OPKON®

Sense the motion

Linear Rotary Position Sensors

General Catalogue 2015

www.opkon.com.tr

OPKON Optic Electronic Ltd. established in 1993 in İstanbul / Turkey by Electronic Engineer Mustafa Kenan Özeren.
Company philosphy is, developing, designing and manufacturing electronic sensors and devices, with Euorpean quailty, and distribute all over the world.
OPKON Ltd. has all R&D, and manufacturing facilities in İstanbul, which has 1400 sq meter production area, 55 technicians and engineers with many years experiance. Company is certified with ISO 9001-2008.

OPKON Production Portfolio :

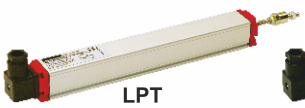
- Linear Potentiometers,
  - Standart Series,
  - Electronic conditioner curcuit (0-10V,0-20mA,4-20mA) series,
  - Slim body series,
  - Ultra slim body series,
- Draw Wire Potentiometers,
- Contactless Magnetostrictive position sensors,
- Optic Rotary Incremental Encoders,
- Magnetic Rotary Incremental / Absolute Encoders,
- Draw Wire Encoders,
- Voltage output, absolute encoders,
- Magnetic reader heads, magnetic tapes,
- Press brake scales,
- Panel type measurement and control equipments,

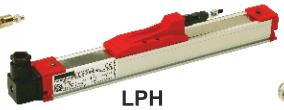
OPKON production portfolio covers very wide range of industry, such as;

- Plastic / Metal Injection Moulding,
- Textile,
- Marble / Stone,
- Packing,
- Printing,
- Wood Processing,
- Press Brakes,
- Roll Bending,
- Metal Cutting / Forming,
- Elevator,
- Profile and Metal Processing,
- Cranes / Lift,
- Hydraulic Press,
- Medical,
- General Automation Applications,

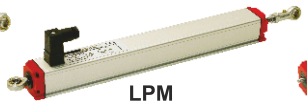
OPKON has sales network in 6 continent with 28 country official distributors.
Company exports to Germany, Italy, Spain, Portugal, Netherland, Greece, Bulgaria and other European community countries, Russia, USA, Canada, Brazil, Mexico, Argentina, South Africa, Middle east countries, India, China, Korea, Taiwan, Australia and others.

LINEAR POTENTIOMETERS / STANDARD SERIES


LPT


LPH

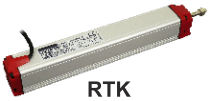

LPC


LPM


LPS

Linear Potentiometers Standard Series

LINEAR POTENTIOMETERS / RUBY SERIES


RTK


RTL


RTM

Linear Potentiometers Ruby Series

LINEAR POTENTIOMETERS / SLIM BODY SERIES


SLPT


LMT


SLPS

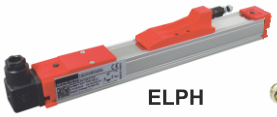

SLPC


SLPIS

Linear Potentiometers Slim Body Series

LINEAR POTENTIOMETERS / WITH CONDITIONER CIRCUIT


ELPT

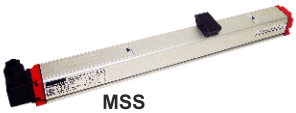

ELPH


ELPC


ELPM

Linear Potentiometers Conditioner Circuit

MAGNETOSTRICTIVE POSITION SENSORS


MSS

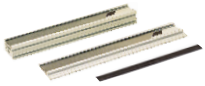

MSH


MST

Magnetostrictive Position Sensors

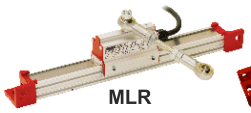
MAGNETIC INCREMENTAL LINEAR ENCODERS

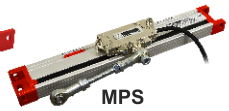

MLI


MT
MP1
MP2


MLC


MLIP


MLR


MPS

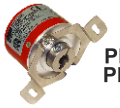
Magnetic Linear Incremental Encoders

OPTIC ROTARY INCREMENTAL ENCODERS


PRI 50R


PRI 50SH
PRI 50H


PRI 58AR
PRI 58BR


PRI 58SH
PRI 50H


PRI 100

Optic Rotary Incremental Encoders

MAGNETIC ROTARY ENCODERS


MRI 50
MRV 50
MRA 50


MRI 50F
MRV 50F


MRI 58

Magnetic Rotary Encoders

DRAW WIRE POTENTIOMETERS / ENCODERS


DWP


DWE

PRESSURE TRANSMITTER


OPT

MECHANICAL COUNTER

TP-MC

Draw Wire Potentiometers / Encoders

OPKON®

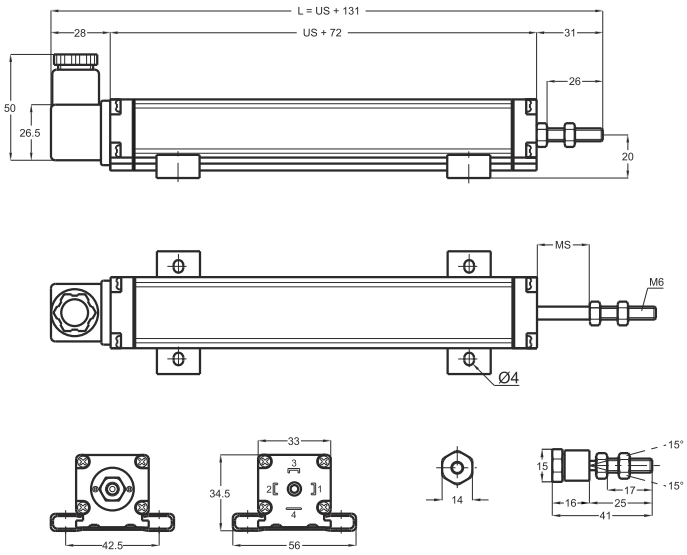
Sense the motion

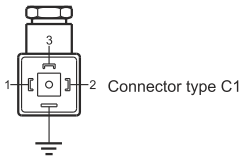
Linear potentiometers
Standard series

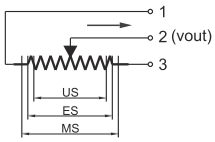
- Measuring range 30 - 1250 mm
- Long mechanical life 100 million cycles
- Excellent repeatability <0.01 mm
- Infinite resolution
- 5 KOhm or 10 KOhm

Technical specifications

Measurement stroke	30 to 1250 mm
Linearity	± %0,05
Repeatability	< 0.01 mm
Resolution	Infinite
Resistance	5 KOhm or 10 KOhm
Resistance tolerance	± %20
Load resistance	100 KOhm min.
Recommended cursor current	< 1 µA
Permissible applied voltage	28 VDC max.
Electrical connections	4 pin connector
Displacement speed	< 5 m/s
Mechanical life	100 million cycles
Case dimensions	33 mm x 33 mm
Case material	Anodized aluminium
Rod material	Stainless steel
Rod diameter	Ø6 mm
Mechanical fixing	Variable brackets
IP degree	IP 65
Operating temperature	-20°C ... +80°C
Storage temperature	-30°C ... +90°C







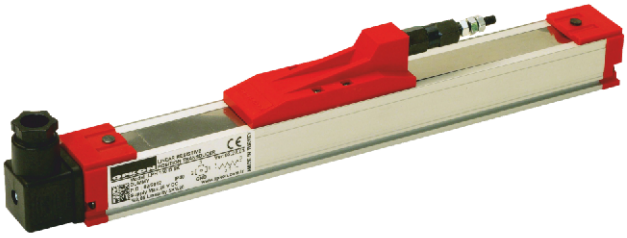
LPT (mm)	30	50	75	100	125	130	150	175	200	225	250	275	300	325	350	375	400	450	500	550	600	650	700	750	800	850	900	1000	1250
US (Usefull Stroke)	30	50	75	100	125	130	150	175	200	225	250	275	300	325	350	375	400	450	500	550	600	650	700	750	800	850	900	1000	1250
MS (Mechanical Stroke)	33	53	73	103	128	133	153	178	203	228	253	278	303	328	353	373	403	453	503	553	603	653	703	753	803	853	903	1003	1253
L (Total Length)	161	181	206	231	256	261	281	306	331	356	381	406	431	456	481	506	531	581	631	681	731	781	831	881	931	981	1031	1131	1381

Model	Measurement stroke (mm)	Linearity (%)	Resistance (KOhm)	Connector / Cable
(example) LPT	500	D	5K	C1
LPT	30 ... 1250 mm	D : ± %0,05 (standard)	5K : 5 KOhm 10K : 10 KOhm	C1 : 4 pin connector

LPH

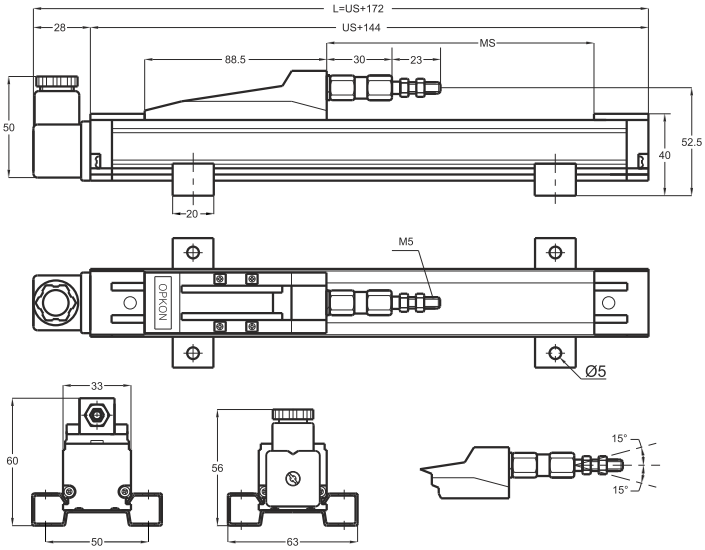
Linear potentiometers
Standard series

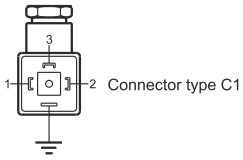
- Measuring range 100 - 1500 mm
- Long mechanical life 100 million cycles
- Excellent repeatability <0.01 mm
- Infinite resolution
- 5 KOhm or 10 KOhm

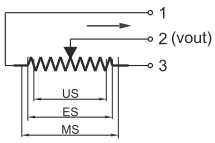


Technical specifications

Measurement stroke	100 to 1500 mm
Linearity	± %0,05
Repeatability	< 0,01 mm
Resolution	Infinite
Resistance	5 KOhm or 10 KOhm (20KOhm/1500 mm)
Resistance tolerance	± %20
Load resistance	100 KOhm min.
Recommended cursor current	< 1 µA
Permissible applied voltage	28 VDC max.
Electrical connections	4 pin connector
Displacement speed	< 1,5 m/s
Mechanical life	100 million cycles
Case dimensions	33 mm x 33 mm
Case material	Anodized aluminium
Mechanical fixing	Variable brackets
IP degree	IP 40 / If mounted upside down IP 53
Operating temperature	-20°C ... +80°C
Storage temperature	-30°C ... +90°C







LPH (mm)	100	125	130	150	175	200	225	250	275	300	325	350	375	400	450	500	550	600	650	700	750	800	850	900	1000	1250	1500
US (Usefull Stroke)	100	125	130	150	175	200	225	250	275	300	325	350	375	400	450	500	550	600	650	700	750	800	850	900	1000	1250	1500
MS (Mechanical Stroke)	104	129	134	154	179	204	229	254	279	304	329	354	379	404	454	504	554	604	654	704	754	804	854	904	1004	1254	1504
L (Total Length)	272	297	302	322	347	372	397	422	447	472	497	522	547	572	622	672	722	772	822	872	922	972	1022	1072	1172	1422	1672

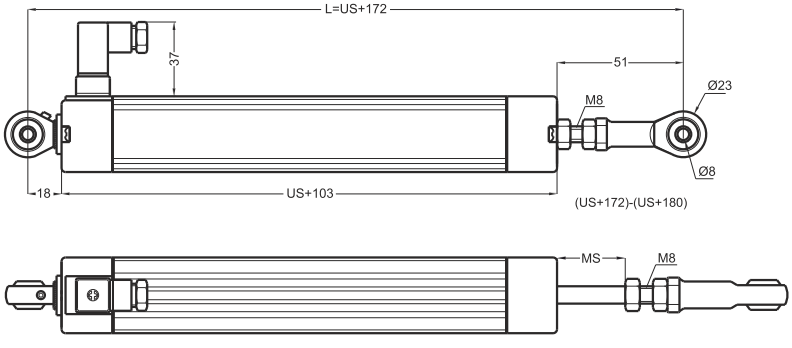
Model	Measurement stroke (mm)	Linearity (%)	Resistance (KOhm)	Connector / Cable
(example) LPH	500	D	5K	C1
LPH	100 ... 1500 mm	D : ± %0,05 (standard)	5K : 5 KOhm 10K : 10 KOhm 20K : 20 KOhm	C1 : 4 pin connector

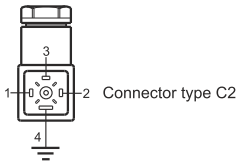
Linear potentiometers
Standard series

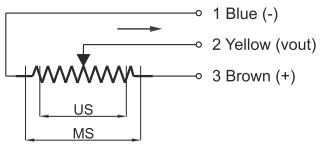
- Measuring range 50 - 700 mm
- Long mechanical life 100 million cycles
- Excellent repeatability <0.01 mm
- Infinite resolution
- 5 KOhm or 10 KOhm

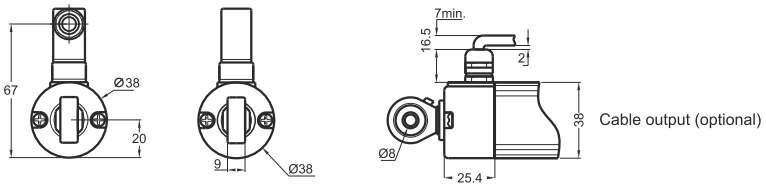
Technical specifications

Measurement stroke	50 to 700 mm
Linearity	± %0,05
Repeatability	< 0,01 mm
Resolution	Infinite
Resistance	5 KOhm or 10 KOhm
Resistance tolerance	± %20
Load resistance	100 KOhm min.
Recommended cursor current	<1 µA
Permissible applied voltage	28 VDC max.
Electrical connections	4 pin connector (standard)
Displacement speed	< 5 m/s
Mechanical life	100 million cycles
Case dimensions	Ø38 mm
Case material	Anodized aluminium
Rod material	Stainless steel
Rod diameter	Ø10 mm
Mechanical fixing	Ball joints on the both side
IP degree	IP 65
Operating temperature	-20°C ... +80°C
Storage temperature	-30°C ... +90°C









LPC (mm)	50	75	100	125	130	150	175	200	225	250	275	300	325	350	375	400	450	500	550	600	650	700
US (Usefull Stroke)	50	75	100	125	130	150	175	200	225	250	275	300	325	350	375	400	450	500	550	600	650	700
MS (Mechanical Stroke)	55	80	105	130	135	155	180	205	230	255	280	305	330	355	380	405	455	505	555	605	655	705
L (Total Length)	222	247	272	297	302	322	347	372	397	422	447	472	497	522	547	572	622	672	722	772	822	872

Model	Measurement stroke (mm)	Linearity (%)	Resistance (KOhm)	Connector / Cable
(example) LPC	500	D	5K	C2
LPC	50 ... 700 mm	D : ± %0,05 (standard)	5K : 5 KOhm 10K : 10 KOhm	C2 : 4 pin connector 1M : 1 meter cable 2M5 : 2,5 meter cable

