAWING
	(111111)	(1/11111)	(31 (E)	111111	В	AC T		В	DC T				REFERENCE
Normally Closed Ex n	n	(*) 3rd way ex	haust= Ø 3mm						· ·				
G 1/8	2(*)	2	37(7)		-	10		-	10		(Part numbering example add "N" at the 4th digit	31LN1PDV20	1
G 1/8	2(*)	4	53(7)	0	-	5		-	5		31L1PDV20)	31LN1PDV30	1
G 1/4	2(*)	2	37(7)	0	-	10		-	10		31L2PDV20	31LN2PDV20	1
G 1/4	3(*)	4	53(7)		-	5		-	5		31L2PDV30	31LN2PDV30	1
Normally Closed Ex d		(*) 3rd way ex	haust= Ø 3mm										
G 1/8	2(*)	2	37(7)		10	-		10	-		31L1EIV20	31LN1EIV20	2
G 1/8	2(*)	4	53(7)	0	5	-		5	-		31L1EIV30	31LN1EIV30	2
G 1/4	2(*)	2	37(7)	U	10	-		10	-		31L2EIV20	31LN2EIV20	2
G 1/4	3(*)	4	53(7)		5	-		5	-		31L2EIV30	31LN2EIV30	2

- ▶ Body material: Stainless Steel AISI 316
- ▶ Armature tube: Stainless Steel AISI 300 series
- ▶ Plungers: Stainless Steel AISI 400 series
- ▶ **Spring:** Stainless Steel AISI 300 series
- Ex d Housing in Aluminium die cast
- Media: mineral oils, gasoline, diesel, fuel oils, air, water, inert gases, 134 a, R 404a
- **Ex m Ambient temperature:** See coils catalogue page for its compatibility
- **Ex m Fluid temperature:** -10°C +80°C with FKM seals
- ▶ Ex d Housing Ambient temperature: -40°C +60°C
- ▶ Ex d Fluid temperature: -10°C + 80°C with FKM seals

-30°C +80°C H-NBR

- ▶ **Design pressure PS:** 40 bar for Ex d
 - 25 bar for Ex m
- ▶ **Protection class:** Ex m IP 65 (complete with electric plug);

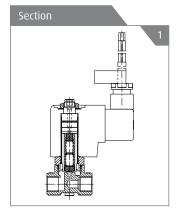
Ex d IP 65 (with hosing fitted by cable gland Atex Ex d

▶ Electrical conformity: IEC 335

(Conforme to Atex Directive 94/9/CE ATEX)
For S.V. 31L..I
II 2G Ex d IIC T6 o T5 Gb
II 2D Ex tb IIIC T80°C o T90°C Db IP67

For S.V. 31L..P II 2G Ex mb II T4 II 2D Ex tD IEC Ex m II T4 A21 IP65 T130°C

(Tamb: -40°C ≤ +60°C)

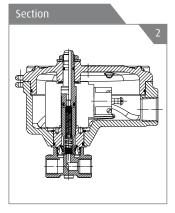


REPAIR KIT

For spare parts please consult our technical department

Coil P/N Ex mb II T 4

RTNA4X024D4 RTNA5X110D4 RTNA05224DA RTNA10024C4



REPAIR KIT

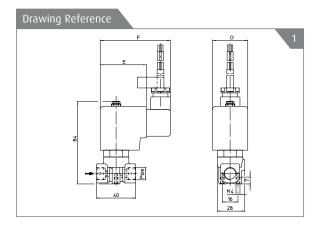
For spare parts please consult our technical department

ACCESSORIES

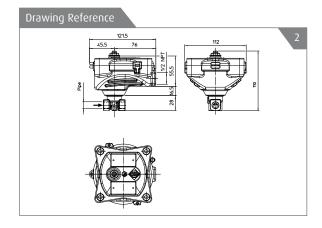
Code P992219 Cable Gland (to be ordered separately)

INSTALLATION

- ▶ The solenoid valves can be mounted in any position
- Maintenance and instruction sheet available in each solenoid valve box
- Attention: for fuse selection please refer to the "Instruction sheet Atex products" delivered together with the valve
- Fixing holes
- ▶ Holes and threaded connections for panel fixing



Dimensio	nale Table `			
Figure	Coil Type	D mm	E mm	







HIGH PRESSURE SOLENOID VALVES

▶ HIGH PRESSURE

page 100-101



HIGH PRESSURE















TECHNICAL SPECIFICATION

- ▶ Body material: Brass UNI EN 12165 CW617N (for 21A1K0R30-TXC;21A2K0T12-XC;21AN2K0T12-XC; 21A1ZT11D-GB)
- ▶ **Body material:** Brass UNI EN 12164 CW614N (for 4739MZU190;4731K0T70;4966K0Q120;4592MZU190; 4966Z0Q120D)
- Armature tube: Stainless Steel AISI 300 series
- ▶ Plungers: Stainless Steel AISI 400 series
- Spring: Stainless Steel AISI 300 series
- Piston: POM C (for 4739MZU190;4592MZU190)
- Piston ring: Modified PTFE (for 4739MZU190;4592MZU190) Main seal: POM C=Acetalic resin (for 492MZU190;4739MZU190)
- T=PTFE (for 4731K0T70); Q=PBT (for 4966K0Q120;4966Z0Q120D)
- ▶ Pilot seal: TPU=Polyurethane resin (for 4739MZU190; 4592MZU190; 4966Z0Q120D); PTFE modified (for 4731K0T70; 4966K0Q120)
- > Seal: RUBY (for 21A1K0R30-TXC); PTFE (for 21A1ZT11D-GB; 21A2K0T12-XC; 21AN2K0T12-XC)

(E

Suffix description:(code)TXC						
-TXC	Version with PTFE, rectified bridge					
-TC	Version with rectified bridge					
-GB	Version with dampness-proof					

21A	1	K0	R	30		**
	1 SUBPLATE MOUNTING	K = N.C.	R= RUBY	3		
Model	2= G 1/4	Z = N.O.	U= POM C	7	Orefice	D
valve	3 = G 3/8		T= PTFE	11 12	10 ⁻¹ mm	for coil 8W
	4= G 1/2		Q= PTB	19		
	5= G 3/4					

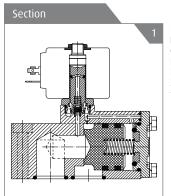
В	D	А	08	223	D	S
B= 30 mm Ø 13	D EN 175301-803	A= Class F	08= 8W	223 = 220V-230V	D= AC	S= Without Approval
U= 36 mm Ø 13		V= Class H	12 = 12W	112 = 110V-120V	A= AC	Y= UL, CSA, VDE
G= 52 mm Ø 13			14 = 14W	024= 24V	C= DC	

DIDE	PIPE (s		Kv		PRESSURE	PR	RESSUR	E MA			ar)	GAS CODE	NPT CODE	DRAWING
PIPE	(r	mm)	(I/min)	cSt (°E)	min		AC			DC		GAS CODE	NPT CODE	REFERENCE
						В	U	G	В	U	G			
Normally Close	ed													
SUBPLATE		3	4	53(7)	0	25	-	-	8	-	-	21A1K0R30-TXC		-
MOUNTING		19	-	-	1	-	-	-	-	-	50	4739MZU190 ⁽³⁾		1
G 1/4		1,2	1	12(2)	0	100	100	-	90	100	-	21A2K0T12-XC	21AN2K0T12-XC	-
G 3/8		7	14	12(2)	0,7(1)	90	100	100	40	90	100	4731K0T70		3
G 1/2		12	60	12(2)	3	100	100	-	90	100	-	4966K0Q120		-
G 3/4		19	110	-	1	-	-	-	-	-	50	4592MZU190 ⁽³⁾		4
Normally Open	1													
SUBPLATE MOUNTING		1,1	0,7	12(2)	0	90		-	90	٠	٠	21A1ZT11D-GB ⁽²⁾		-
G 1/2		12	60	12(2)	3	50	-	-	50	-	-	4966Z0Q120D		2