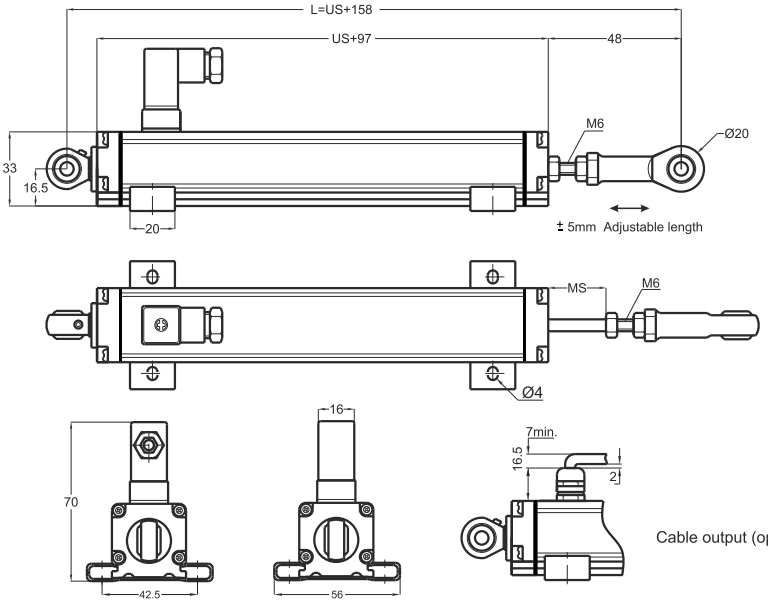
LPM

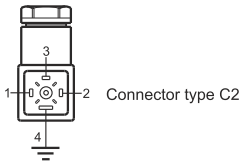
Linear potentiometers
Standard series

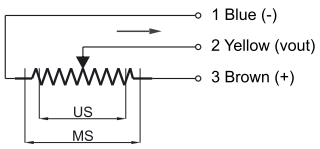
- Measuring range 50 - 600 mm
- Long mechanical life 100 million cycles
- Excellent repeatability <0.01 mm
- Infinite resolution
- 5 KOhm or 10 KOhm

Technical specifications

Measurement stroke	50 to 600 mm
Linearity	± %0,05
Repeatability	< 0.01 mm
Resolution	Infinite
Resistance	5 KOhm or 10 KOhm
Resistance tolerance	± %20
Load resistance	100 KOhm min.
Recommended cursor current	<1 µA
Permissible applied voltage	28 VDC max.
Electrical connections	4 pin connector (standard)
Displacement speed	< 5 m/s
Mechanical life	100 million cycles
Case dimensions	33 mm x 33 mm
Case material	Anodized aluminium
Rod material	Stainless steel
Rod diameter	Ø6 mm
Mechanical fixing	Ball joints on the both side
IP degree	IP 65
Operating temperature	-20°C ... +80°C
Storage temperature	-30°C ... +90°C







LPM (mm)	50	75	100	125	130	150	175	200	225	250	275	300	325	350	375	400	450	500	550	600
US (Usefull Stroke)	50	75	100	125	130	150	175	200	225	250	275	300	325	350	375	400	450	500	550	600
MS (Mechanical Stroke)	53	78	103	128	133	153	178	203	228	253	278	303	328	353	378	403	453	503	553	603
L (Total Length)	208	233	258	283	288	308	333	358	383	408	443	458	483	508	533	558	608	658	708	758

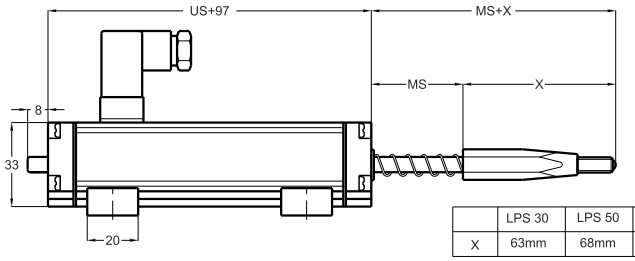
Model	Measurement stroke (mm)	Linearity (%)	Resistance (KOhm)	Connector / Cable
(example) LPM	500	D	5K	C2
LPM	50 ... 600 mm	D : ± %0,05 (standard)	5K : 5 KOhm 10K : 10 KOhm	C2 : 4 pin connector 1M : 1 meter cable 2M5 : 2,5 meter cable

Linear potentiometers
Spring return, Standard series

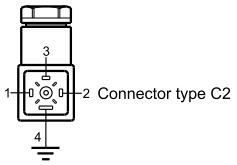
- Measuring range 30 - 150 mm
- Long mechanical life 100 million cycles
- Excellent repeatability <0.01 mm
- Infinite resolution
- 5 KOhm or 10 KOhm

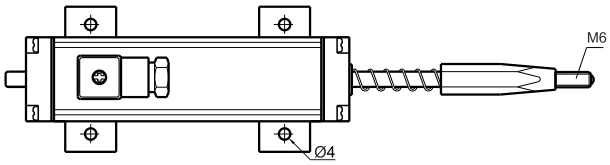
Technical specifications

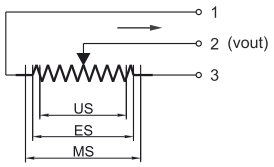
Measurement stroke	30 to 150 mm
Linearity	± %0,05
Repeatability	< 0,01 mm
Resolution	Infinite
Resistance	5 KOhm or 10 KOhm
Resistance tolerance	± %20
Load resistance	100 KOhm min.
Recommended cursor current	<1 µA
Permissible applied voltage	28 VDC max.
Electrical connections	4 pin connector
Displacement speed	< 5 m/s
Mechanical life	100 million cycles
Case dimensions	33 mm x 33 mm
Case material	Anodized aluminium
Rod material	Stainless steel
Rod diameter	Ø6 mm
Mechanical fixing	Variable brackets
IP degree	IP 54
Operating temperature	-20°C ... +80°C
Storage temperature	-30°C ... +90°C

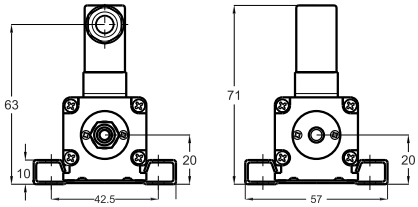


	LPS 30	LPS 50	LPS 100
X	63mm	68mm	88mm









LPS(mm)	30	50	75	100	125	130	150
US (Usefull Stroke)	30	50	75	100	125	130	150
MS (Mechanical Stroke)	34	54	79	104	129	134	154
L (Total Length)	173	192	218	243	268	273	293

Model	Measurement stroke (mm)	Linearity (%)	Resistance (KOhm)	Connector / Cable
(example) LPS	125	D	5K	C2
LPS	30 ... 150 mm	D : ± %0,05 (standard)	5K : 5 KOhm 10K : 10 KOhm	C2 : 4 pin connector

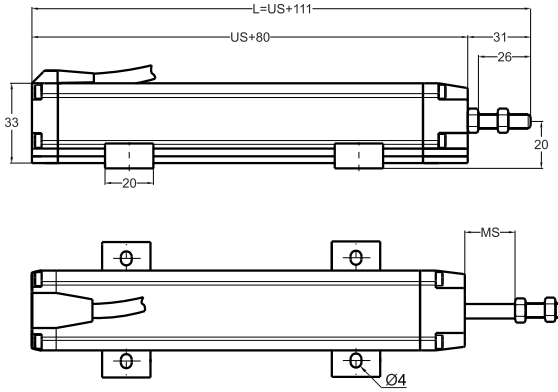
RTK

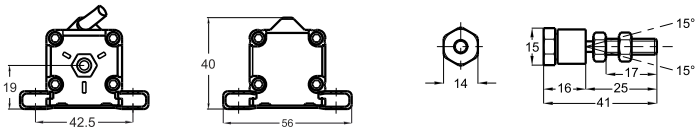
Linear potentiometers
Ruby series / New advanced design

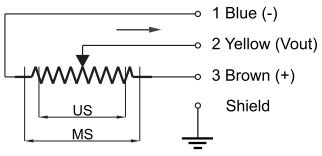
- Measuring range 30 - 1250 mm
- Long mechanical life 100 million cycles
- Excellent repeatability <0.01 mm
- Infinite resolution
- 5 KOhm or 10 KOhm

Technical specifications

Measurement stroke	30 to 1250 mm
Linearity	± %0,05
Repeatability	< 0.01mm
Resolution	Infinite
Resistance	5 KOhm or 10 KOhm
Resistance tolerance	± %20
Load resistance	100 KOhm min.
Recommended cursor current	<1 µA
Permissible applied voltage	28 VDC max.
Electrical connections	Cable 1m
Displacement speed	< 5 m/s
Mechanical life	100 million cycles
Case dimensions	33 mm x 33 mm
Case material	Anodized aluminium
Rod material	Stainless steel
Rod diameter	Ø6 mm
Mechanical fixing	Variable brackets
IP degree	IP 65
Operating temperature	-20°C ... +80°C
Storage temperature	-30°C ... +90°C





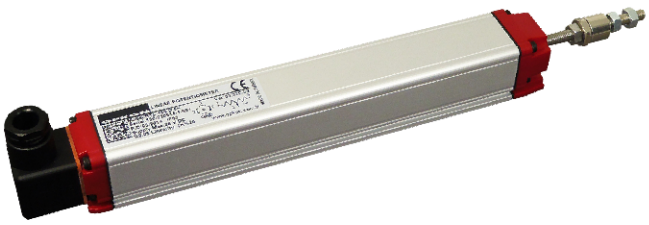


RTK (mm)	30	50	75	100	125	130	150	175	200	225	250	275	300	325	350	375	400	450	500	550	600	650	700	750	800	850	900	1000	1250
US (Usefull Stroke)	30	50	75	100	125	130	150	175	200	225	250	275	300	325	350	375	400	450	500	550	600	650	700	750	800	850	900	1000	1250
MS (Mechanical Stroke)	33	53	73	103	128	133	153	178	203	228	253	278	303	328	353	373	403	453	503	553	603	653	703	753	803	853	903	1003	1253
L (Total Length)	161	181	206	231	256	261	281	306	331	356	381	406	431	456	481	506	531	581	631	681	731	781	831	881	931	981	1031	1131	1381

Model	Measurement stroke (mm)	Linearity (%)	Resistance (KOhm)	Connector / Cable
(example) RTK	500	D	5K	1M
RTK	30 ... 1250 mm	D : ± %0,05 (standard)	5K : 5 KOhm 10K : 10 KOhm	1M : 1 meter cable 2M5 : 2,5 meter cable

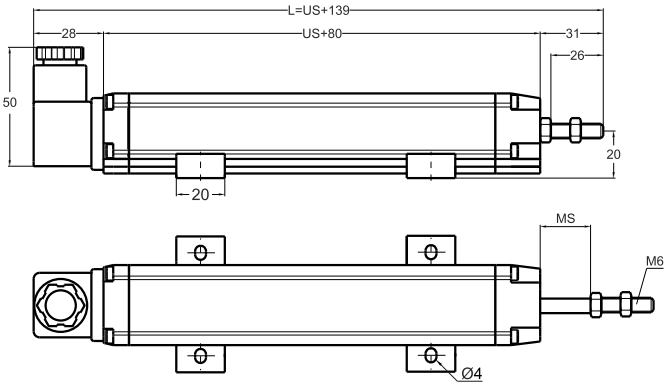
Linear potentiometers
Ruby series / New advanced design

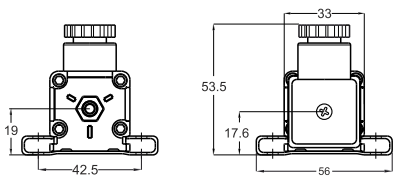
- Measuring range 30 - 1250 mm
- Long mechanical life 100 million cycles
- Excellent repeatability <0.01 mm
- Infinite resolution
- 5 KOhm or 10 KOhm

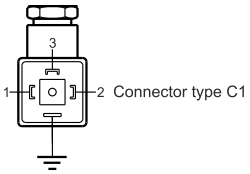


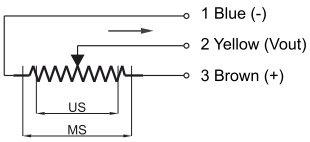
Technical specifications

Measurement stroke	30 to 1250 mm
Linearity	± %0,05
Repeatability	< 0.01 mm
Resolution	Infinite
Resistance	5 KOhm or 10 KOhm
Resistance tolerance	± %20
Load resistance	100 KOhm min.
Recommended cursor current	<1 µA
Permissible applied voltage	28 VDC max.
Electrical connections	4 pin connector
Displacement speed	< 5 m/s
Mechanical life	100 million cycles
Case dimensions	33 mm x 33 mm
Case material	Anodized aluminium
Rod material	Stainless steel
Rod diameter	Ø6 mm
Mechanical fixing	Variable brackets
IP degree	IP 65
Operating temperature	-20°C ... +80°C
Storage temperature	-30°C ... +90°C









RTL (mm)	30	50	75	100	125	130	150	175	200	225	250	275	300	325	350	375	400	450	500	550	600	650	700	750	800	850	900	1000	1250
US (Usefull Stroke)	30	50	75	100	125	130	150	175	200	225	250	275	300	325	350	375	400	450	500	550	600	650	700	750	800	850	900	1000	1250
MS (Mechanical Stroke)	33	53	73	103	128	133	153	178	203	228	253	278	303	328	353	373	403	453	503	553	603	653	703	753	803	853	903	1003	1253
L (Total Length)	161	181	206	231	256	261	281	306	331	356	381	406	431	456	481	506	531	581	631	681	731	781	831	881	931	981	1031	1131	1381

Model	Measurement stroke (mm)	Linearity (%)	Resistance (KOhm)	Connector / Cable
(example) RTL	500	D	5K	C1
RTL	30 ... 1250 mm	D : ± %0,05 (standard)	5K : 5 KOhm 10K : 10 KOhm	C1 : 4 pin connector

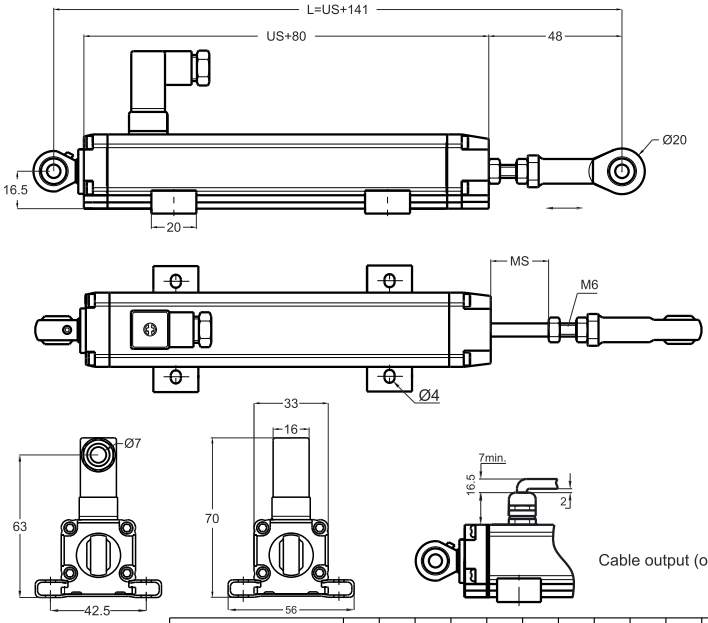
RTM

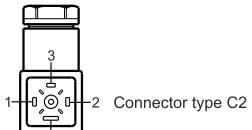
Linear potentiometers
Ruby series / New advanced design

- Measuring range 50 - 600 mm
- Long mechanical life 100 million cycles
- Excellent repeatability <0.01 mm
- Infinite resolution
- 5 KOhm or 10 KOhm

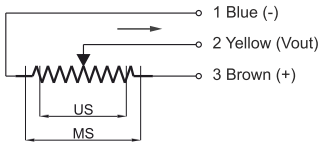
Technical specifications

Measurement stroke	50 to 600 mm
Linearity	± %0,05
Repeatability	< 0.01 mm
Resolution	Infinite
Resistance	5 KOhm or 10 KOhm
Resistance tolerance	± %20
Load resistance	100 KOhm min.
Recommended cursor current	<1 µA
Permissible applied voltage	28 VDC max.
Electrical connections	4 pin connector
Displacement speed	< 5 m/s
Mechanical life	100 million cycles
Case dimensions	33 mm x 33 mm
Case material	Anodized aluminium
Rod material	Stainless steel
Rod diameter	Ø6 mm
Mechanical fixing	Ball joints on the both side
IP degree	IP 65
Operating temperature	-20°C ... +80°C
Storage temperature	-30°C ... +90°C





Connector type C2



Cable output (optional)

RTM (mm)	50	75	100	125	130	150	175	200	225	250	275	300	325	350	375	400	450	500	550	600
US (Usefull Stroke)	50	75	100	125	130	150	175	200	225	250	275	300	325	350	375	400	450	500	550	600
MS (Mechanical Stroke)	53	73	103	128	133	153	178	203	228	253	278	303	328	353	373	403	453	503	553	603
L (Total Length)	181	206	231	256	261	281	306	331	356	381	406	431	456	481	506	531	581	631	681	731

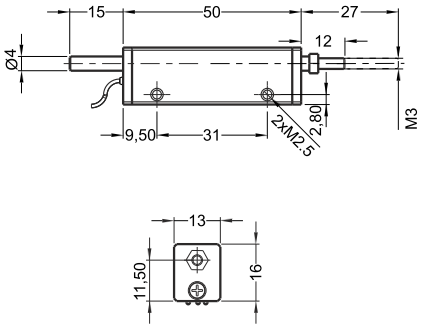
Model	Measurement stroke (mm)	Linearity (%)	Resistance (KOhm)	Connector / Cable
(example) RTM	500	D	5K	C2
RTM	50 ... 600mm	D : ± %0,05 (standard)	5K : 5 KOhm 10K : 10 KOhm	C2 : 4 pin connector 1M : 1 meter cable 2M5 : 2,5 meter cable

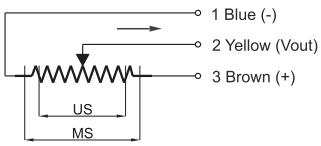
Linear potentiometers
Slim body series

- Measuring range 10 - 25 mm
- Long mechanical life
- Excellent repeatability <0.01 mm
- Infinite resolution
- Ultra slim body

Technical specifications

Measurement stroke	10 to 25 mm
Linearity	± %0,05
Repeatability	< 0.01 mm
Resolution	Infinite
Resistance	2KOhm or 5 KOhm or 10 KOhm
Resistance tolerance	± %20
Load resistance	100 KOhm min.
Recommended cursor current	<1 µA
Permissible applied voltage	28 VDC max.
Electrical connections	Cable 0,2m
Displacement speed	< 5 m/s
Mechanical life	50 million cycles
Case dimensions	13x16 mm
Case material	Anodized aluminium
Rod material	Stainless steel
Rod diameter	Ø4 mm
Mechanical fixing	Screws
IP degree	IP 63
Operating temperature	-20°C ... +80°C
Storage temperature	-30°C ... +90°C





LMT(mm)	10	14	25
US (Usefull Stroke)	10	14	25
MS (Mechanical Stroke)	12	15	27
L (Total Length)	69	77	89

Model	Measurement stroke (mm)	Linearity (%)	Resistance (KOhm)	Connector / Cable
(example) LMT	25	D	5K	0M2
LMT	10 ... 25mm	D : ± %0,05 (standard)	2K : 2 KOhm 5K : 5 KOhm 10K : 10 KOhm	0M2 : 0,2 meter cable 1M : 1 meter cable

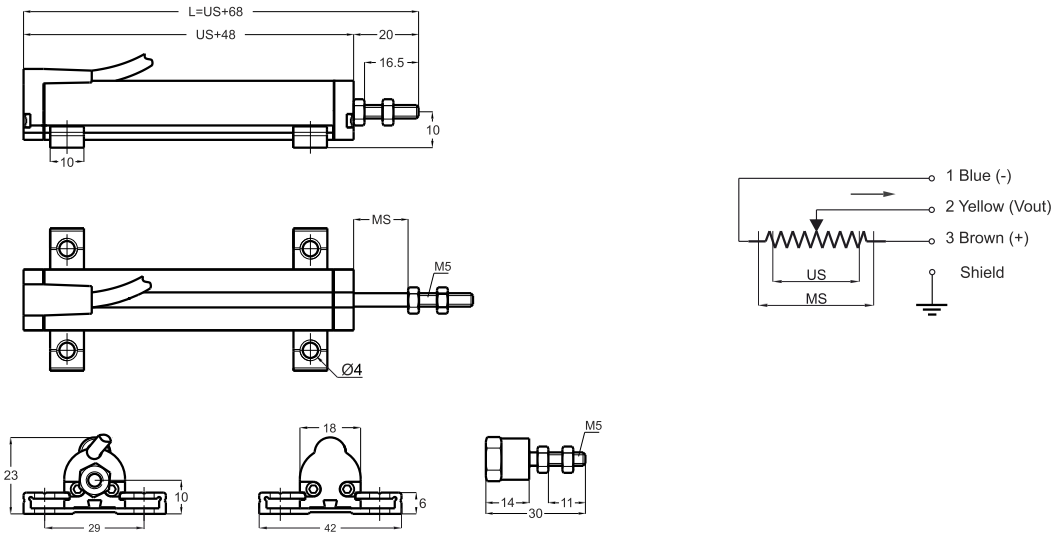
SLPT

Linear potentiometers
Slim body series

- Measuring range 10 - 400 mm
- Long mechanical life
- Excellent repeatability <0.01 mm
- Infinite resolution

Technical specifications

Measurement stroke	10 to 400 mm
Linearity	± %0,05
Repeatability	< 0.01 mm
Resolution	Infinite
Resistance	5 KOhm or 10 KOhm (2KOhm for 10-25mm)
Resistance tolerance	± %20
Load resistance	100 KOhm min.
Recommended cursor current	<1 µA
Permissible applied voltage	28 VDC max.
Electrical connections	Cable 1m
Displacement speed	< 5 m/s
Mechanical life	100 million cycles
Case dimensions	Ø18 mm
Case material	Anodized aluminium
Rod material	Stainless steel
Rod diameter	Ø5 mm
Mechanical fixing	Variable brackets
IP degree	IP 65
Operating temperature	-20°C ... +80°C
Storage temperature	-30°C ... +90°C



SLPT(mm)	10	25	50	75	100	125	150	175	200	250	300	350	400
US (Usefull Stroke)	10	25	50	75	100	125	150	175	200	250	300	350	400
MS (Mechanical Stroke)	13	28	53	78	103	128	153	178	203	253	303	353	403
L (Total Length)	78	93	118	143	168	193	218	243	268	318	368	418	468

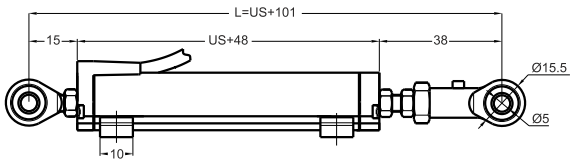
Model	Measurement stroke (mm)	Linearity (%)	Resistance (KOhm)	Connector / Cable
(example) SLPT	175	D	5K	1M
SLPT	10 ... 400mm	D : ± %0,05 (standard)	2K : 2 KOhm (10-25mm) 5K : 5 KOhm 10K : 10 KOhm	1M : 1 meter cable 1M5 : 1,5 meter cable

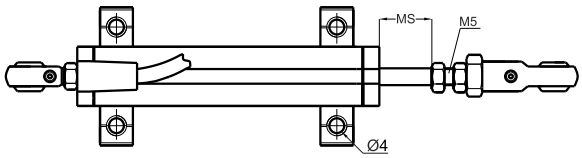
Linear potentiometers
Slim body series

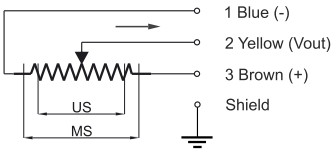
- Measuring range 10 - 300 mm
- Long mechanical life
- Excellent repeatability <0.01 mm
- Infinite resolution

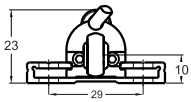
Technical specifications

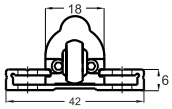
Measurement stroke	10 to 300 mm
Linearity	± %0,05
Repeatability	< 0,01 mm
Resolution	Infinite
Resistance	5 KOhm or 10 KOhm (2KOhm for 10-25mm)
Resistance tolerance	± %20
Load resistance	100 KOhm min.
Recommended cursor current	<1 µA
Permissible applied voltage	28 VDC max.
Electrical connections	Cable 1m
Displacement speed	< 5 m/s
Mechanical life	100 million cycles
Case dimensions	Ø18 mm
Case material	Anodized aluminium
Rod material	Stainless steel
Rod diameter	Ø5 mm
Mechanical fixing	Ball joints on the both side
IP degree	IP 65
Operating temperature	-20°C ... +80°C
Storage temperature	-30°C ... +90°C











SLPC(mm)	10	25	50	75	100	125	150	175	200	250	300
US (Usefull Stroke)	10	25	50	75	100	125	150	175	200	250	300
MS (Mechanical Stroke)	13	28	53	78	103	128	153	178	203	253	303
L (Total Length)	111	126	151	176	201	226	251	276	301	351	401

Model		Measurement stroke (mm)	Linearity (%)	Resistance (KOhm)	Connector / Cable
(example)	SLPC	175	D	5K	1M
	SLPC	10 ... 300mm	D : ± %0,05 (standard)	2K : 2 KOhm (10-25mm) 5K : 5 KOhm 10K : 10 KOhm	1M : 1 meter cable 1M5 : 1,5 meter cable

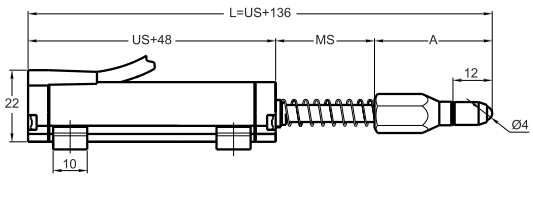
SLPS

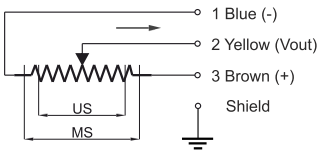
Linear potentiometers
Spring return, Slim body series

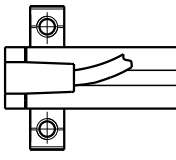
- Measuring range 10 - 100 mm
- Long mechanical life
- Excellent repeatability <0.01 mm
- Infinite resolution

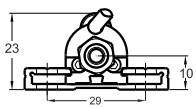
Technical specifications

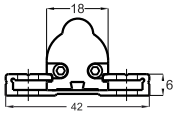
Measurement stroke	10 to 100 mm
Linearity	± %0,05
Repeatability	< 0.01 mm
Resolution	Infinite
Resistance	5 KOhm or 10 KOhm (2KOhm for 10-25mm)
Resistance tolerance	± %20
Load resistance	100 KOhm min.
Recommended cursor current	<1 µA
Permissible applied voltage	28 VDC max.
Electrical connections	Cable 1m
Displacement speed	< 5 m/s
Mechanical life	100 million cycles
Case dimensions	Ø18 mm
Case material	Anodized aluminium
Rod material	Stainless steel
Rod diameter	Ø5 mm
Mechanical fixing	Variable brackets
IP degree	IP 65
Operating temperature	-20°C ... +80°C
Storage temperature	-30°C ... +90°C











SLPS(mm)	10	25	50	75	100
US (Usefull Stroke)	10	25	50	75	100
MS (Mechanical Stroke)	13	28	52	78	103
L (Total Length)	106	136	193	243	293

A	
SLPS 10	35
SLPS 25	35
SLPS 50	42
SLPS 75	42
SLPS 100	42

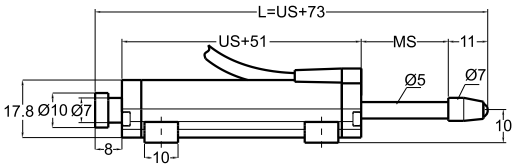
Model	Measurement stroke (mm)	Linearity (%)	Resistance (KOhm)	Connector / Cable
(example) SLPS	100	D	5K	1M
SLPS	10 ... 100mm	D : ± %0,05 (standard)	2K : 2 KOhm (10-25mm) 5K : 5 KOhm 10K : 10 KOhm	1M : 1 meter cable 1M5 : 1,5 meter cable

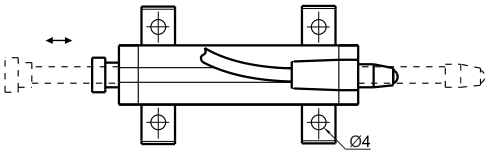
Linear potentiometers
Internal spring return, Slim body series

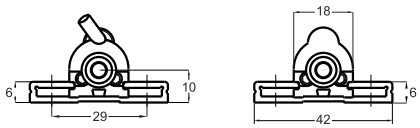
- Measuring range 10 - 50 mm
- Long mechanical life
- Excellent repeatability <0.01 mm
- Infinite resolution

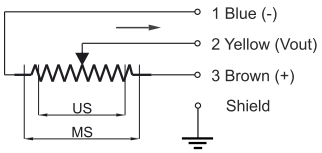
Technical specifications

Measurement stroke	10 to 50 mm
Linearity	± %0,05
Repeatability	< 0,01 mm
Resolution	Infinite
Resistance	2 KOhm
Resistance tolerance	± %20
Recommended cursor current	<1 µA
Electrical connections	Cable 1m
Displacement speed	< 5 m/s
Mechanical life	100 million cycles
Case dimensions	Ø18 mm
Case material	Anodized aluminium
Rod material	Stainless steel
Rod diameter	Ø5 mm
Mechanical fixing	Variable brackets
IP degree	IP 65
Operating temperature	-20°C ... +80°C
Storage temperature	-30°C ... +90°C









SLPIS (mm)	10	25	50
US (Usefull Stroke)	10	25	50
MS (Mechanical Stroke)	14	29	54
L (Total Length)	83	98	123

Model	Measurement stroke (mm)	Linearity (%)	Resistance (KOhm)	Connector / Cable
(example) SLPIS	25	D	5K	1M
SLPIS	10 ... 50mm	D : ± %0,05 (standard)	2K : 2 KOhm (10-25mm) 5K : 5 KOhm 10K : 10 KOhm	1M : 1 meter cable 1M5 : 1,5 meter cable

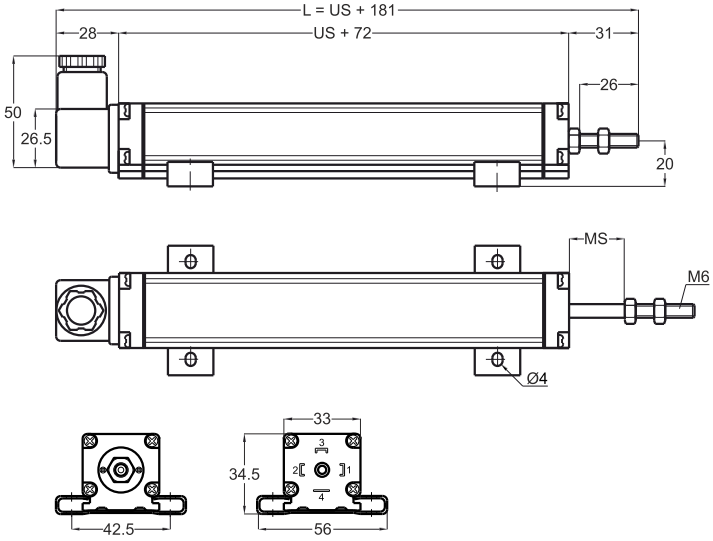
ELPT

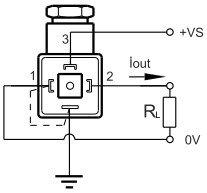
Linear potentiometers
Standard series
Internal Voltage / Current Conditioner Circuit

- Internal electronic circuit
- Measuring range 30 - 1250 mm
- Output 4-20mA, or 0-20mA or 0-10V
- Very stable output signal
- Best solution for automation systems
- Excellent repeatability

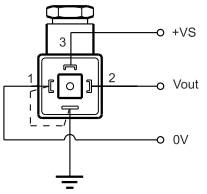
Technical specifications

Measurement stroke	30 to 1250 mm
Linearity	± %0,05
Repeatability	< 0.01 mm
Resolution	Infinite
Output	4-20mA, 0-20mA or 0-10V
Permissible applied voltage	15 - 30 VDC
Electrical connections	4 pin connector
Displacement speed	< 5 m/s
Mechanical life	100 million cycles
Case dimensions	33 mm x 33 mm
Case material	Anodized aluminium
Rod diameter	Ø6 mm
Rod material	Stainless steel
Mechanical fixing	Variable brackets
IP degree	IP 65
Operating temperature	-20°C ... +80°C
Storage temperature	-30°C ... +90°C