- Pressure with mono frequency coil
- For dampness-proof cup see catalogue page
- Maximum allowed drop at 1 bar

- Media: water, steam, mineral oils, gas oil, fuel oils (for 21A1K0R30-TXC); air, inert gases (for 4739MZU190; 4592MZU190); air, water (for 21A2K0T12-XC; 21AN2K0T12-XC; 4731K0T70; 4966Z0Q120D; 4966K0Q120); air, water, steam, mineral oils (for 21A1ZT11D-GB)
- > Ambient temperature: See coils catalogue page for its compatibility
- ▶ Fluid temperature: -40°C +180°C with RUBY, PTFE seals (for 21A1K0R30-TXC;21A2K0T12-XC;21AN2K0T12-XC)
 - -10°C +100°C with POM C seals (for 4739MZU190; 4592MZU190)
 - -40°C +98°C with PTFE seals (for 4731K0T70);
 - -20°C +95°C with PBT seals (for 4966K0Q120; 4966Z0Q120D)
- Design pressure PS: 40 bar (for 21A1K0R30-TXC);
 - PS: 50 bar (for 4739MZU190; 4592MZU190);
 - PS: 100 bar (for 21A2K0T12-XC; 21AN2K0T12-XC; 4966K0Q120; 21A1ZT11D-GB);
 - PS: 150 bar (for 4731K0T70);
 - PS: 80 bar (for 4966Z0Q120D)
- Protection class: IP65 (complete with electric plug); IP67 (for 21AZT11D-GB);

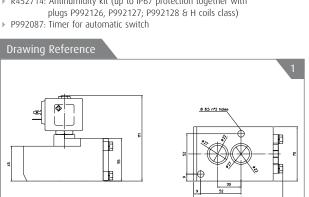
- ▶ Electrical conformity: IEC 335
- > Switching time: 20-40 msec (depending on pressure conditions)



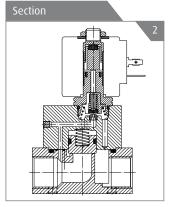
REPAIR KIT Normally Closed Coil B type (8W) KT130KR30-AP (for 21A1K0R30-TC) KT130KT30-AP (for 21A2K0T12-XC; 21AN2K0T12-XC; 4731K0T70; for 4966K0Q120)

RELATED ITEMS

- P990305: Electrical plug EN 175301-803 Pg9
- P990306: Electrical plug EN 175301-803 Pg11
- P992126: Electrical plug EN 175301-803 Pg9 (with OR screw)
- P992127: Electrical plug EN 175301-803 Pg11 (with OR screw)
- P992128: Electrical plug EN 175301-803 cable 2 wires, 53cm
- R452714: Antihumidity kit (up to IP67 protection together with plugs P992126, P992127; P992128 & H coils class)



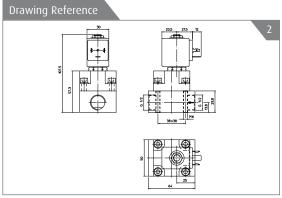
Dimensionale Table											
Figure	Coil Type	D mm	E mm	F mm							
	В	30	42	54							
1-2-3-4	U	36	48	60							
	G	52	55	67							

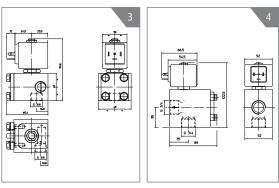


REPAIR KIT Normally Open KT130ZT30-FGB (for 21A1ZT11D-GB) KT130ZT30-F (for 4966Z0Q120D)

ISTALLATION

- The solenoid valves can be mounted in any position
- Maintenance and instruction sheet available in each solenoid valve box
- ▶ Repair kit and coils available as spares









AIR OPERATED VALVES

▶ 21IA N.O. page 104-105

▶ 21IA N.C. " 106-107

▶ 21IA-5 N.C. " 108-109



21IA N.O.













FEATURES

- Angle seat for high flow rate configurationLong life cycles
- N.C. and N.O. convertible after the delivery
 ▶ Flow below and above the piston
- Service free solution
- ▶ Ari water hammer

CE

(Pressure Equipment Directive 97/23/CE) for valve 21IA7 ÷ 21IA9

21IA	4	T	15		G	А	2	
	5= G 3/4 - NPT 3/4							
	6= G 1 - NPT 1		15 20					
Model valve	5= G 1 1/4 - NPT 1 1/4	T= PTFE	25 32	Orefice 10 ⁻¹ mm	G= GAS N= NPT	A = N.O.	Actuator connection	
	6= G 1 1/2 - NPT 1 1/2		40 50					
	9= G 2 - NPT 2		30					

PIPE	Ø (mm)	N (I/min) PRESSURE (bar) PRESSURE (bar) PRESSURE		MAX ALLOWABLE PRESSURE	GAS CODE	NPT CODE	WEIGHT	DRAWING REFERENCE			
			min	max	min	max	PS (bar)			kg	
Normally Open E	x m										
1/2″	15	80	1,5	10	0		40	21IA4T15GA2	21IA4T15NA2	1,2	1
3/4"	20	150	1,5	10	0		40	21IA5T20GA2	21IA5T20NA2	1,3	1
1"	25	190	1,5	10	0	(See graphic	40	21IA6T25GA2	21IA6T25NA2	1,6	1
1/4"	32	340	1,5	10	0	n. 1)	25	21IA7T32GA2	21IA7T32NA2	2,2	1
1/2"	40	430	1,5	10	0		25	21IA8T40GA2	21IA8T40NA2	2,5	1
2"	50	620	1,5	10	0		16	21IA9T50GA2	21IA9T50NA2	3,7	1
Normally Open v	vith electrica	l position inc	licators								
1/2"	15	80	1,5	10	0		40	21IA4T15GA2-IP1	21IA4T15NA2-IP1	1,2	2
3/4"	20	150	1,5	10	0		40	21IA5T20GA2-IP1	21IA5T20NA2-IP1	1,3	2
1"	25	190	1,5	10	0	(See graphic	40	21IA6T25GA2-IP1	21IA6T25NA2-IP1	1,6	2
1/4"	32	340	1,5	10	0	n. 1)	25	21IA7T32GA2-IP1	21IA7T32NA2-IP1	2,2	2
1/2"	40	430	1,5	10	0		25	21IA8T40GA2-IP1	21IA8T40NA2-IP1	2,5	2
2"	50	620	1,5	10	0		16	21IA9T50GA2-IP1	21IA9T50NA2-IP1	3,7	2

▶ VALVE FEATURES

Fluid Temperature: -10°C +180°C Environment temperature: -10°C +60°C Material: Stainless Steel AISI 316 series

Seal: PTFE

Packing gland: PTFE, FKM
▶ PILOT ACTUATOR FEATURES

Media: Dry Air or lubrificated, gas and neutral fluids

Fluid Temperature: max +60°C

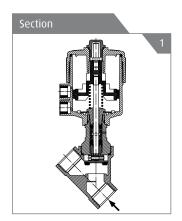
Body: Polyamide 66 with 30% glass fibre

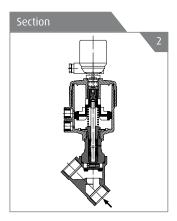
NBR Gaskets Actuator Ø 70

Self adjusting Teflon seat

AVAILABLE ON REQUEST

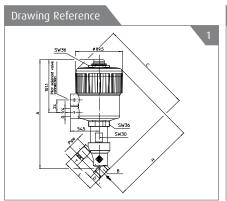
- ▶ Pilot Valve 31A2AV20+BDA (see 31A catalogue page)
- ▶ Together with male thread nipple male 1/4"-1/4"
- Position indicator
- ▶ Water piloting system

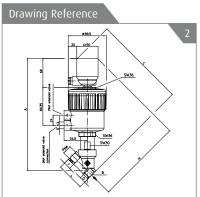


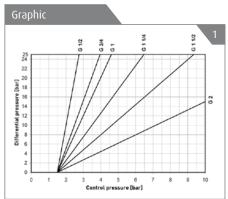


INSTALLATION

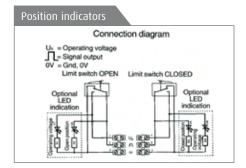
- ▶ The solenoid valves can be mounted in any position
- \blacktriangleright Maintenance and instruction sheet available in each solenoid valve box







Dimensio	onale Table							
Figure	Pipe	A mm	B mm	C mm	D mm	H mm	L mm	T mm
	1/2"	206,8	SW 27	178,7	15,4	163,3	65	17
	3/4"	211,7	SW 32	188,6	21,9	166,7	75,5	19
1-2	1″	220,1	SW 41	197,8	25,1	172,7	90	21
1 2	1 1/4"	235,9	SW 50	212,3	28,5	183,8	110	24
	1 1/2"	238,9	SW 55	217,0	31,0	186	122	25,2
	2"	247,8	SW 70	229,7	37,5	192,2	151	28,5



21IA N.C.









FEATURES

- Angle seat for high flow rate configurationLong life cycles
- N.C. and N.O. convertible after the delivery
 ▶ Flow below and above the piston
- Service free solutionWater hammer

CE



(Pressure Equipment Directive 97/23/CE) for valve 21IA7 ÷ 21IA9

21IA	4	T	15		G	С	2
	5= G 3/4 - NPT 3/4						
	6= G 1 - NPT 1		15 20			6.116	
Model valve	5= G 1 1/4 - NPT 1 1/4	T= PTFE	25 32 40 50	Orefice 10 ⁻¹ mm	G= GAS N= NPT	C= N.C. D= Double Effect	Actuator connection
	6= G 1 1/2 - NPT 1 1/2						
	9= G 2 - NPT 2						

PIPE	Ø (mm)	Kv (l/min)	ACTUATO PRESSU	OR PILOT RE (bar)		RENTIAL RE (bar)	MAX ALLOWABLE PRESSURE	GAS CODE	NPT CODE	WEIGHT	DRAWING REFERENCE
			min	max	min	max	PS (bar)			kg	
Normally Closed											
1/2"	15	80	4	10	0	16	40	21IA4T15GC2	21IA4T15NC2	1,4	1
3/4"	20	150	4	10	0	10	40	21IA5T20GC2	21IA5T20NC2	1,5	1
1"	25	190	4	10	0	10	40	21IA6T25GC2	21IA6T25NC2	1,8	1
1/4"	32	340	4	10	0	7	25	21IA7T32GC2	21IA7T32NC2	2,4	1
1/2″	40	430	4	10	0	4,5	25	21IA8T40GC2	21IA8T40NC2	2,7	1
2"	50	620	4	10	0	3	16	21IA9T50GC2	21IA9T50NC2	3,9	1
Normally Closed	high pressur	e									
1/2"	15	80	5	10	0	35	40	21IA4T15GC2-H	21IA4T15NC2-H	1,4	1
3/4"	20	150	5	10	0	25	40	21IA5T20GC2-H	21IA5T20NC2-H	1,5	1
1"	25	190	5	10	0	20	40	21IA6T25GC2-H	21IA6T25NC2-H	1,8	1
1/4"	32	340	5	10	0	13	25	21IA7T32GC2-H	21IA7T32NC2-H	2,4	1
1/2"	40	430	5	10	0	8	25	21IA8T40GC2-H	21IA8T40NC2-H	2,7	1
2"	50	620	5	10	0	5,5	16	21IA9T50GC2-H	21IA9T50NC2-H	3,9	1
Normally Closed	high pressur	e with elect	rical positio	n indicator	S						
1/2"	15	80	4	10	0	35	40	21IA4T15GC2-HIP1	21IA4T15NC2-HIP1	1,4	2
3/4"	20	150	4	10	0	25	40	21IA5T20GC2-HIP1	21IA5T20NC2-HIP1	1,5	2
1"	25	190	4	10	0	20	40	21IA6T25GC2-HIP1	21IA6T25NC2-HIP1	1,8	2
1/4"	32	340	4	10	0	13	25	21IA7T32GC2-HIP1	21IA7T32NC2-HIP1	2,4	2
1/2"	40	430	4	10	0	8	25	21IA8T40GC2-HIP1	21IA8T40NC2-HIP1	2,7	2
2"	50	620	4	10	0	5,5	16	21IA9T50GC2-HIP1	21IA9T50NC2-HIP1	3,9	2
Normally Closed	with electric	al position i	ndicators								
1/2"	15	80	4	10	0	16	40	21IA4T15GC2-IP1	21IA4T15NC2-IP1	1,4	2
3/4"	20	150	4	10	0	10	40	21IA5T20GC2-IP1	21IA5T20NC2-IP1	1,5	2
1"	25	190	4	10	0	10	40	21IA6T25GC2-IP1	21IA6T25NC2-IP1	1,8	2
1/4"	32	340	4	10	0	7	25	21IA7T32GC2-IP1	21IA7T32NC2-IP1	2,4	2
1/2″	40	430	4	10	0	4,5	25	21IA8T40GC2-IP1	21IA8T40NC2-IP1	2,7	2
2"	50	620	4	10	0	3	16	21IA9T50GC2-IP1	21IA9T50NC2-IP1	3,9	2

▶ VALVE FEATURES

Fluid Temperature: -10°C +180°C Environment temperature: -10°C +60°C Material: Stainless Steel AISI 316 series

Seal: PTFE

Packing gland: PTFE, FKM
► PILOT ACTUATOR FEATURES

Media: Dry Air or lubrificated, gas and neutral fluids

Fluid Temperature: max +60°C

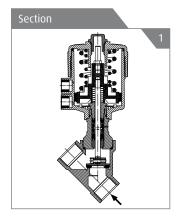
Body: Polyamide 66 with 30% glass fibre

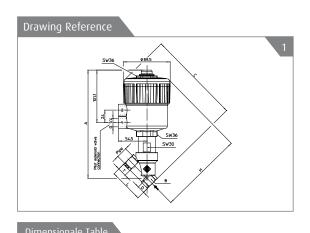
NBR Gaskets Actuator Ø 70

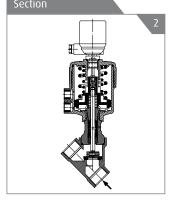
Self adjusting Teflon seat

AVAILABLE ON REQUEST

- ▶ Pilot Valve 31A2AV20+BDA (see 31A catalogue page)
- ▶ Together with male thread nipple male 1/4"-1/4"
- Position indicator
- Double Effect
- ▶ Water piloting system

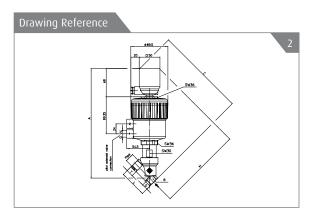




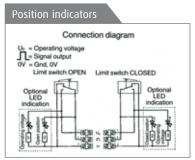


INSTALLATION

- ▶ The solenoid valves can be mounted in any position
- Maintenance and instruction sheet available in each solenoid valve box



Dimensio	maie rabie							
Figure	Pipe	A mm	B mm	C mm	D mm	H mm	L mm	T mm
	1/2"	206,8	SW 27	178,7	15,4	163,3	65	17
	3/4"	211,7	SW 32	188,6	21,9	166,7	75,5	19
1-2	1″	220,1	SW 41	197,8	25,1	172,7	90	21
1 2	1 1/4"	235,9	SW 50	212,3	28,5	183,8	110	24
	1 1/2"	238,9	SW 55	217,0	31,0	186	122	25,2
	2"	247,8	SW 70	229,7	37,5	192,2	151	28,5



21IA-5 N.C.