0-20mA, 4-20mA Output



0-10V Output

ELPT (mm)	30	50	75	100	125	130	150	175	200	225	250	275	300	325	350	375	400	450	500	550	600	650	700	750	800	850	900	1000	1250
US (Usefull Stroke)	30	50	75	100	125	130	150	175	200	225	250	275	300	325	350	375	400	450	500	550	600	650	700	750	800	850	900	1000	1250
MS (Mechanical Stroke)	34	54	79	104	129	134	154	179	204	229	254	279	304	329	354	379	404	454	504	554	604	654	704	754	804	854	904	1004	1254
L (Total Length)	211	231	256	281	306	311	331	356	381	406	431	456	481	506	531	556	581	631	681	731	781	831	881	931	981	1031	1081	1181	1431

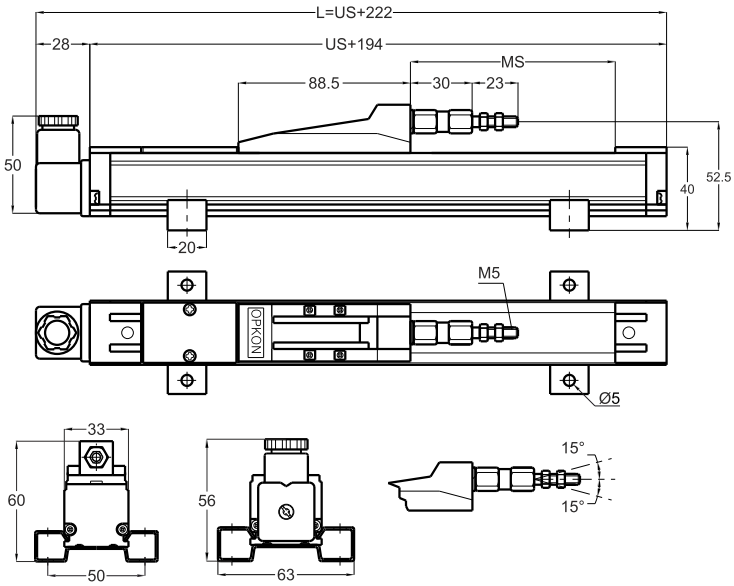
Model	Measurement stroke (mm)	Linearity (%)	Output	Connector / Cable
(example) ELPT	500	D	V10	C1
ELPT	30 ... 1250 mm	D : ± %0,05 (standard)	V10 : 0-10V I 04 : 4-20mA I 20 : 0-20mA	C1 : 4 pin connector

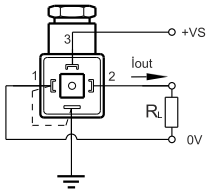
Linear potentiometers
Standard series
Internal Voltage / Current Conditioner Circuit

- Internal electronic circuit
- Measuring range 100 - 1500 mm
- Output 4-20mA, 0-20mA or 0-10V
- Very low temperature drift
- Very stable output signal
- Excellent repeatability

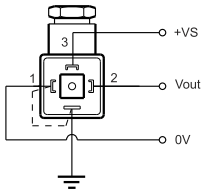
Technical specifications

Measurement stroke	100 to 1500 mm
Linearity	± %0,05
Repeatability	< 0.01 mm
Resolution	Infinite
Output	4-20mA, 0-20mA or 0-10V
Permissible applied voltage	15 - 30 VDC
Electrical connections	4 pin connector
Displacement speed	< 1,5 m/s
Mechanical life	100 million cycles
Case dimensions	33 mm x 33 mm
Case material	Anodized aluminium
Rod diameter	Ø6 mm
Rod material	Stainless steel
Mechanical fixing	Variable brackets
IP degree	IP 40 - If mounted upside down IP 53
Operating temperature	-20°C ... +80°C
Storage temperature	-30°C ... +90°C





0-20mA, 4-20mA Output



0-10V Output

ELPH (mm)	100	125	130	150	175	200	225	250	275	300	325	350	375	400	450	500	550	600	650	700	750	800	850	900	1000	1250	1500
US (Usefull Stroke)	100	125	130	150	175	200	225	250	275	300	325	350	375	400	450	500	550	600	650	700	750	800	850	900	1000	1250	1500
MS (Mechanical Stroke)	104	129	134	154	179	204	229	254	279	304	329	354	379	404	454	504	554	604	654	704	754	804	854	904	1004	1254	1504
L (Total Length)	322	347	352	372	397	422	447	472	497	522	547	572	597	622	672	722	772	822	872	922	972	1022	1072	1122	1222	1472	1722

Model	Measurement stroke (mm)	Linearity (%)	Output	Connector / Cable
(example) ELPH	500	D	V10	C1
ELPH	100 ... 1500mm	D : ± %0,05 (standard)	V10 : 0-10V I 04 : 4-20mA I 20 : 0-20mA	C1 : 4 pin connector

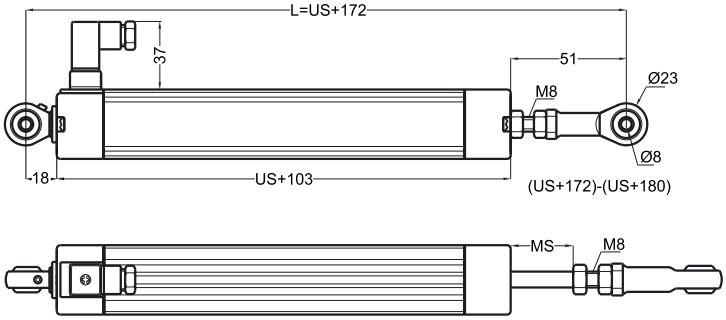
ELPC

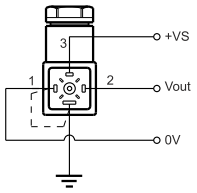
Linear potentiometers
Standard series
Internal Voltage / Current Conditioner Circuit

- Internal electronic circuit
- Measuring range 50 - 700 mm
- Output 4-20mA, 0-20mA or 0-10V
- Very low temperature drift
- Very stable output signal
- Excellent repeatability

Technical specifications

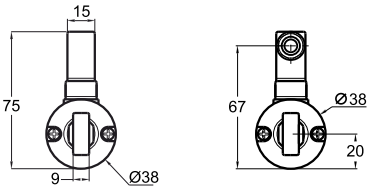
Measurement stroke	50 to 700 mm
Linearity	± %0,05
Repeatability	< 0.01 mm
Resolution	Infinite
Output	4-20mA, 0-20mA or 0-10V
Permissible applied voltage	15 - 30 VDC
Electrical connections	4 pin connector, Cable (optional)
Displacement speed	< 5 m/s
Mechanical life	100 million cycles
Case dimensions	Ø38 mm
Case material	Anodized aluminium
Rod diameter	Ø10 mm
Rod material	Stainless steel
Mechanical fixing	Ball joints on the both side
IP degree	IP 65
Operating temperature	-20°C ... +80°C
Storage temperature	-30°C ... +90°C

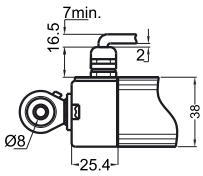




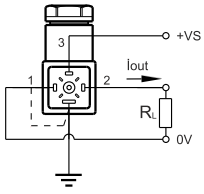
0-10V Output

Cable Colors
[1] Blue : (-)
[2] Yellow : Vout / Iout
[3] Brown : (+)
[4] Black : GND





Cable Output (optional)



0-20mA, 4-20mA Output

ELPC (mm)	50	75	100	125	130	150	175	200	225	250	275	300	325	350	375	400	450	500	550	600	700
US (Usefull Stroke)	50	75	100	125	130	150	175	200	225	250	275	300	325	350	375	400	450	500	550	600	700
MS (Mechanical Stroke)	55	80	105	130	135	155	180	205	230	255	280	305	330	355	380	405	455	505	555	605	705
L (Total Length)	222	247	272	297	302	322	347	372	397	422	447	472	497	522	547	572	622	672	722	772	872

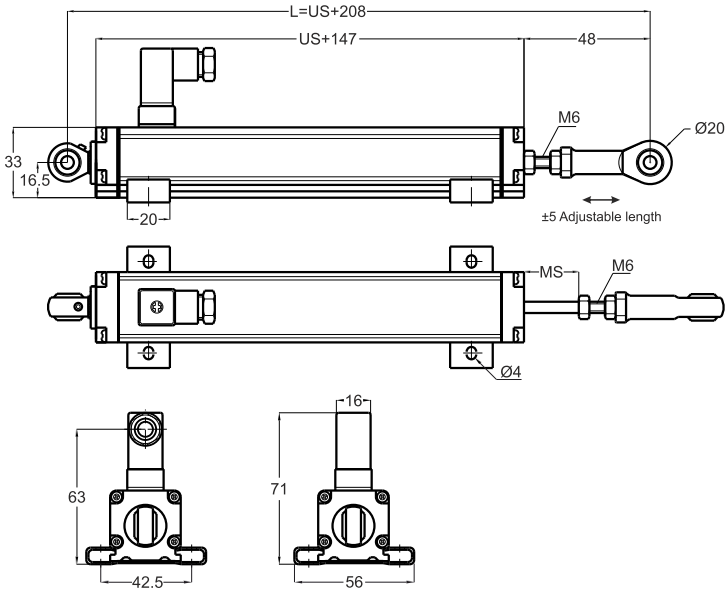
Model	Measurement stroke (mm)	Linearity (%)	Output	Connector / Cable
(example) ELPC	500	D	V10	C2
ELPC	50 ... 700mm	D : ± %0,05 (standard)	V10 : 0-10V I 04 : 4-20mA I 20 : 0-20mA	C2 : 4 pin connector 1M5 : 1,5 meter cable

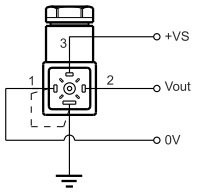
Linear potentiometers
Standard series
Internal Voltage / Current Conditioner Circuit

- Internal electronic circuit
- Measuring range 50 - 600 mm
- Output 4-20mA, 0-20mA or 0-10V
- Very stable output signal
- Best solution for automation systems
- Excellent repeatability

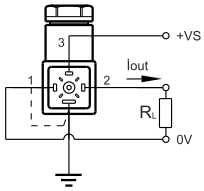
Technical specifications

Measurement stroke	50 to 600 mm
Linearity	± %0,05
Repeatability	< 0.01mm
Resolution	Infinite
Output	4-20mA, 0-20mA or 0-10V
Permissible applied voltage	15 - 30 VDC
Electrical connections	4 pin connector
Displacement speed	< 5 m/s
Mechanical life	100 million cycles
Case dimensions	33 mm x 33 mm
Case material	Anodized aluminium
Rod diameter	Ø6 mm
Rod material	Stainless steel
Mechanical fixing	Ball joints on the both side
IP degree	IP 65
Operating temperature	-20°C ... +80°C
Storage temperature	-30°C ... +90°C





0-10V Output



0-20mA, 4-20mA Output

ELPM (mm)	50	75	100	125	130	150	175	200	225	250	275	300	325	350	375	400	450	500	550	600
US (Usefull Stroke)	50	75	100	125	130	150	175	200	225	250	275	300	325	350	375	400	450	500	550	600
MS (Mechanical Stroke)	53	78	103	128	133	153	178	203	228	253	278	303	328	353	378	403	453	503	553	603
L (Total Length)	258	283	308	333	338	358	383	408	433	458	483	508	533	558	583	608	658	708	758	808

Model	Measurement stroke (mm)	Linearity (%)	Output	Connector / Cable
(example) ELPM	500	D	V10	C2
ELPM	50 ... 600mm	D : ± %0,05 (standard)	V10 : 0-10V I 04 : 4-20mA I 20 : 0-20mA	C2 : 4 pin connector

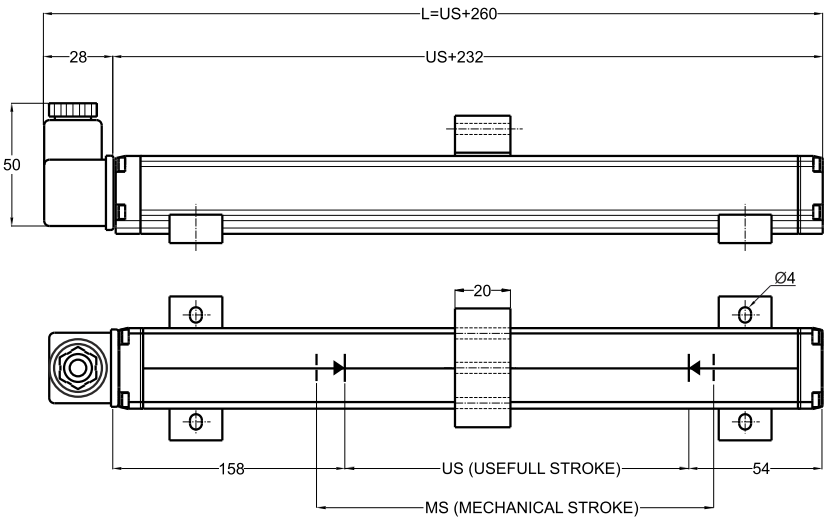
MSS

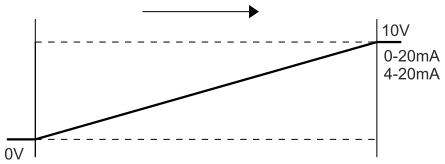
Magnetostrictive position sensors

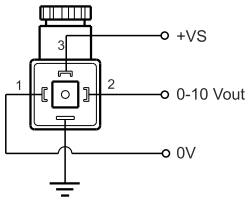
- Measuring range 100 - 1250 mm
- 16 bit resolution
- Output 0-10V, 0-20mA, 4-20mA
- 24 VDC power supply

Technical specifications

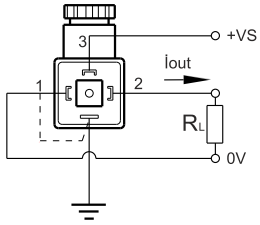
Measurement stroke	100 to 1250 mm
Resolution	16 bit
Repeatability	< 0.05 mm
Output	0-10V, 0-20mA, 4-20mA
Power supply	24 VDC ±10%
Permissible applied voltage	30 VDC max.
Displacement speed	< 10 m/s
Sampling rate	1 Khz
Max. comsumption	50mA
Max. output noise	< 5mVpp
Max. output value	10.5 Volt
Reverse polarity protection	Yes



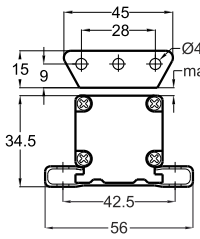




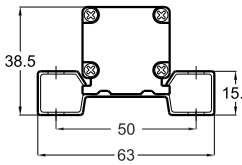
0-10V Output



0-20mA, 4-20mA Output



Standard bracket



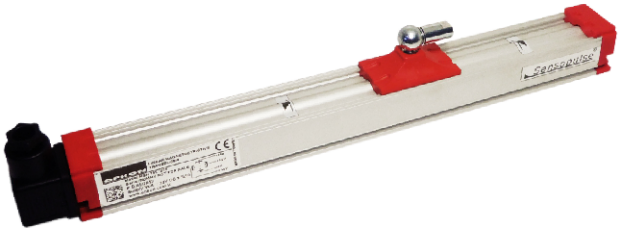
Optional bracket

MSS (mm)	100	200	300	400	500	600	700	800	900	1000	1250
US (Usefull Stroke)	100	200	300	400	500	600	700	800	900	1000	1250
MS (Mechanical Stroke)	120	220	320	420	520	620	720	820	920	1020	1270
L (Total Length)	360	460	560	660	760	860	960	1060	1160	1260	1510

Model	Measurement stroke	Resolution	Output	Connector / Cable
(example) MSS	300	A	V10	C1
MSS	100 ... 1250mm	A : 16 bit	V10 : 0-10V I 04 : 4-20mA I 20 : 0-20mA	C1 : 4 pin connector

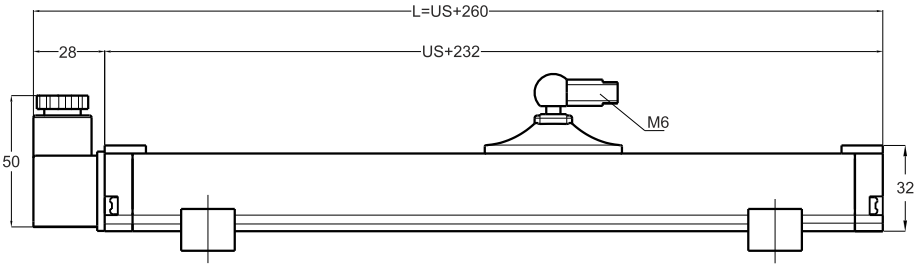
Magnetostrictive position sensors

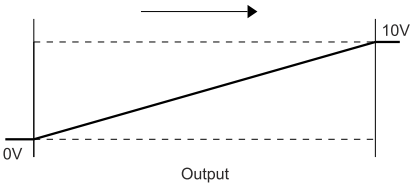
- Measuring range 100 - 1250 mm
- 16 bit resolution
- Output 0-10V
- 24 VDC power supply