FEATURES

- Angle seat for high flow rate configuration
 Long life cycles
 Flow below and above the the piston
 Service free solution
 Water hammer

CE



21IA	4	T	15		G	С	1	-5
Model valve	4= G 1/2		15 20 25	Orefice 10 ⁻¹ mm	G = GAS	C = N.C.	Actuator connection	Pilot version Ø 50
	5 = G 3/4	T= PTFE						
	6= G 1		23					

PIPE	Ø (mm)	Kv (I/min)	ACTUATOR PILOT PRESSURE (bar)		DIFFERENTIAL PRESSURE (bar)		MAX ALLOWABLE PRESSURE	GAS CODE	WEIGHT	DRAWING - REFERENCE
			min	max	min	max	PS (bar)		kg	NEI EREI VEE
G 1/2	15	80	5	8	0	25	40	21IA4T15GC1-5	1,6	1
G 3/4	20	150	5	8	0	15	40	21IA5T20GC1-5	1,7	1
G 1	25	190	5	8	0	10	40	21IA6T25GC1-5	2,1	1

TECHNICAL SPECIFICATION

▶ VALVE FEATURES

Fluid Temperature: -10°C +180°C Environment temperature: -10°C +60°C Material: Stainless Steel AISI 316 series

Seal: PTFE

Packing gland: PTFE, FKM
▶ PILOT ACTUATOR FEATURES

Media: Dry Air or lubrificated, gas and neutral fluids

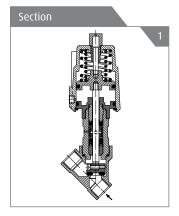
Fluid Temperature: max +60°C

Body: Aisi 316 NBR Gaskets Actuator Ø 50

Self adjusting Teflon seat

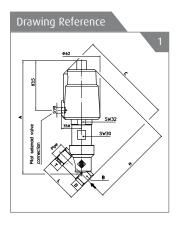
AVAILABLE ON REQUEST

- ▶ Pilot Valve 31A3AV20+BDA (see 31A catalogue page)
- ▶ Together with male thread nipple male 1/4"-1/4"
- Position indicator
- ▶ Water piloting system



INSTALLATION

- ▶ The solenoid valves can be mounted in any position
- Maintenance and instruction sheet available in each solenoid valve box



Dim	000		ملم	TA	LI.
וווט	ens	IOI	ıale	: Id	uie

Figure	Pipe	A mm	B mm	C mm	D mm	H mm	L mm	T mm
	G 1/2	190,6	SW 27	156	15,4	139,7	65	17
1-2	G 3/4	190,8	SW 32	162	21,4	139,8	75	19
	G 1	200,3	SW 41	168	25	146,6	90	20,5





ACCESSORIES

▶ P992087

▶ P992219

▶ P990305-P992257

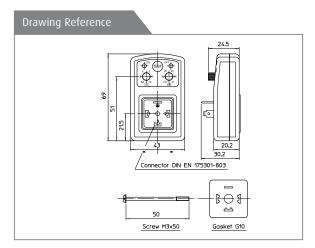
page 112

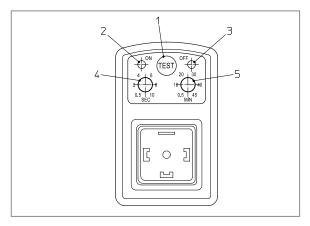
" 113

" 114-115









FEATURES

The condensate removal timer is a plug-on controller specially design for drain valves. The unit offers an easy time cycle programming. The draining time can be set with the "ON" trimmer between 0.5 and 10 seconds. The "OFF" trimmer allows to adjust the delay time between two draining cycles from 0.5 to 45 minutes. The unit is ready to control the valve as soon as the power is switched on.

The ON/OFF sequence will be repeated so long as the unit is fed.

Two LEDS indicate the output status. A "TEST" button is provided to check
the cycle settings and to restart the control sequence from the output status "ON".

USE

- ▶ Condensate drainage system
- ▶ Timed systems

TECHNICAL SPECIFICATION

- ▶ Supply voltage: 24 to 240V AC/DC±10% 50/60Hz
- ▶ Output voltage: same as supply voltage
- ▶ Load current: max.1A
- ▶ Standby current: 8mA max
- ▶ Operating temp. range: -40°C to +60°C
- ▶ Connector: EN 175301-803 / ISO 4400
- Environmental protection: IP65 (assembled with delivered gaskets)
- ▶ Housing dimensions: 69 x 43 x 21mm
- On time: 0.5 to 10 seconds
- ▶ Off time: 0.5 to 45 minutes
- ▶ Scale accuracy: ±10%
- ▶ Indicators: Green LED On phase; Red LED – Off phase.

MATERIALS

- ▶ Shell: ABS-PA 765
- ▶ Gasket: NBR (nitrile)
- Description:
 - 1. Push-button TEST
 - 2. Green Led not supplied:output power
 3. Red Led load supplied: output power
 4. Trimmer "ON": regulation time "ON"
 - 4. Trimmer "ON": regulation time "ON"
 5. Trimmer "OFF": pause time regulation "OFF"

AVAILABLE ON REQUEST

- ▶ Connectors for SV (to be order separately)
- ▶ Pg 9 (6÷8mm) or Pg 11(8÷10mm)
- In the near future available also with UL approval.
- ▶ In accordance with RoHS.







FEATURES

Cable glands for unarmoured cable, outer seal The sealing ring seals and bloks cable on the outer sheath Ambient temperature

E =EPDM - 40°C + 100°C

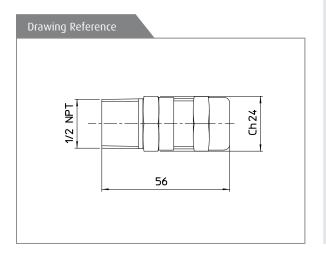
S=VMQ - 70°C + 220°C IP 66/68

Protection degree

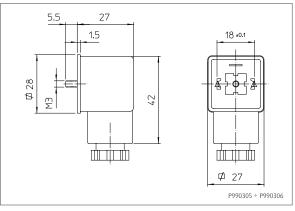
For indoor and autdoor applications Group II, category 2D, Zone 21, 22 presence of combustible dust zone Group II, category 2D, Zone 1, 2 presence of explosive gas atmospheres

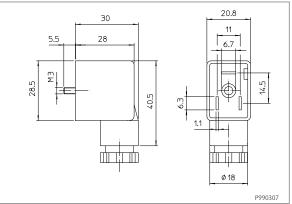
(Conforme to Atex Directive 94/9/CE ATEX) I M2 / II 2 GD IIC





P990305 - P992257





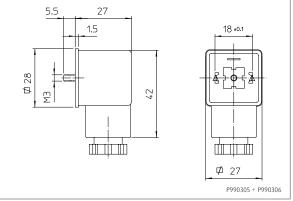
On demand also available with UL approval and for quantity



h6/12

P990322÷ P990525





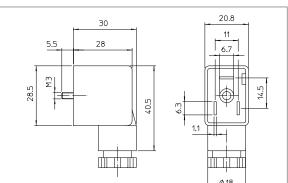












Figure	Cable Lenght (L)	A cm
P990322	53	5
P990481	65	5
P990407	75	5
P990525	105	18
P990420	110	7,5
P990403	150	5
P990408	210	5
P990463	250	5

40.5

P990305 ÷ P990306 CODE **COMPATIBLE COILS:** BD.. - GD.. - UD P990307 CODE **COMPATIBLE COILS:** LB..

SPARE PARTS:

EN 175301-803 2 + Standard: Number of contacts:

AC max 250V Supply voltage: DC max 300V

10 A Operating current: Max current: 16 A Contact resistance: ≤4 m0hm Max conductor section: 1,5 mm² PA (Polyamide) Housing:

Cable entry:

Code P990305 Pg 09 Code P990307 Pg 09 Code P990306 Pg 11

Cable diameter: Pg 09 (6÷8 mm) Pg 11 (8÷10 mm)

Protection class: IP 65 EN 60529 Insulation class: VDE 0110-1/89 Sealing: NBR -40°C +90°C

CODE 990322 ÷ P990525 COMPATIBLE COILS: BD.. - GD.. - HD.. - UD..

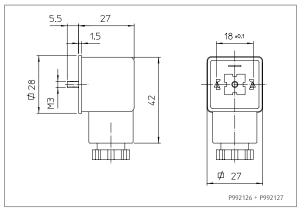
SPARE PARTS:

Standard: EN 175301-803 2 + Number of contacts:

Max voltage: Max 250V Housing: PP (Polypropylene)

Max current: 5A Contact resistance: ≤4 m0hm 1 ,5 mm² Max conductor section: IP 65 EN 60529 Protection class: Insulation class: VDE 0110 -1/89

Connector for electronic connections















CODE 992126 ÷ P992127 **COMPATIBLE COILS:** BD.. - GD.. - UD

SPARE PARTS:

Standard: EN 175301-803 Number of contacts: 2 +

Supply voltage: AC max 250V DC max 300V

Operating current: 10 A Max current: 16 A Contact resistance: ≤4 m0hm Max conductor section: 1,5 mm² PA (Polyamide) Housing:

Cable entry:

CODE

COMPATIBLE COILS:

SPARE PARTS: Standard:

Code. P992126 Pg 09 Code. P992127

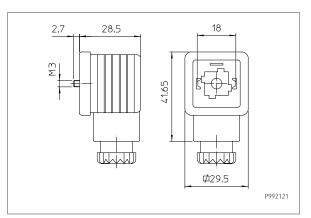
Pg 11 Pg 09 (6÷8 mm) Cable diameter:

Pg 11 (8÷10 mm) Protection class: IP 67 EN 60529 Insulation class: VDE 0110-1/89 Sealing: NBR -40°C +90°C

992121

BD.. - GD..

EN 175301-803













2 + Number of contacts: Supply voltage: Max 250V Operating current: 10 A

Max current: 16 A ≤4 m0hm Contact resistance: Max conductor section: 1,5 mm² Housing: PA (Polyamide) Pg 09 - Pg 11 Cable entry: Cable diameter: 6÷10 mm IP 65 EN 60529 Protection class: Sealing: NBR -40°C +90°C

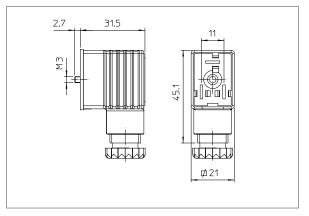


CODE

(Conforme to Atex Directive 94/9/CE ATEX)

992257

113GD













COMPATIBLE COILS: LB..

SPARE PARTS:

EN 175301-803 Standard: 2 + Number of contacts:

Supply voltage: Max 250V Operating current: 10 A Max current: 16 A ≤4 m0hm Contact resistance: Max conductor section: 1,5 mm² Housing: PA (Polyamide) Cable entry: Pg 09 Cable diameter: 6÷10 mm IP 65 EN 60529 Protection class: WMQ -40°C +90°C Sealing:



(Conforme to Atex Directive 94/9/CE ATEX)

II 3GD



COILS

▶ BDA-BDV-BSA-BVA	page	118-119
▶ BDV08024C3 ÷ BDV08230A3	"	120
▶ GDH-GDV	"	121
► GDV14024C3 ÷ GDV14230A3	"	122
▶ LBA-LBF-LBV	"	123
► LBV05024A3 ÷ LBV05230A3	"	124
▶ UDA-UDV	"	125
► TNA4X024D4 ÷ TNA10024C4	"	126-127



BDA-BDV-BSA-BVA

BDA Coil housing material: PA - Black polyamide - class F (155°C)
 BDV Housing material: PET - Black polyethylene - class H (180°C)
 Winding: In class H

Electrical connections: With connector EN 175301-803 paragraph 5.3.1 Protection degree IP 65 EN 60529 (DIN 40050)

NOMINAL VOLTAGES TOLERANCES: DC +10% -5%; AC +10% -15%

BSA With cm 100 cable PA - Black Polyamide - class F (155°C)

BVA With cm 50 cable Winding: In class H

Electrical connections: Cables

NOMINAL VOLTAGES TOLERANCES: DC +10% -5%; AC +10% -15%



CE VDE W CFU'US

CODE	POWE	POWER [VA]		FREQUENCY [Hz]	ED [%]	AMBIENT	APPROVALS	DRAWING
CODE	Inrush	Holding	VOLTAGE [V]	FREQUENCY [HZ]	נט [ייט]	TEMPERATURE	APPROVALS	REFERENCE
AC Coils								
BDA08012AS	14,5	25	12 ~	50	100	-10°C +40C°	CE	1
BDA08024DS	14,5	25	24 ~	50/60	100	-10°C +40C°	CE	1
BDA08110DS	14,5	25	110 ~	50/60	100	-10°C +40C°	CE	1
BDA08223DS	14,5	25	220/230 ~	50/60	100	-10°C +40C°	CE	1
BDA08380DS	14,5	25	380 ~	50/60	100	-10°C +40C°	CE	1
BDV08024DY	17	25	24 ~	50/60	100	-20°C +60C°	CE - UL - CSA - VDE	1
BDV08110AY	15	25	110 ~ 120 ~	50 60	100	-20°C +60C°	CE - UL - CSA - VDE	1
BDV08230AY	16	25	230 ~ 240 ~	50 60	100	-20°C +40C°	CE - UL - CSA - VDE	1
BSA08223DS	14,5	25	220/230 ~	50/60	100	-10°C +40C°	CE	2
BVA08223DS	14,5	25	220/230 ~	50/60	100	-10°C +40C°	CE	2

CODE	POWER [W]	VOLTAGE [V]	ED [%]	AMBIENT TEMPERATURE	APPROVALS	DRAWING REFERENCE
DC Coils						
BDA08012CS	8	12	100	-10°C +40C°	CE	1
BDA08024CS	8	24	100	-10°C +40C°	CE	1
BDV08024CY	11	24	100	-20°C +60C°	CE - UL - CSA - VDE	1
Latching Coils						
BDA1X004LS	1,5	4,5	-	-10°C +40C°	-	3
BDA2X006LS	2,5	6	-	-10°C +40C°	-	3
BDA05009LS	5	9 ==	-	-10°C +40C°	-	3
BDA1X006LS	1,5	6 ==	-	-10°C +40C°	-	3
BDA2X009LS	2,5	9 ==	-	-10°C +40C°	-	3
BDA05012LS	5	12 ==	-	-10°C +40C°	-	3
BDA1Z009LS	1,5	9 ==	-	-10°C +40C°	-	3
BDA2X012LS	2,5	12 ==	-	-10°C +40C°	-	3
BDA10024LS	10	14	-	-10°C +40C°	-	3
BDA1X012LS	1,5	12	-	-10°C +40C°	-	3
BDA05024LS	5	24	-	-10°C +40C°	-	3
BDV08012CY	11	12 ==	100	-20°C +60C°	CE - UL - CSA - VDE	1

Other voltages and power absorptions available on demand and for quantities.