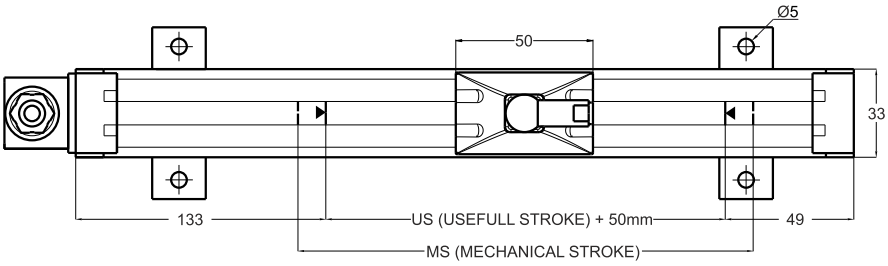


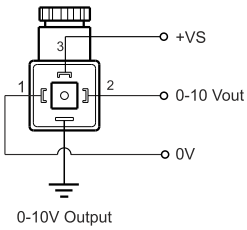
Technical specifications

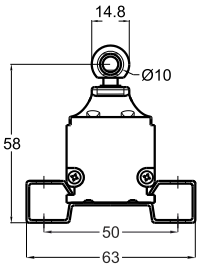
Measurement stroke	100 to 1250 mm
Resolution	16 bit
Repeatability	< 0.05 mm
Output	0-10V
Power supply	24 VDC ±10%
Permissible applied voltage	30 VDC max.
Displacement speed	< 10 m/s
Sampling rate	1 Khz
Max. comsumption	50mA
Max. output noise	< 5mVpp
Max. output value	10.5 Volt
Reverse polarity protection	Yes

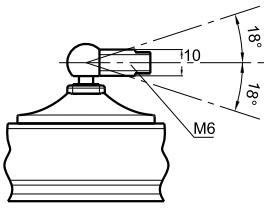












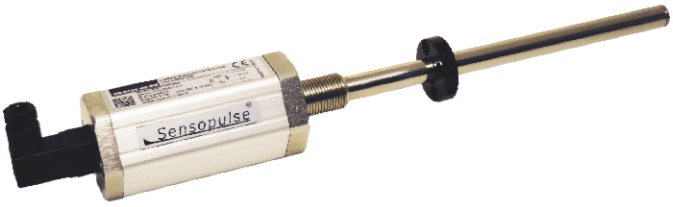
MSH (mm)	100	200	300	400	500	600	700	800	900	1000	1250
US (Usefull Stroke)	100	200	300	400	500	600	700	800	900	1000	1250
MS (Mechanical Stroke)	120	220	320	420	520	620	720	820	920	1020	1270
L (Total Length)	360	460	560	660	760	860	960	1060	1160	1260	1510

Model	Measurment stroke	Resolution	Output	Connector / Cable
(example) MSH	300	A	V10	C1
MSH	100 ... 1250mm	A : 16 bit	V10 : 0-10V	C1 : 4 pin connector

MST

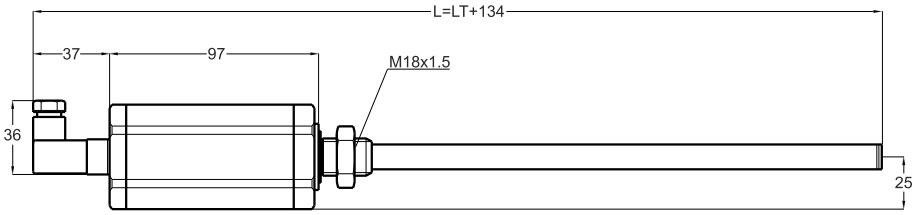
Magnetostrictive position sensors

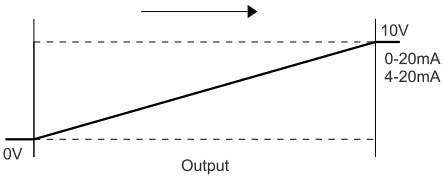
- Measuring range 100 - 1250 mm
- 16 bit resolution
- Output 0...10V, 4-20mA, 0-20mA
- 24 VDC power supply

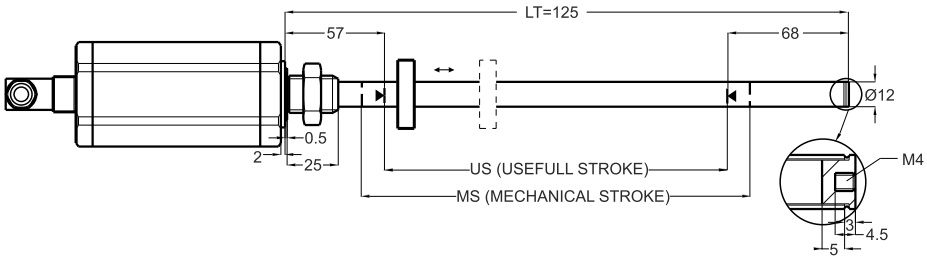


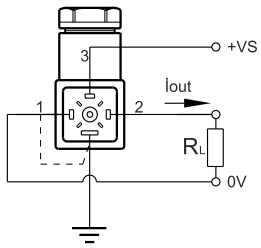
Technical specifications

Measurement stroke	100 to 1250 mm
Resolution	16 bit
Repeatability	< 0.05 mm
Output	0...10V, 4-20mA, 0-20mA
Power supply	24 VDC ±10%
Permissible applied voltage	30 VDC max.
Displacement speed	< 10 m/s
Sampling rate	1 Khz
Max. comsumption	50mA
Max. output noise	< 5mVpp
Max. output value	10.5 Volt
Reverse polarity protection	Yes

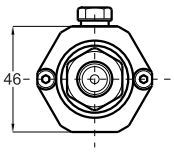


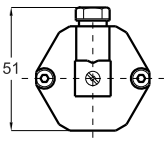


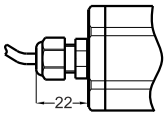




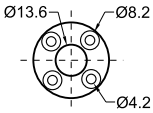
0-20mA, 4-20mA Output

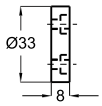


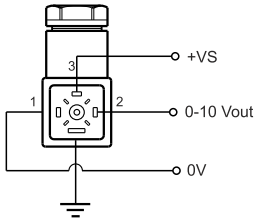




Cable type







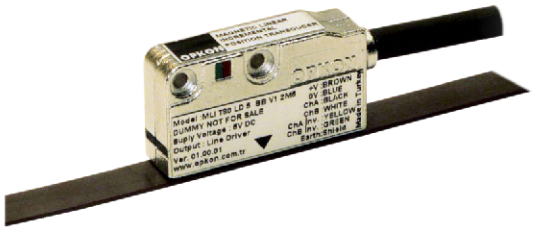
0-10V Output

MST (mm)	100	200	300	400	500	600	700	750	800	850	900	950	1000	1250
US (Usefull Stroke)	100	200	300	400	500	600	700	750	800	850	900	950	1000	1250
MS (Mechanical Stroke)	120	220	320	420	520	620	720	770	820	870	920	970	1020	1270
LT	225	325	425	525	625	725	825	875	925	975	1025	1075	1125	1375
L (Total Length)	359	459	559	659	759	859	959	1009	1059	1109	1159	1209	1259	1509

Model	Measurement stroke	Resolution	Output	Connector / Cable
(example) MST	1250	A	V10	C2
MST	100 ... 1250mm	A : 16 bit	V10 : 0-10V I 04 : 4-20mA I 20 : 0-20mA	C2 : 4 pin connector 1M : 1 meter cable 2M5 : 2,5 meter cable

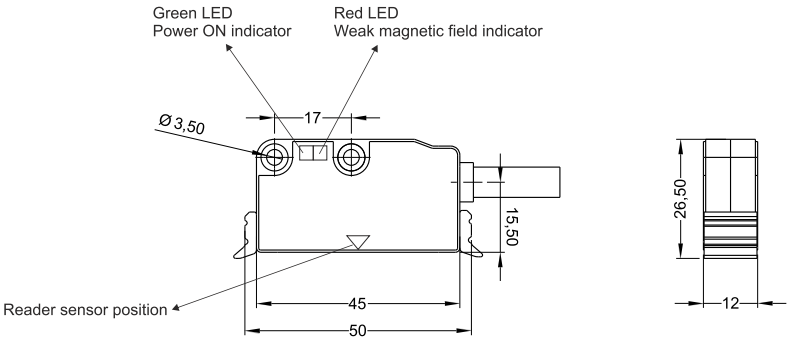
Magnetic linear incremental encoders

- 2,5 / 5 / 10 / 12,5 / 20 / 25 micron resolution (other options on request)
- Magnetic contactless measurement
- Push-pull, TTL Linedriver or HTL Linedriver output options
- Single or Continues reference (optional)
- Weak magnetic field and power on LEDs
- IP 66 protection



Technical specifications

Type of measurement	Magnetic incremental non-contact
Resolution	2,5 / 10 / 12,5 / 20 / 25 micron resolution
Accuracy	± 0.04 mm
Output channels	B : A,B Z : A, B, Z (Single refersnce) 5Z : A, B, Z (Continues refersnce)
Output type	Push-pull, TTL Linedriver, HTL Linedriver
Supply voltage	8-24VDC (Standard), 5VDC (Optional)
Sensing distance	For 2mm magnet 1mm max., (for 5mm magnet max 2.5mm)
Electrical connections	2,5m cable (Standard), 1m cable with DB9 connector
Case material	Anodized aluminium
Max. speed	3 m/s
IP degree	IP 66
Operating temperature	-20°C ... +80°C
Storage temperature	-30°C ... +90°C



Linedriver Cable Output

Ch A : Black
Ch A inv. : Yellow
Ch B : White
Ch B inv. : Green
+V : Brown
0V : Blue
GND : Shield

Push-pull Cable Output

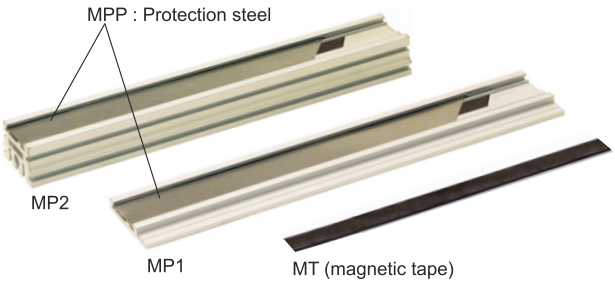
Ch A : Black
Ch B : White
+V : Brown
0V : Blue
GND : Shield

Model	Pole pitch	Resolution	Output type	Output channels	Supply voltage	Connector / Cable
(example) MLI	B5	T20	LTP	B	V2	1M
MLI	B5 : 5mm pole pitch B2 : 2mm pole pitch 2B5 : 2,56mm pole pitch	T10 : 2,5 µm T20 : 5 µm T40 : 10 µm T50 : 12,5 µm T80 : 20 µm T100: 25 µm	LTP : Push-pull TT : TTL Linedriver HLD : High Linedriver	B : A, B Z : A, B, Z (Single reference) 5Z : A, B, Z (Continues reference)	V1 : 5V DC V2 : 8-24V DC	1M : 1 meter cable (standard) 2M5 : 2,5 meter cable 9C : 0,5 meter cable with 9 pin connector

MT2, MT2,56, MT5
MP1, MP2

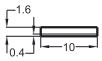
Magnetic tapes and Aluminium profiles

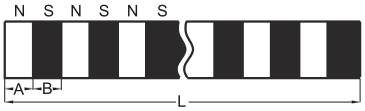
- 2 mm, 2,56 mm, 5 mm pole pitches
- ± 40µm, ± 20µm, ± 10µm accuracy
- Self adhesive magnetic tapes
- Industrial standart dimensions 10 mm x 1,5 mm
- IP 67 protection



Magnetic tape technical specifications

Pole pitch	2 mm, 2,56 mm, 5 mm
Accuracy	± 40µm, ± 20µm, ± 10µm
Dimensions	10 mm x 1,5 mm
Max. stroke	Up to 25m single piece.,
Cover strip	Stainless steel
Mechanical fixing	Self adhesive
IP degree	IP 67
Operating temperature	-20°C ... +80°C
Storage temperature	-30°C ... +90°C

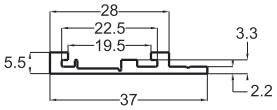


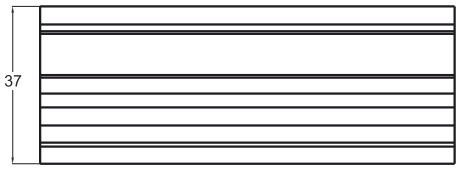


MT (magnetic tape)

Pole pitches	A (mm)	B (mm)	L
MT 2	2	2	Up to 25m single piece. Longer stroke on request
MT 2,56	2,56	2,56	
MT 5	5	5	

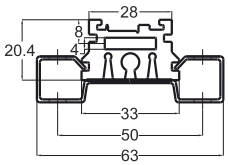
Model	Length
(example) MTP	2M
MTP (protection steel)	2M : 2 meter (Up to 25 meters)

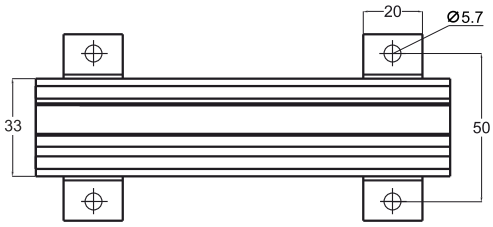




MP1 Aluminium profile

Model	Length
(example) MPP	2M
MPP (protection steel)	2M : 2 meter (Up to 25 meters)





MP2 Aluminium profile

Model	Length
(example) MP1	2M
MP1 MP2	2M : 2 meter (Up to 3 meters)

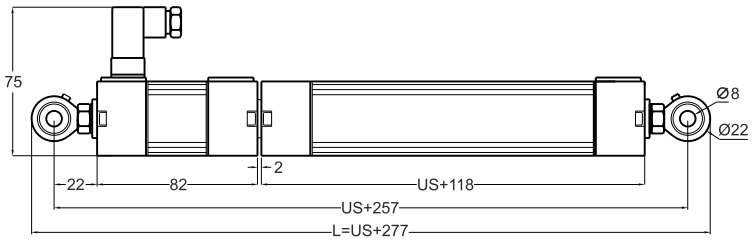
Model	Pole pitches	Accuracy	Length (meter)
(example) MT	5	A40	5M
MT (magnetic tape)	5 : 5mm 2,56 : 2,56mm 2 : 2mm	A40 : ± 40µm A20 : ± 20µm A10 : ± 10µm	5M : 5 meter (Up to 25 meters)

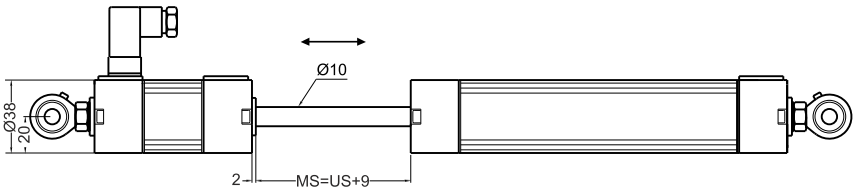
Magnetic linear incremental encoders
Special for Roll-bending machinery

- 2,5 / 5 / 10 / 12,5 / 25 micron resolution (on request)
- Measuring range 50 - 800 mm
- Magnetic contactless measurement
- TTL Linedriver, HTL Linedriver outputs optional
- IP 65 protection

Technical specifications

Type of measurement	Magnetic incremental
Measurement stroke	50 to 800 mm
Resolution	2,5-5-10-12,5-20-25 micron resolution
Accuracy	± 40 µm
Output channels	A,B, / A,$\overline{A}$, B,$\overline{B}$
Output type	Push-pull, TTL Linedriver, HTL Linedriver
Supply voltage	8-24 VDC or 5 VDC
Power comsumption (without load)	< 40 mA (24 VDC)
Electrical connections	4 pin connector, cable (optional)
Max. speed	< 3m/s
Case material	Anodized aluminium
Mechanical fixing	Ball joints on the both side
IP degree	IP 65
Operating temperature	-20°C ... +80°C
Storage temperature	-30°C ... +90°C