Latching coils

BDA Coil housing material: Black polyamide - class F (155°C)

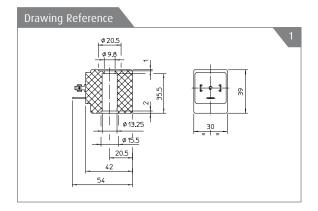
Winding: In class H

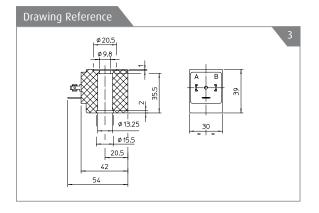
Electrical connections: With connector EN 175301-803 paragraph 5.3.1 Protection degree IP 65 EN 60529 (DIN 40050)

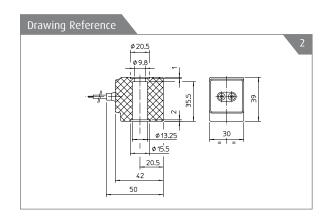
NOMINAL VOLTAGES TOLERANCES: DC +10% -5%

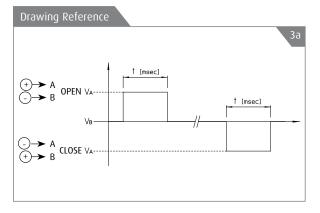
TECHNICAL OPERATING DATA:

- Impulse feed from 4,5 to 24 Volts for a period lasting from 20 to 100 ms (see fig.3a). **NOTE:** To ensure correct operation the fluid should be filtered to eliminate all traces of impurity subject to magnetic attraction, which would inevitably deposit on the cores of the solenoid valve, which are always magnetized, causing the formation of oxide as well as contact problem.



















BDV Coil housing material: PET - Black polyethylene - class H (180°C) Winding: In class H

Electrical connections: With connector EN 175301-803 paragraph 5.3.1 Protection degree IP65 EN 60529 (DIN 40050)

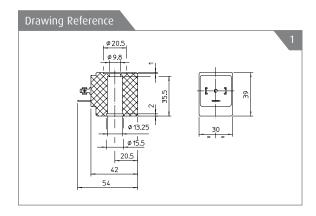
NOMINAL VOLTAGES TOLERANCES: DC +10% -5%; AC +10% -15%

(According to Directive 94/9/CE ATEX) II 3G Ex nA IIC T3 Gc II 3D Ex tc IHC T200°C Dc IP65



CODE	POWE	POWER [VA]		FREQUENCY [Hz]	ED [%]	AMBIENT	APPROVALS	DRAWING
CODE	Inrush	Holding	VOLTAGE [V]	TREQUENCT [112]	[[%]	TEMPERATURE	, ALTROVALS	REFERENCE
AC Coils								
BDV08024D3	14,5	25	24 ~	50/60	100	-20°C +80C°	-	1
BDV08110A3	14,5	25	110 ~ 120 ~	50 60	100	-20°C +80C°	-	1
BDV08240A3	14,5	25	220 ~ 230 ~	50 60	100	-20°C +80C°	-	1

CODE	POWER [W]	VOLTAGE [V]	ED [%]	AMBIENT TEMPERATURE	APPROVALS	DRAWING REFERENCE			
DC Coils									
BDV08024C3	8	24	100	-20°C +80C°	-	1			



The coil to comply Atex protection category mentioned above will be supplied only with connector ATEX type Ex II 3GD IP65. ODE code has to be ordered separately: 992221 Available on request and with minimum quantities.

GDH-GDV COILS 52 mm x Ø 13 mm



GDH Coil housing material: EP - Black epoxy resin - class H (180°C)
GDV Housing material: PET - Black Polyethylene - class H (180°C)
Winding: In class H

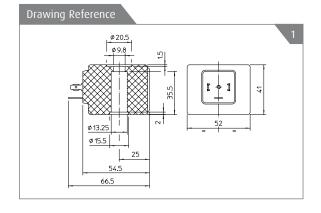
Electrical connections: With connector EN 175301-803 paragraph 5.3.1 Protection degree IP 65 EN 60529 (DIN 40050)

NOMINAL VOLTAGES TOLERANCES: DC + 10% - 5%; AC + 10% - 15%

CE VDE W CFU'US

CODE	POWER [VA]		· VOLTAGE [V]	FREQUENCY [Hz]	ED [%]	AMBIENT	APPROVALS	DRAWING	
CODE	Inrush	Holding	VOLIAGE[V]	TREQUENCY [112]		TEMPERATURE	ATTROVALS	REFERENCE	
AC Coils	•								
GDH14024DS	27	43	24 ~	50/60	100	-20°C +40C°	CE	1	
GDH14110DS	27	43	110 ~	50/60	100	-20°C +40C°	CE	1	
GDH14223DS	27	43	220/230 ~	50/60	100	-20°C +40C°	CE	1	
GDV14024DY	26	43	24 ~	50/60	100	-20°C +60C°	CE - UL - CSA - VDE	1	
GDV14110AY	23	43	110 ~ 120 ~	50 60	100	-20°C +60C°	CE - UL - CSA - VDE	1	
GDV14230AY	27	43	220 ~ 240 ~	50 60	100	-20°C +60C°	CE - UL - CSA - VDE	1	

CODE	POWER [W]	VOLTAGE [V]	ED [%]	AMBIENT TEMPERATURE	APPROVALS	DRAWING REFERENCE
DC Coils						
GDH14024CS	14	24	100	-20°C +40C°	CE	1
GDV14024CY	14	24	100	-20°C +60C°	CE - UL - CSA - VDE	1













GDV Coil housing material: PET - Black polyethylene - class H (180°C) Winding: In class H

Electrical connections: With connector EN 175301-803 paragraph 5.3.1 Protection degree IP65 EN 60529 (DIN 40050)

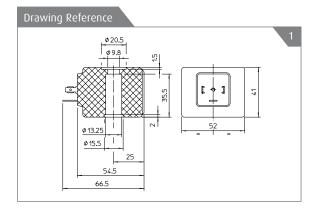
NOMINAL VOLTAGES TOLERANCES: DC +10% -5%; AC +10% -15%

(According to Directive 94/9/CE ATEX) II 3G Ex nA IIC T3 Gc II 3D Ex tc IHC T200°C Dc IP65



CODE	POWI	POWER [VA]		FREQUENCY [Hz]	ED [%]	AMBIENT	APPROVALS	DRAWING
CODE	Inrush	Holding	VOLTAGE [V]	rkegoerter [nz]	[[%]	TEMPERATURE	ALT ROVALS	REFERENCE
AC Coils								
GDV14024D3	27	43	24 ~	50/60	100	-20°C +80C°	-	1
GDV14110A3	27	43	110 ~ 120 ~	50 60	100	-20°C +80C°	-	1
GDV14230A3	27	43	230 ~ 240 ~	50 60	100	-20°C +80C°	-	1

	CODE	POWER [W]	VOLTAGE [V]	ED [%]	AMBIENT TEMPERATURE	APPROVALS	DRAWING REFERENCE			
(DC Coils									
	GDV14024C3	14	24	100	-20°C +80C°	-	1			



LBA-LBF-LBV COILS 22 mm x Ø 10 mm





LBA Coil housing material: PA - Black polyamide - class F (155°C) **LBF** Coil housing material: PPS - Black poliphenylensulphide - class H (180°C)

Coil housing material: PET - Black Polyethylene - class H (180°C)

Winding: In class H

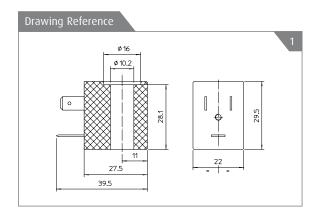
Electrical connections: With connector EN 175301-803 whellbase 11 Protection degree IP 65 EN 60529 (DIN 40050)