Linedriver Cable Output

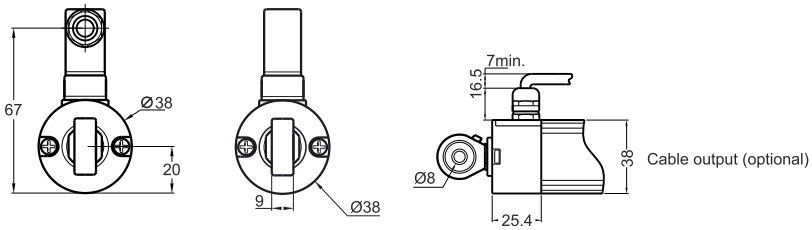
Ch A : Black
Ch A inv. : Yellow
Ch B : White
Ch B inv. : Green
+V : Brown
0V : Blue
GND : Shield

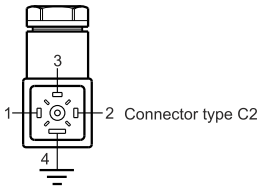
Push-pull Cable Output

Ch A : Black
Ch B : White
+V : Brown
0V : Blue
GND : Shield

Connector Output

[1] Ch B
[2] Ch A
[3] +V
[4] 0V





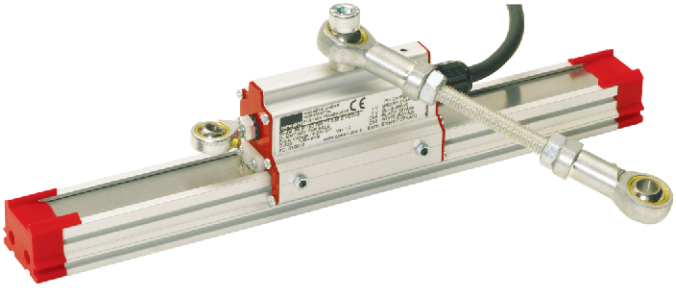
MLC (mm)	50	100	125	150	175	200	225	250	275	300	350	400	450	500	550	600	700	800
US (Usefull Stroke)	50	100	125	150	175	200	225	250	275	300	350	400	450	500	550	600	700	800
MS (Mechanical Stroke)	59	109	134	159	184	209	234	259	284	309	359	409	459	509	559	609	709	809
L (Total Length)	327	377	402	427	452	477	502	527	552	577	627	677	727	777	827	877	977	1077

Model	Pole pitch	Measurement stroke	Resolution	Output type	Output channels	Supply voltage	Connector / Cable
(example) MLC	B5	250	T20	LTP	B	V2	C2
MLC	B5 : 5mm pole pitch B2 : 2mm pole pitch 2B5 : 2,56mm pole pitch	50 ... 800mm	T10 : 2,5 µm T20 : 5 µm T50 : 12,5 µm T80 : 20 µm T100: 25 µm	LTP : Push-pull TT : TTL Linedriver HLD : High Linedriver	B : A, B	V1 : 5V DC V2 : 8-24V DC	C2 : 4 pin connector 1M : 1 meter cable 2M5 : 2,5 meter cable

MLIP

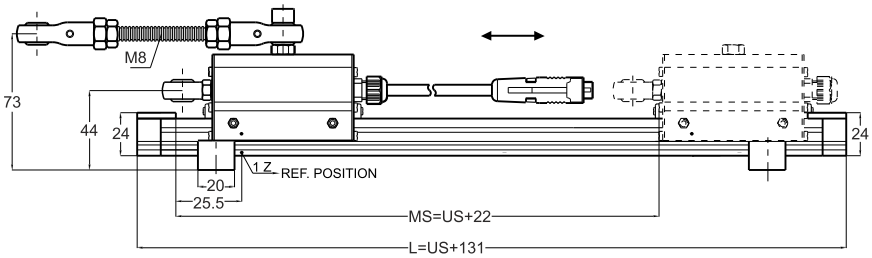
Magnetic linear incremental encoders

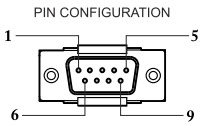
- 10, 20, 40, 50, 80, 100 micron resolution (other options on request)
- Magnetic contactless measurement
- Can be extended up to 25 meter with special fixing parts
- Can be used with multiple reader heads
- Excellent solution for outdoor applications and stone machinery
- IP 66 protection
- TTL Linedriver, HTL Linedriver or Pushpull outputs



Technical specifications

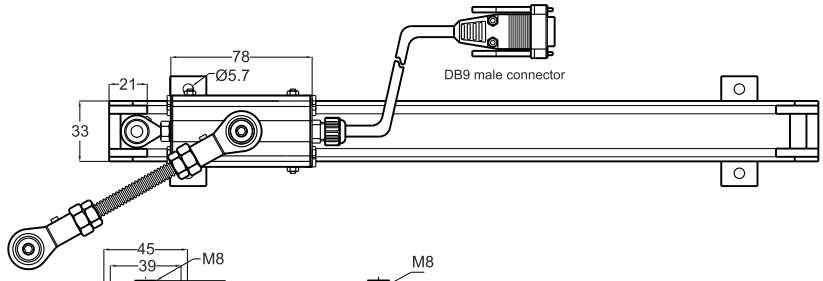
Type of measurement	Magnetic incremental contactless
Measurement stroke	50 to 1800mm (can be extend up to 25meter)
Resolution	10, 20, 40, 50, 80, 100µm
Accuracy	± 40µm
Output channels	A,B,Z, / A,$\bar{A}$, B,$\bar{B}$, Z,$\bar{Z}$
Output type	Push-pull, TTL Linedriver, HTL Linedriver
Supply voltage	5 VDC or 8-24 VDC
Referance position	Optional
Power comsumption (without load)	< 40 mA (24 VDC)
Electrical connections	2.5m cable (standard)
Case material	Anodized aluminium
IP degree	IP 66
Operating temperature	-20°C ... +80°C
Storage temperature	-30°C ... +90°C





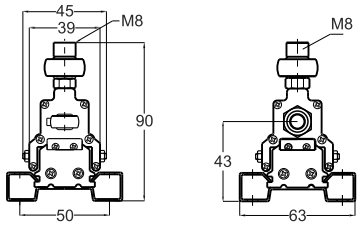
Cable output

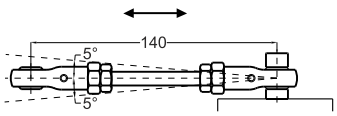
V+ : Brown
0V : Blue
A : Black
B : White
Z : Orange
A inv. : Yellow
B inv. : Green
Z inv. : Red
GND : Earth



9G Type Electrical Connections

Pin 1 : Ch A
Pin 2 : Ch A inv.
Pin 3 : Ch Z
Pin 4 : Ch B
Pin 5 : Ch B inv.
Pin 6 : Ch Z inv.
Pin 7 : +V
Pin 8 : GND
Pin 9 : Earth





(± 10 mm) Adjustable

9H Type Electrical Connections

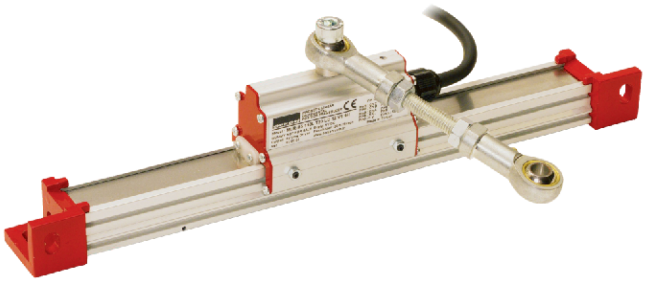
Pin 1 : Ch Z
Pin 2 : Ch B
Pin 3 : Ch A
Pin 4 : NC
Pin 5 : GND
Pin 6 : Ch Z inv.
Pin 7 : Ch B inv.
Pin 8 : Ch A inv.
Pin 9 : +V

MLIP(mm)	50	100	150	200	250	300	350	400	500	600	700	800	900	1000	1250	1500	1800
US (Usefull Stroke)	50	100	150	200	250	300	350	400	500	600	700	800	900	1000	1250	1500	1800
MS (Mechanical Stroke)	72	122	172	222	272	322	372	422	522	622	722	822	922	1022	1272	1522	1822
L (Total Length)	181	231	281	331	381	431	481	531	631	731	831	931	1031	1131	1381	1631	1931

Model	Pole pitch	Measurement stroke	Resolution	Output type	Output		Supply voltage	Connector / Cable
(example) MLIP	B5	600	T20	LTP	B		V1	2M5
MLIP	B5 : 5mm pole pitch B2 : 2mm pole pitch 2B5 : 2,56mm pole pitch	50 ... 1800mm (can be extend up to 25meter)	T20 : 5 µm T80 : 20 µm T100: 25 µm	LTP : Push-pull TT : TTL Linedriver HLD : High Linedriver	B : A, B Z : A, B, Z	1Z : Ref. at c. cable side 2Z : Ref. at cable side 3Z : Ref. at middle 5Z : Continues ref. 0Z : Without ref.	V1 : 5V DC V2 : 8-24V DC	2M5: 2,5 meter cable 9G : G type electrical connection 9H : H type electrical connection

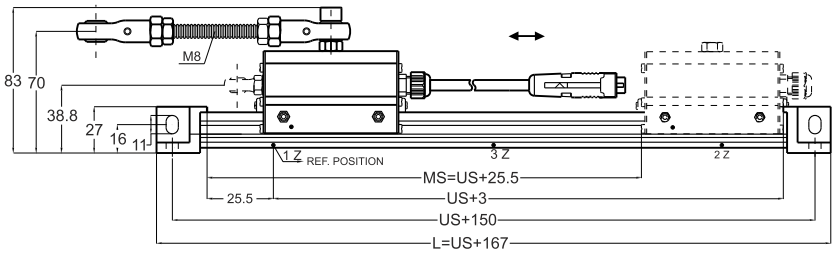
Magnetic linear incremental encoders
For press brakes

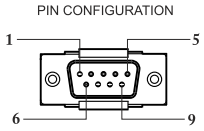
- 5 µm resolution, TTL Linedriver output
- Measuring range 150 - 720 mm (other options on request)
- Magnetic contactless measurement
- Protective steel cover for measurement tape
- Teflon guiding system
- Selectable referance position options
- ± 40 µm accuracy



Technical specifications

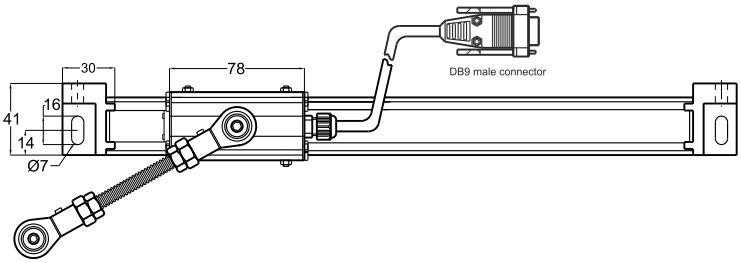
Type of measurement	Magnetic incremental non-contact
Measurement stroke	150 to 720 mm
Resolution	5 µm
Accuracy	± 40 µm
Output channels	A,$\bar{A}$, B,$\bar{B}$, Z,$\bar{Z}$
Output type	TTL Linedriver
Supply voltage	5 Volt DC
Power comsumption (without load)	< 40 mA (24 VDC)
Electrical connections	DB9 connector with 1m cable
Max. speed	< 3 m/s
Case material	Anodized aluminium
Mechanical fixing	End-caps on the both side
IP degree	IP 65
Operating temperature	-20°C ... +80°C
Storage temperature	-30°C ... +90°C





Cable output

V+ : Brown
0V : Blue
A : Black
B : White
Z : Orange
A inv. : Yellow
B inv. : Green
Z inv. : Red
GND : Earth

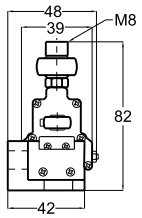


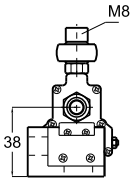
9G Type Electrical Connections

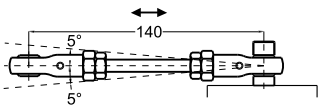
Pin 1 : Ch A
Pin 2 : Ch A inv.
Pin 3 : Ch Z
Pin 4 : Ch B
Pin 5 : Ch B inv.
Pin 6 : Ch Z inv.
Pin 7 : +V
Pin 8 : GND
Pin 9 : Shield

9H Type Electrical Connections

Pin 1 : Ch Z
Pin 2 : Ch B
Pin 3 : Ch A
Pin 4 : NC
Pin 5 : GND
Pin 6 : Ch Z inv.
Pin 7 : Ch B inv.
Pin 8 : Ch A inv.
Pin 9 : +V







(± 10 mm) Adjustable

MLR (mm)	150	170	220	270	320	370	420	470	520	570	620	670	720
US (Usefull Stroke)	153	173	223	273	323	373	423	473	523	573	623	673	723
MS (Mechanical Stroke)	178.5	198.5	248.5	298.5	348.5	398.5	448.5	498.5	548.5	598.5	648.5	698.5	748.5
L (Total Length)	317	337	387	437	487	537	587	637	687	737	787	837	887

Model	Pole pitch	Stroke	Resolution	Output type	Output	Supply voltage	Connector / Cable
(example) MLR	B5	270R	T20	TT	Z	V1	9G
MLR	B5 : 5mm pole pitch B2 : 2mm pole pitch	270R : 270mm right 270L : 270mm left (150 ... 720mm strokes)	T20 : 5µm	TT : TTL Linedriver	Z : A, B, Z 1Z : Ref. at c. cable side 2Z : Ref. at cable side 3Z : Ref. at middle 5Z : Continues ref. 0Z : Without ref.	V1 : 5V DC V2 : 8-24V DC	9G : 9 pin connector with meter cable (standard) 9H : 9 pin connector with meter cable (standard)

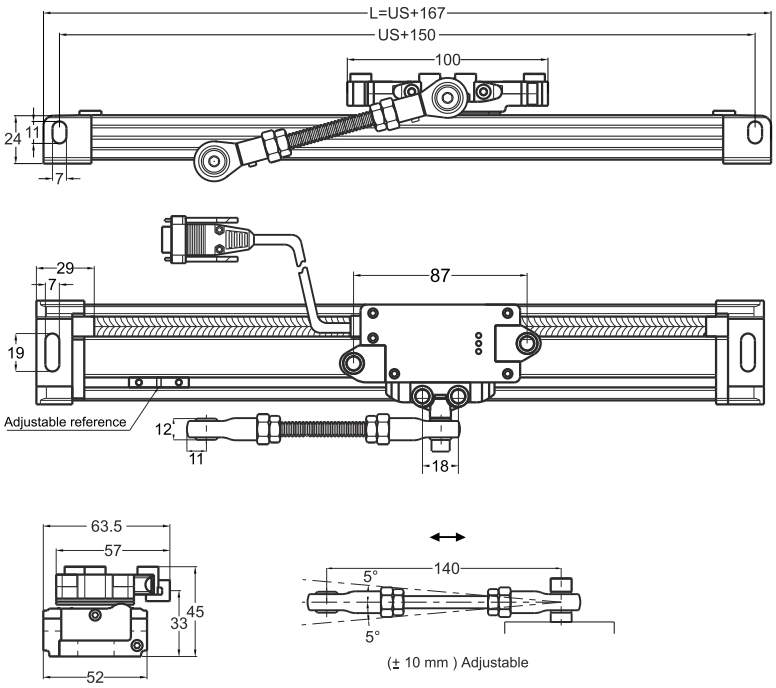
MPS

Magnetic linear incremental encoders
For Press Brakes / New Advanced Design

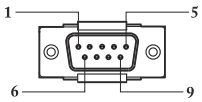
- 5 µm resolution
- Measuring range 150 - 2000mm
- Adjustable referance
- LED status indicators
- Full symetrical
- Protective steel cover for measurement tape
- High precision bearings for smooth movement
- ± 20 µm accuracy