NOMINAL VOLTAGES TOL ERANCES: DC +10% -5%; AC +10% -15%

CE VDE W CFU'US

CODE	POWER [VA]		VOLTAGE [V]	FREQUENCY [Hz]	ED [%]	AMBIENT	APPROVALS	DRAWING
CODE		Holding	VOLIAGE[V]	TREQUENCY [112]	[[70]	TEMPERATURE	ALLKOVALS	REFERENCE
AC Coils								
LBA05024AS	10	15	24 ~	50	100	-10°C +40C°	CE	1
LBA05230AS	10	15	230 ~	50	100	-10°C +40C°	CE	1
LBF05024BU	10	15	24 ~	60	100	-10°C +40C°	CE - UL	1
LBV05024AV	11,5	15	24 ~	50	100	-20°C +60C°	CE - VDE	1
LBV05024BW	12,5	15	24 ~	60	100	-20°C +60C°	CE - UL - CSA	1
LBV05110AY	10	15	100 ~ 120 ~	50 60	100	-20°C +60C°	CE - UL - CSA - VDE	1
LBV05110BU	13,5	15	110 ~	60	100	-20°C +40C°	CE - UL	1
LBV05220BU	13,5	15	220 ~	60	100	-20°C +40C°	CE - UL	1
LBV05230AY	11,5	15	230 ~ 240 ~	50 60	100	-20°C +60C°	CE - UL - CSA - VDE	2

CODE	POWER [W]	VOLTAGE [V]	ED [%]	AMBIENT TEMPERATURE	APPROVALS	DRAWING REFERENCE
DC Coils						
LBA050024CS	5	24	100	-10°C +40C°	CE	1
LBV05024CY	7	24	100	-20°C +60C°	CE - UL - CSA - VDE	1
LBV08024HU	10	24	50 (1)	-20°C +40C°	CE - UL	1













Electrical connections: With connector EN 175301-803 whellbase 11 Protection degree IP65 EN 60529 (DIN 40050)

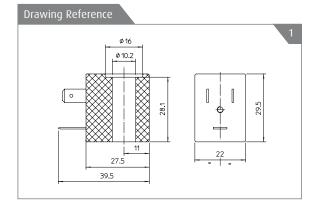
NOMINAL VOLTAGES TOLERANCES: DC +10% -5%; AC +10% -15%

(According to Directive 94/9/CE ATEX)
II 3G Ex nA IIC T3 Gc
II 3D Ex tc IHC T200°C Dc IP65



CODE	POWER [VA]		· VOLTAGE [V]	FREQUENCY [Hz]	ED [%]	AMBIENT	APPROVALS	DRAWING
CODE	Inrush	Holding	VOLINGLIVI	INGLEV TREQUENCY [112]		TEMPERATURE	ALLKOVALS	REFERENCE
AC Coils								
LBV05024A3	10	15	24 ~	50	100	-20°C +80C°	-	1
LBV05204B3	10	15	24 ~	60	100	-20°C +80C°	-	1
LBV05110A3	10	15	110 ~ 120 ~	50 60	100	-20°C +80C°	-	1
LBV05230A3	10	15	230 ~ 240 ~	50 60	100	-20°C +80C°	-	1

CODE	POWER [W]	VOLTAGE [V]	ED [%]	AMBIENT TEMPERATURE	APPROVALS	DRAWING REFERENCE
DC Coils						
LBV05024C3	5	24	100	-20°C +80C°	-	1



UDA-UDV COILS 36 mm x Ø 13 mm





UDA Coil housing material: PA - Black polyamide - class F (155°C)
UDV Coil housing material: PET - Black Polyethylene - class H (180°C)
Winding: In class H

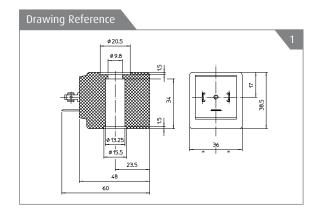
Electrical connections: With connector EN 175301-803 paragraph 5.3.1 Protection degree IP 65 EN 60529 (DIN 40050)

NOMINAL VOLTAGES TOLERANCES: DC +10% -5%; AC +10% -15%

CE VDE W c TU us

CODE	POWE	R [VA]	VOLTAGE [V]	FREQUENCY [Hz]	ED [%]	AMBIENT	APPROVALS	DRAWING REFERENCE
CODE	Inrush	Holding	VOLIAGE[V]	TREQUENCY [112]	[[40]	TEMPERATURE	AFFROVALS	
AC Coils								
UDA12024AS	23	35	24 ~	50	100	-20°C +40C°	CE	1
UDA12110DS	23	35	110 ~	50/60	100	-20°C +40C°	CE	1
UDA12230AS	23	35	230 ~	50	100	-20°C +40C°	CE	1
UDA12112DW	23	35	110/120 ~	50/60	100	-20°C +40C°	CE - UL - CSA	1
UDA12230DW	25	35	230 ~	50/60	100	-20°C +40C°	CE - UL - CSA	1

CODE	POWER [W]	VOLTAGE [V]	ED [%]	AMBIENT TEMPERATURE	APPROVALS	DRAWING REFERENCE
DC COII3						
UDA12024CS	12	24	100	-20°C +40C°	CE	1





TNA4X024D4 ÷ TNA10024C4



TNA Coil housing material: PPS - Black polyphenylensulphide - class H (180°C) **Winding:** In class H

Electrical connections: Three-pole cable Ø 1,5 lenght cm 300 PTB 03 ATEX 2086 X Protection degree IP 65 EN 60529 (DIN 40050)

NOMINAL VOLTAGES TOLERANCES: ±10%

(According to Directive 94/9/CE ATEX) II 2G Ex mb IIC Gb II 2D Ex mb tb IIIC t130 $^{\circ}$ C Db





CODE	POWER [VA]	VOLTAGE [V]	FREQUENCY [Hz]	RATE CURRENT FUSE	DRAWING REFERENCE
TNA4X024D4	7,2	24 ~	50/60	315 mA	1
TNA5X110D4	9,13	100 ~	50/60	83 mA	1
TNA05224D4	7,7 - 9,24	220-240 ~	50/60	35-39 mA	1

CODE	POWER [W]	VOLTAGE [V]	RATE CURRENT FUSE	DRAWING REFERENCE
DC Coils				
TNA10024C4	10,1	24	421 mA	1

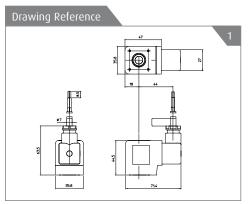
ELECTROMAGNET 36 mm x Ø 14,5 mm for potentially explosive construction Ex mb II T4

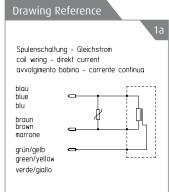
The coils must be protected with an external fuse that has characteristics as per table.

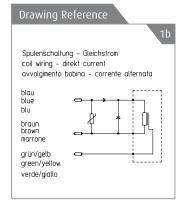
AMBIENT TEMPERATURE: -20°C +50°C **FLUID MAX TEMPERATURE:** +80°C

ТҮРЕ		TNA					
111 L		IIVA					
CURRENT		AC		DC			
AMBIENT TEMPERATURE SIGLE ASSEMBLY MANIFOLD ASSEMBLY		-20°C +50C° -20°C +50C°		-20°C +50C° -20°C +50C°			
MAX. MEDIA TEMPERATURE		80°C		80°C			
MANIFOLD ASSEMBLY MIN. DISTANCE		YES 0 mm		YES 0 mm			
RATED VOLTAGE U _N [V]	RATED CURRENT ¹⁾ I _N [mA]	RATED POWER ^P N [VA]	FUSE ²⁾ [mA]	RATED CURRENT ¹⁾ I _N [mA]	RATED POWER ^P N [W]	FUSE ²⁾ [mA]	
24	315	7,2	800	421	10,1	800	
110	83	9,1	200	76	8,4	160	
115	70 8,1 200			-	-	-	
120	72 8,6 200			-	-	-	
220	35 7,7 100			43	9,5	100	
230	37	8,5	100	-	-	-	
240	39	9,2	100				

- 1) Current dimension
- 2) Each solenoid operator has to be protected by a fuse according to the rated current (max. 3x rated current accord. DIN 41571 or IEC 60127-2-1) resp. Motor protection switch short circuit and fast thermal tripping protection. The fuse can be accommodated in the associated device or must be added separately. The fuse voltage has to be equal or higher than the rated solenoid voltage. The shutdown capability has to be equal or higher than the max. assumed short-circuit current at the installation point (usually 1500A).