Technical Specifications

Type of measurement	Magnetic incremental non-contact
Measurement stroke	150 to 2000 mm
Resolution	5 µm
Repeatability	± 10 µm
Accuracy	± 20 µm
Output channels	A,$\bar{A}$, B,$\bar{B}$, Z,$\bar{Z}$
Output type	TTL Linedriver
Supply voltage	5V DC
Power comsumption (without load)	< 40 mA (24 VDC)
Electrical connections	DB9 connector with 1m cable
Max. speed	< 3 m/s
Case material	Anodized aluminium
IP degree	IP 65
Operating temperature	-20°C ... +80°C
Storage temperature	-30°C ... +90°C



PIN CONFIGURATION



Cable output

V+ : Brown
0V : Blue
A : Black
B : White
Z : Orange
A inv. : Yellow
B inv. : Green
Z inv. : Red
GND : Earth

9G Type Electrical Connection

Pin 1 : Ch A
Pin 2 : Ch A inv.
Pin 3 : Ch Z
Pin 4 : Ch B
Pin 5 : Ch B inv.
Pin 6 : Ch Z inv.
Pin 7 : +V
Pin 8 : GND
Pin 9 : Earth

9H Type Electrical Connection

Pin 1 : Ch Z
Pin 2 : Ch B
Pin 3 : Ch A
Pin 4 : NC
Pin 5 : GND
Pin 6 : Ch Z inv.
Pin 7 : Ch B inv.
Pin 8 : Ch A inv.
Pin 9 : +V

MPS (mm)	150	170	220	270	320	370	420	470	520	570	620	670	720	820	870	920	1000	1100	1200	1300	1400	1500	1750	2000
US (Usefull Stroke)	153	173	223	273	323	373	423	473	523	573	623	673	723	823	873	923	1003	1103	1203	1303	1403	1503	1753	2003
MS (Mechanical Stroke)	178.5	198.5	248.5	298.5	348.5	398.5	448.5	498.5	548.5	598.5	648.5	698.5	748.5	848.5	898,5	951,5	1028,5	1128,5	1228,5	1328,5	1428,5	1528,5	1778,5	2028,5
L (Total Length)	317	337	387	437	487	537	587	637	687	737	787	837	887	987	1037	1087	1167	1267	1367	1467	1567	1667	1917	2167

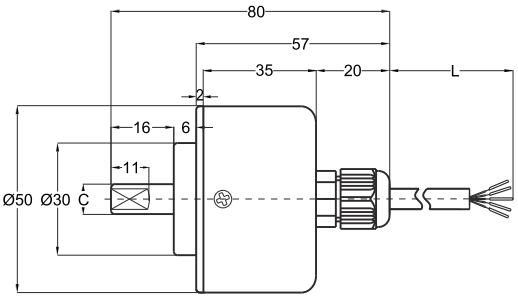
Model	Pole pitch	Measurement Stroke	Resolution	Output Type	Referance Output	Supply Voltage	Connector / Cable
(example) MPS	B5	270	T20	LD	4Z	V1	9G
MPS	B5 : 5mm pole pitch B2 : 2mm pole pitch	150 ... 2000mm	T20 : 5 µm	LD : TTL Linedriver	4Z : Adjustable referance	V1 : 5V DC V2 : 8-24V DC	9G : G type electrical connections with 1 meter cable 9H : H type electrical connections with 1 meter cable

Optic rotary incremental encoders

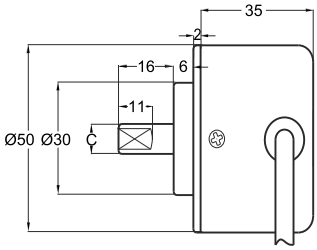
- 50 mm case diameter
- 100 - 200 - 360 - 400 - 500 - 720 - 1000 - 1024
  1800 - 2000 - 2048 - 2500 - 3600 - 4000 - 4096 - 5000 ppr.
- Push-pull, TTL Linedriver and HTL Linedriver outputs
- Shaft dimater 6 - 8 mm
- 3500 rpm max.

Technical Specifications

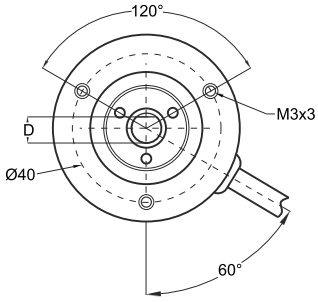
Resolution	100 to 5000 ppr.
Output Channels	A,B,Z or A,$\overline{A}$, B,$\overline{B}$, Z,$\overline{Z}$
Output Type	Pushpull, TTL Linedriver, HTL Linedriver
Supply Voltage	5V DC or 8-24V DC or 5-24V DC
Power Comsumption (without load)	< 40 mA (24 VDC)
Cable	2.5m (Standard) 5 Wire + Shield for Pushpull 2.5m (Standard) 8 Wire + Shield for Linedriver
Max. Permissible Shaft Loading Radial Axial	100 N 60 N
Max. Speed	3.500 rpm
Shaft Diameter	Ø6 - 8 mm
Shaft Material	Stainless Steel
Case Diameter	Ø50 mm
Case Material	Aluminium and Painted Steel
IP Degree	IP 54
Operating Temperature	-20°C ... +80°C
Storage Temperature	-30°C ... +90°C



Shaft Type / Axial



Shaft Type / Radial



PRI 50	R (shaft)	
	C	D
	Ø6mm	5mm
	Ø8mm	7mm

Push-pull Cable Output

+V : Brown
0V : White
GND : Shield
Ch A : Yellow
Ch B : Green
Ch Z : Gray

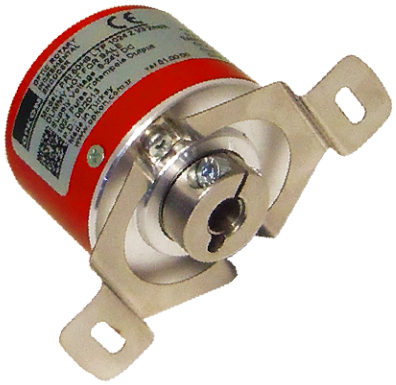
TTL - HTL Linedriver Cable Output

+V : Brown
0V : White
GND : Shield
Ch A : Yellow
Ch B : Green
Ch Z : Gray
Ch A inv. : Blue
Ch B inv. : Red
Ch Z inv. : Pink

Model	Case Diameter	Case Type	Shaft Diameter	Output Type	Resolution	Output Channels	Supply Voltage	Connector / Cable	Cable Output
(example) PRI	50	A	R6	HLD	1024	Z	V2	2M5	R
PRI	50mm	A : Clamping flange	R6 : 6mm R8 : 8mm	LTP : Push-pull TTL : TTL Linedriver HLD : HTL Linedriver	100 ... 5000 ppr.	Z : A, B, Z B : A, B	V1 : 5V DC V2 : 8-24V DC V3 : 5-24V DC	2M5 : 2,5 meter cable 5M : 5 meter cable 8M : 8 meter cable 10M : 10 meter cable	R : Radial A : Axial

PRI 50SH
PRI 50H

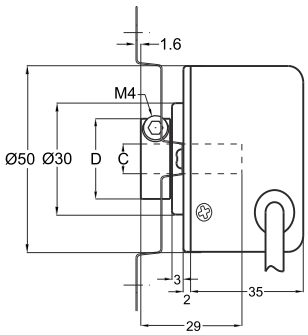
Optic rotary incremental encoders



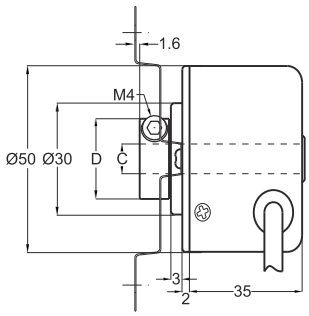
- 50 mm case diameter
- Hollow and semi-hollow shaft
- 100 - 200 - 360 - 400 - 500 - 720 - 1000 - 1024
  1800 - 2000 - 2048 - 2500 - 3600 - 4000 - 4096 ppr.
- Push-pull, TTL Linedriver and HTL Linedriver outputs
- Shaft dimater 6 - 8 mm
- 3500 rpm max.

Technical Specifications

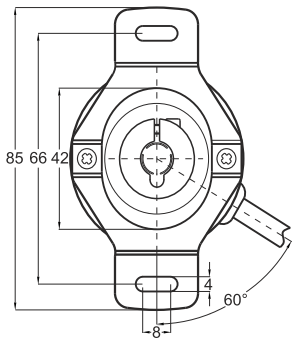
Resolution	100 to 5000 ppr.
Output Channels	A,B,Z or A,$\overline{A}$, B,$\overline{B}$, Z,$\overline{Z}$
Output Type	Pushpull, TTL Linedriver, HTL Linedriver
Supply Voltage	5V DC or 8-24V DC or 5-24V DC
Power Comsumption (without load)	< 40 mA (24 VDC)
Cable	2.5m (Standard) 5 Wire + Shield for Pushpull 2.5m (Standard) 8 Wire + Shield for Linedriver
Max. Permissible Shaft Loading Radial Axial	100 N 60 N
Max. Speed	3.500 rpm
Shaft Diameter	Ø6 - 8 mm
Shaft Material	Stainless Steel
Case Diameter	Ø50 mm
Case Material	Aluminium and Painted Steel
IP Degree	IP 54
Operating Temperature	-20°C ... +80°C
Storage Temperature	-30°C ... +90°C



SH Type (Radial)



H Type (Radial)



PRI 50SH / H	SH (semi hollow) /	H (hollow)
	C	D
	Ø6mm	20mm
	Ø8mm	22mm

Push-pull Cable Output

+V : Brown
0V : White
GND : Shield
Ch A : Yellow
Ch B : Green
Ch Z : Gray

TTL - HTL Linedriver Cable Output

+V : Brown
0V : White
GND : Shield
Ch A : Yellow
Ch B : Green
Ch Z : Gray
Ch A inv. : Blue
Ch B inv. : Red
Ch Z inv. : Pink

Model	Case Diameter	Case Type	Shaft Diameter	Output Type	Resolution	Output Channels	Supply Voltage	Connector / Cable	Cable Output
(example) PRI	50	SH	8	HLD	1024	Z	V2	2M5	R
PRI	50mm	SH : Semi hollow H : Hollow	6 : 6mm 8 : 8mm	LTP : Push-pull TTL : TTL Linedriver HLD : HTL Linedriver	100 ... 5000 ppr.	Z : A, B, Z B : A, B	V1 : 5V DC V2 : 8-24V DC V3 : 5-24V DC	2M5 : 2,5 meter cable 5M : 5 meter cable 8M : 8 meter cable 10M : 10 meter cable	R : Radial

Optic rotary incremental encoders

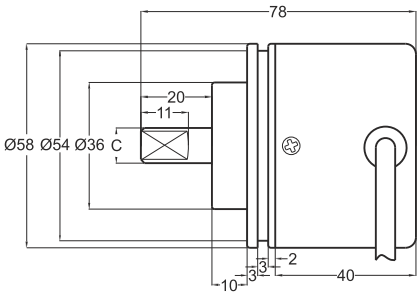
- 58 mm case diameter
- 100 - 200 - 360 - 400 - 500 - 720 - 1000 - 1024
  1800 - 2000 - 2048 - 2500 - 3600 - 4000 - 4096 - 5000 ppr.
- Push-pull, TTL Linedriver and HTL Linedriver outputs
- Shaft dimater 6 - 8 - 10 mm
- 3500 rpm max.

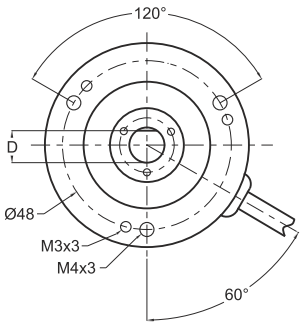
PRI A
Clamping flange

PRI B
Synchro flange

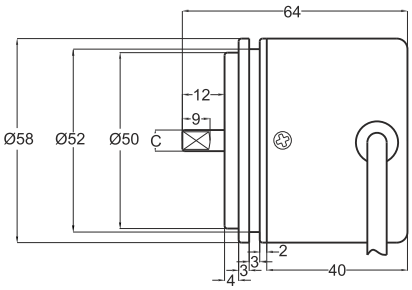
Technical Specifications

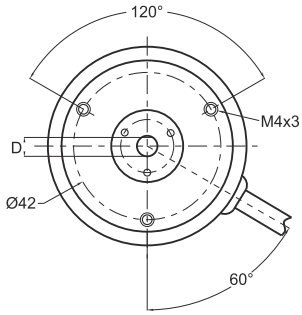
Resolution	100 to 5000 ppr.
Output Channels	A,B,Z or A,$\overline{A}$, B,$\overline{B}$, Z,$\overline{Z}$
Output Type	Pushpull, TTL Linedriver, HTL Linedriver
Supply Voltage	5V DC or 8-24V DC or 5-24V DC
Power Comsumption (without load)	< 40 mA (24 VDC)
Cable	2.5m (Standard) 5 Wire + Shield for Pushpull 2.5m (Standard) 8 Wire + Shield for Linedriver
Max. Permissible Shaft Loading Radial Axial	60 N 40 N
Max. Speed	3.500 rpm
Shaft Diameter	Ø6 - 8 - 10 mm
Shaft Material	Stainless Steel
Case Diameter	Ø58 mm
Case Material	Aluminium and Painted Steel
IP Degree	IP 54
Operating Temperature	-20°C ... +80°C
Storage Temperature	-30°C ... +90°C





A Type (Clamping flange)





B Type (Synchro flange)

Push-pull Cable Output

+V : Brown
0V : White
GND : Shield
Ch A : Yellow
Ch B : Green
Ch Z : Gray

TTL - HTL Linedriver Cable Output

+V : Brown
0V : White
GND : Shield
Ch A : Yellow
Ch B : Green
Ch Z : Gray
Ch A inv. : Blue
Ch B inv. : Red
Ch Z inv. : Ping

PRI 58	AR (shaft)		BR (shaft)	
	C	D	C	D
	Ø6mm	5mm	Ø6mm	5mm
	Ø8mm	7mm	Ø8mm	7mm
	Ø10mm	9mm	Ø10mm	9mm

Model	Case Diameter	Case Type	Shaft Diameter	Output Type	Resolution	Output Channels	Supply Voltage	Connector / Cable	Cable Output
(example) PRI	58	A	R8	HLD	1024	Z	V2	2M5	R
PRI	58mm	A : Clamping flange B : Synchro flange	R6 : 6mm R8 : 8mm R10 : 10mm	LTP : Push-pull TTL : TTL Linedriver HLD : HTL Linedriver	100 ... 5000 ppr.	Z : A, B, Z B : A, B	V1 : 5V DC V2 : 8-24V DC V3 : 5-24V DC	2M5 : 2,5 meter cable 5M : 5 meter cable 8M : 8 meter cable 10M : 10 meter cable	R : Radial A : Axial

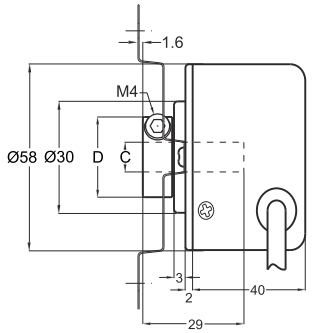
PRI 58SH
PRI 58H

Optic rotary incremental encoders

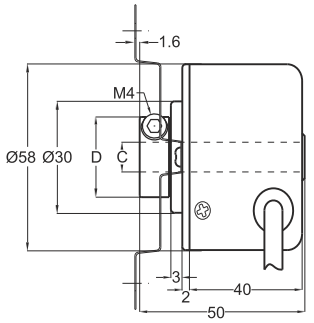
- 58 mm case diameter
- Hollow and semi-hollow shaft
- 100 - 200 - 360 - 400 - 500 - 720 - 1000 - 1024
  1800 - 2000 - 2048 - 2500 - 3600 - 4000 - 4096 - 5000 ppr.
- Push-pull, TTL Linedriver and HTL Linedriver outputs
- Shaft dimater 6 - 8 - 10 mm
- 3500 rpm max.