▶ PX50

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PX50 Series

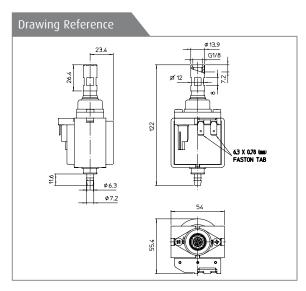




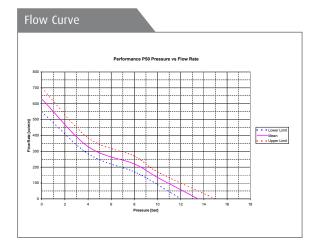








Note: Continuous dry-run would damage the unit permanently



APPLICATION

- Coffee Machines
- ▶ Floor Cleaning Machines
- Steam Ironing Stations

SPECIFICATION

▶ Outlet G 1/8 15 bar Pressure

▶ Fluids Tap Water/Distilled Water

Max Ambient Temperature 35°C Max Fluid Temperature 35°C

Dead Head Pressure See Performance Chart ▶ Free Flow Rate See Performance Chart

▶ Power Consumption (max.) 53W

Operating Voltage 100Vac 50Hz/60Hz (JET)

120Vac 60Hz (UL) 230Vac/50Hz (VDE) 1.0 min ON, 1 min OFF

Working cycle

Not require External Type Diode

▶ Coil Insulation Class F (155°C)

Class H (180°C) depending on voltage

6.3mm x 0.8mm Faston type ▶ Terminals ▶ Endurance 18.000 cycles (at 8-10 bar) (base on 1 min ON, 1 min OFF)

▶ Coil Encapsulation 750°C GWI

MATERIALS

▶ Plunger Stainless Steel Spring Stainless Steel ▶ No return valve Sintetic Rubber ▶ Seal NBR or equivalent PA66 Based Plastics Plastic parts

CERTIFIED BY

- ▶ CE
- ▶ NSF
- ▶ UL 778
- ▶ VDE (IEC 60335-1, 60335-2-41)

Proven sealing system for reliable and long life application

Ordering part number: P992124-AP (230V 50Hz) P992182-AP (120V 60Hz)





ISO 9001:2008 Quality Management System Certification

ISO 9001 identifies a series of norms and guidelines developed by ISO to provide a system of process quality control, aimed to improving effectiveness and efficiency of the organization with the goal of customer satisfaction. Bureau Veritas certified that the ODE Management System has been audited and found to be in accordance with the requirements of the management system standards of ISO 9001. This certification has been obtained by ODE since September 1997. The ISO 9001:2008 certification is available on website.



ISO 14001:2004 Environment Management System Certification

ISO 14001 provides practical tools for companies and organizations looking to identify and control their environmental impact and constantly improve their environmental performance. Bureau Veritas certified that the ODE Management System has been audited and found to be in accordance with the requirements of the management system standards of ISO 14001. The ISO 14001:2004 certification is available on website.



OHSAS 18001:2007 Health and Safety Management System Certification

OHSAS 18001 is an international standard that ensures organizations to define their occupational health and safety policies and objectives. It enables better control of hazards from normal operations and unusual situations. Bureau Veritas certified that the ODE Management System has been audited and found to be in accordance with the requirements of the management system standards of OHSAS 18001. The OHSAS 18001:2007 is available on website.



WMT Laboratory Certification

The authorization to operate in WMT (Witnessed Manufacturer's Testing), it allows to perform tests valid for the product certification, under the IMQ inspectors supervision. With this new certification the ODE laboratory is authorized to perform product test under the IMQ supervision, greatly accelerating the product development process in order to obtain an additional advantage for the end user. The WMT certification is available on website.



UL – UL CSA Component Approval

The Component Mark UL "Recognised" is used for components that are part of a larger assembly or installation. The ODE solenoid valve range includes coils approved both UL and UL CSA for Canadian market. The UL - UL CSA Approval is available on website.



NSF Product Approval

The NSF certification mark on a product means that the product complies with all standard requirements for food safety. The ODE range includes solenoid valves approved NSF for food grade fluids compatibility.

The NSF product approval is available on website.



PED 97/23/CE Declaration

PED (Pressure Equipment Directive) is applied to the design, manufacturing, inspection and testing of pressure equipment. In this statement ODE declares, under its own responsibility, that its solenoid valves are designed, constructed, inspected and tested in accordance with Directive 97/23/CE. For the PED declaration please contact our Customer Service at sales@ode.it.



VDE Approval

The Verband Deutscher Elektrotechniker is the Association for Electrical, Electronic and Information Technologies and their related sciences, technologies and applications. The ODE solenoid valve range includes coils VDE certificated. VDE approval is available on VDE website to the link reported in the certifications webpage of download area.



REACH Declaration

The new REACH (Registration, Evaluation and Authorization of Chemicals) is aimed to regulate companies that handle more than 1 ton/year of chemical substances (raw material and end product, such as cosmetics, household products, etc...) in Europe. This regulation will have a significant impact on importers and manufacturers. In this declaration ODE informs that such products defined as "Articles" are in accordance with the European Regulation n. 2006/1907/EC. For the REACH declaration please contact our Customer Service at sales@ode.it.



RoHS Directive

European Directive 2011/65/UE (Restriction of Hazardous Substances Directive) adopted since February 2003. The directive is aimed to restrict the use of certain hazardous substances in electrical and electronic equipment. In this statement it declares that the solenoid valves and the components supplied by ODE are in accordance to the EU Directive 2011/65/EU. For the RoHS declaration please contact our Customer Service at sales@ode.it.



ATEX Directive

ODE solenoid valve range also includes some product lines and their protective system with ATEX certification, intended for use in potentially explosive atmospheres as per Directive 94/9/EC. The Atex Ex d and Ex m certificates and the Ode declaration for Ex nA type of protection are available on website in the certifications webpage of download area.



CE Declaration of Conformity

In this declaration ODE informs that all its coils for solenoid valves comply with the Standards and Directives:

EN 60730-1, EN 60335-1 Low Tension Directive 2006/95/CE European Directive 2011/65/CE.

Moreover it declares that the solenoid valves whose coil code starts with (series identification) L-B-G-H-I-M-T-U, characterized by the following supply voltages: from 6V to 24V DC, from 6V to 240V AC 50-60Hz, comply with the European Directive 2004/108/CE (EMC)

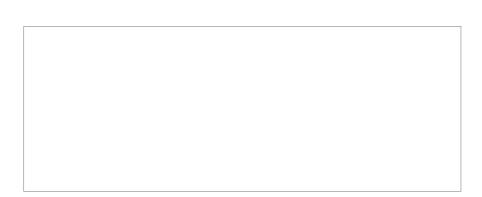
and with the requirements described in the following standards: EN 61000-6-2 : 2005-08, EN 61000-6-3 : 2007-11 EN 61000-3-2 : 2006-04, EN 61000-3-3 : 2008-09

limited to what is considered applicable to this kind of product. The CE Declaration of Conformity is available on website in the certifications webpage of download area.









ODE S.r.l.

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