Technical Specifications

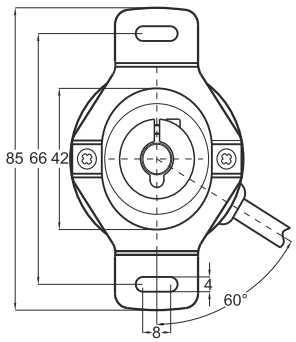
Resolution	100 to 5000 ppr.
Output Channels	A,B,Z or A,$\overline{A}$, B,$\overline{B}$, Z,$\overline{Z}$
Output Type	Pushpull, TTL Linedriver, HTL Linedriver
Supply Voltage	5V DC or 8-24V DC or 5-24V DC
Power Comsumption (without load)	< 40 mA (24 VDC)
Cable	2.5m (Standard) 5 Wire + Shield for Pushpull 2.5m (Standard) 8 Wire + Shield for Linedriver
Max. Permissible Shaft Loading Radial Axial	60 N 40 N
Max. Speed	3.500 rpm
Shaft Diameter	Ø6 - 8 - 10 mm
Shaft Material	Stainless Steel
Case Diameter	Ø58 mm
Case Material	Aluminium and Painted Steel
IP Degree	IP 54
Operating Temperature	-20°C ... +80°C
Storage Temperature	-30°C ... +90°C



SH Type (Radial)



H Type (Radial)



	SH (semi hollow) / H (hollow)	
PRI 58 SH / H	C	D
	Ø6mm	20mm
	Ø8mm	22mm
	Ø10mm	28mm

Push-pull Cable Output

+V : Brown
0V : White
GND : Shield
Ch A : Yellow
Ch B : Green
Ch Z : Gray

TTL - HTL Linedriver Cable Output

+V : Brown
0V : White
GND : Shield
Ch A : Yellow
Ch B : Green
Ch Z : Gray
Ch A inv. : Blue
Ch B inv.: Red
Ch Z inv.: Pink

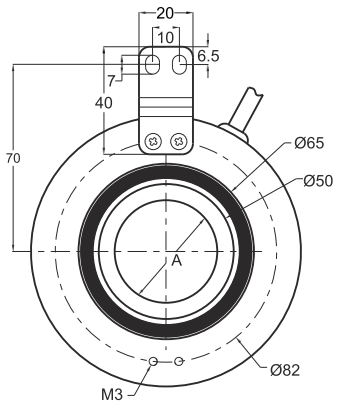
Model	Case Diameter	Case Type	Shaft Diameter	Output Type	Resolution	Output Channels	Supply Voltage	Connector / Cable	Cable Output
(example) PRI	58	SH	8	HLD	1024	Z	V2	2M5	R
PRI	58mm	SH : Semi hollow H : Hollow	6 : 6mm 8 : 8mm 10 : 10mm	LTP : Push-pull TTL : TTL Linedriver HLD : HTL Linedriver	100 ... 5000 ppr.	Z : A, B, Z B : A, B	V1 : 5V DC V2 : 8-24V DC V3 : 5-24V DC	2M5 : 2,5 meter cable 5M : 5 meter cable 8M : 8 meter cable 10M : 10 meter cable	R : Radial

Optic rotary incremental encoders

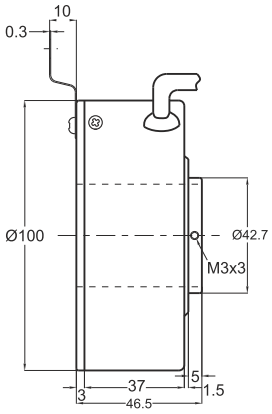
- 100 mm case diameter
- 1024 ppr.
- Hollow shaft diameter 25 - 28 - 35 - 38mm
- 3500 rpm max.
- Lift and elevator applications

Technical Specifications

Resolution	1024 ppr.
Output Channels	A,B,Z or A,$\bar{A}$, B,$\bar{B}$, Z,$\bar{Z}$
Output Type	Pushpull, TTL Linedriver, HTL Linedriver
Supply Voltage	5V DC or 8-24V DC or 5-24V DC
Power Comsumption (without load)	< 40 mA (24 VDC)
Cable	2.5m (Standard) 5 Wire + Shield for Pushpull 2.5m (Standard) 8 Wire + Shield for Linedriver
Max. Permissible Shaft Loading Radial Axial	180 N 80 N
Max. Speed	3.500 rpm
Shaft Diameter	Ø25 - 28 - 35 - 38 mm
Shaft Material	Aluminium
Case Diameter	Ø100 mm
Case Material	Aluminium and Painted Steel
IP Degree	IP 50
Operating Temperature	-20°C ... +80°C
Storage Temperature	-30°C ... +90°C



H Type (Radial)



Linedriver Cable Output

Ch A : Yellow
Ch A inv. : Blue
Ch B : Green
Ch B inv. : Red
Ch Z : Gray
Ch Z inv. : Pink
+V : Brown
0V : White
GND : Shield

Push-pull Cable Output

Ch A : Yellow
Ch B : Green
+V : Brown
0V : White
GND : Shield

Model	Case Diameter	Case Type	Shaft Diameter	Output Type	Resolution	Output Channels	Supply Voltage	Connector / Cable	Cable Output
(example) PRI	100	H	25	LTP	1024	Z	V2	2M5	R
PRI	100	H : Hollow	25 mm 28 mm 35 mm 38 mm	LTP : Push-pull TTL : TTL Linedriver HLD : HTL Linedriver	1024 ppr.	Z : A, B, Z B : A, B	V1 : 5V DC V2 : 8-24V DC V3 : 5-24V DC	2M5 : 2,5 meter cable 5M : 5 meter cable 8M : 8 meter cable 10M : 10 meter cable	R : Radial

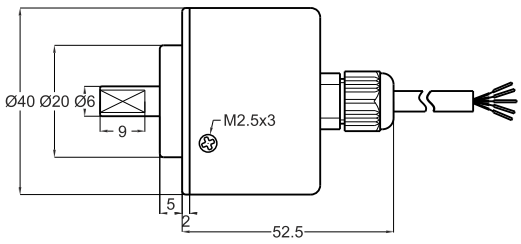
MRI 40A

Magnetic incremental encoders

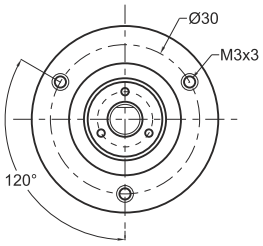
- 40 mm case diameter
- Magnetic incremental encoder
- Pulse options :
  2 - 4 - 8 - 16 - 25 - 32 - 40 - 50 - 64 - 80 - 100 - 125,
  128 - 160 - 200 - 250 - 256 - 400 - 500 - 512 - 1024 ppr.
- IP 54 protection

Technical Specifications

Type of Measurement	Magnetic incremental contactless
Resolution	2 ... 1024 ppr.
Output Channels	A,B,Z or A,$\overline{A}$, B,$\overline{B}$, Z,$\overline{Z}$
Output Type	Push-pull, TTL Linedriver or HTL Linedriver
Supply Voltage	8-24 VDC (Standard) or 5 VDC (Optional)
Power Comsumption (without load)	< 40 mA (24 VDC)
Electrical Connections	2.5m (Standard) 5 Wire + Shield for Pushpull 2.5m (Standard) 8 Wire + Shield for Linedriver
Max. Permissible Shaft Loading Radial Axial	100 N 60 N
Max. Speed	3500 rpm
Shaft Diameter	Ø6 - 8 mm
Shaft Material	Stainless Steel
Case Diameter	Ø40 mm
Case Material	Aluminium / Steel
IP Degree	IP 54
Operating Temperature	-20°C ... +80°C
Storage Temperature	-30°C ... +90°C

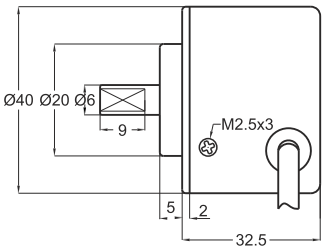


Shaft Type / Axial

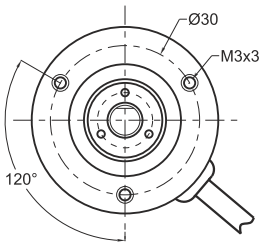


Push-pull / TTL Linedriver Cable Output

+V	: Brown
0V	: White
GND	: Shield
Ch A	: Yellow
Ch B	: Green
Ch Z	: Gray
Ch A inv.	: Blue
Ch B inv.	: Red
Ch Z inv.	: Pink



Shaft Type / Radial



HTL Linedriver Cable Output

+V	: Brown
0V	: White
GND	: Shield
Ch A	: Yellow
Ch B	: Green
Ch Z	: Gray
Ch A inv.	: Blue
Ch B inv.	: Red
Ch Z inv.	: Pink

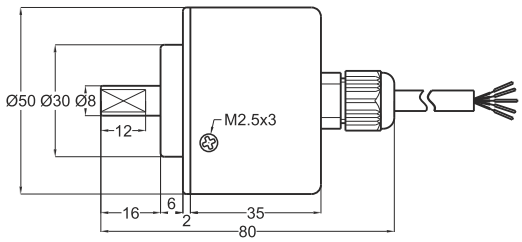
Model	Case Diameter	Case Type	Shaft Diameter	Output	Resolution	Output Channels	Supply Voltage	Connector / Cable	Cable Output
(example) MRI	40	A	R6	HLD	500	Z	V2	2M5	R
MRI	40mm	A : Clamping flange AW : Water proof	R6 : 6mm R8 : 8mm	LTP : Push-pull TTL : TTL Linedriver HLD : High Linedriver	2 ... 1024 ppr.	Z : A, B, Z B : A, B	V1 : 5V DC V2 : 8-24V DC	2M5 : 2,5 meter cable 5M : 5 meter cable 8M : 8 meter cable 10M : 10 meter cable	R : Radial A : Axial

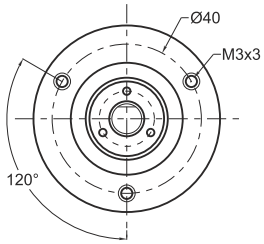
Magnetic incremental encoders

- 50 mm case diameter
- Magnetic incremental encoder
- Pulse options :
  2 - 4 - 8 - 16 - 25 - 32 - 40 - 50 - 64 - 80 - 100 - 125,
  128 - 160 - 200 - 250 - 256 - 400 - 500 - 512 - 1024 ppr.
- IP 54 protection

Technical Specifications

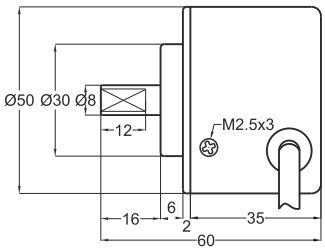
Type of Measurement	Magnetic incremental contactless
Resolution	2 ... 1024 ppr.
Output Channels	A,B,Z or A,$\overline{A}$, B,$\overline{B}$, Z,$\overline{Z}$
Output Type	Push-pull, TTL Linedriver or HTL Linedriver
Supply Voltage	8-24 VDC (Standard) or 5 VDC (Optional)
Power Comsumption (without load)	< 40 mA (24 VDC)
Electrical Connections	2.5m (Standard) 5 Wire + Shield for Pushpull 2.5m (Standard) 8 Wire + Shield for Linedriver
Max. Permissible Shaft Loading Radial Axial	100 N 60 N
Max. Speed	3500 rpm
Shaft Diameter	Ø6 - 8 mm
Shaft Material	Stainless Steel
Case Diameter	Ø50 mm
Case Material	Aluminium / Steel
IP Degree	IP 54
Operating Temperature	-20°C ... +80°C
Storage Temperature	-30°C ... +90°C

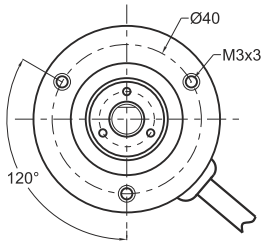




Push-pull / TTL Linedriver Cable Output

+V	: Brown
0V	: White
GND	: Shield
Ch A	: Yellow
Ch B	: Green
Ch Z	: Gray
Ch A inv.	: Blue
Ch B inv.	: Red
Ch Z inv.	: Pink





HTL Linedriver Cable Output

+V	: Brown
0V	: White
GND	: Shield
Ch A	: Yellow
Ch B	: Green
Ch Z	: Gray
Ch A inv.	: Blue
Ch B inv.	: Red
Ch Z inv.	: Pink

Model	Case Diameter	Case Type	Shaft Diameter	Output	Resolution	Output Channels	Supply Voltage	Connector / Cable	Cable Output
(example) MRI	50	A	R6	HLD	500	Z	V2	2M5	R
MRI	50mm	A : Clamping flange AW : Water proof	R6 : 6mm R8 : 8mm	LTP : Push-pull TTL : TTL Linedriver HLD : High Linedriver	2 ... 1024 ppr.	Z : A, B, Z B : A, B	V1 : 5V DC V2 : 8-24V DC	2M5 : 2,5 meter cable 5M : 5 meter cable 8M : 8 meter cable 10M : 10 meter cable	R : Radial A : Axial

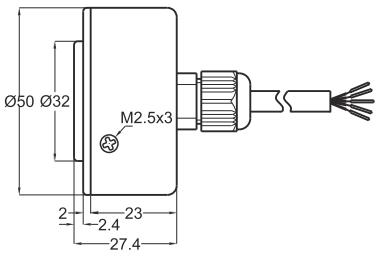
MRI 50F

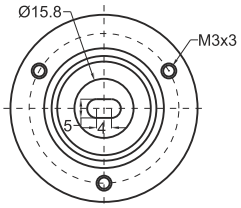
Magnetic incremental encoders
Flat body

- 50 mm case diameter
- Magnetic rotary encoder
- Pulse options :
  2 - 4 - 8 - 16 - 25 - 32 - 40 - 50 - 64 - 80 - 100 - 125,
  128 - 160 - 200 - 250 - 256 - 400 - 500 - 512 - 1024 ppr.
- Flat - rodless type
- IP 66 for water proof type
- Water proof types are usefull for stone machinery and for any outdoor applications

Technical Specifications

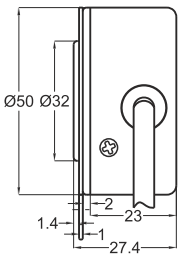
Type of Measurement	Magnetic incremental contactless
Resolution	2 ... 1024 ppr.
Output Channels	A,B,Z or A,$\overline{A}$, B,$\overline{B}$, Z,$\overline{Z}$
Output Type	Pushpull, Linedriver or High Linedriver
Supply Voltage	8-24 VDC (Standard) or 5 VDC (Optional)
Power Comsumption (without load)	< 40 mA (24 VDC)
Electrical Connections	2.5m Cable (Standard), Connector (Optional)
Max. Speed	3500 rpm
Case Diameter	Ø50 mm
Case Material	Aluminium / Steel
Operating Temperature	-20°C ... +80°C
Storage Temperature	-30°C ... +90°C
Water Proof	Optional

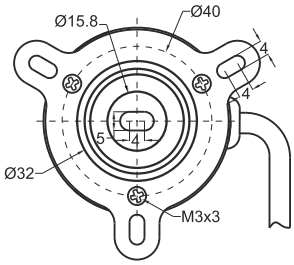




Push-pull Cable Output

+V : Brown
0V : White
GND : Shield
Ch A : Yellow
Ch B : Green
Ch Z : Gray





TTL - HTL Linedriver Cable Output

+V : Brown
0V : White
GND : Shield
Ch A : Yellow
Ch B : Green
Ch Z : Gray
Ch A inv. : Blue
Ch B inv. : Red
Ch Z inv. : Pink

Model	Case Diameter	Output	Resolution	Output Channels	Supply Voltage	Connector / Cable	Cable Output
(example) MRI	50F	HTL	512	Z	V2	2M5	R
MRI	50F : Flat case 50FW : Water proof Flat case	LTP : Push-pull TTL : TTL Linedriver HTL : High Linedriver	2 ... 1024 ppr.	Z : A, B, Z B : A, B	V1 : 5V DC V2 : 8-24V DC	2M5 : 2,5 meter cable 5M : 5 meter cable 8M : 8 meter cable 10M : 10 meter cable	R : Radial A : Axial

Magnetic incremental encoders

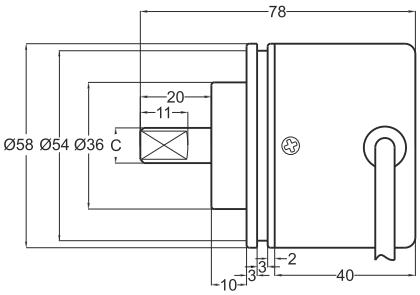
- 58 mm case diameter
- Magnetic incremental rotary encoder
- Pulse options :
  2 - 4 - 8 - 16 - 25 - 32 - 40 - 50 - 64 - 80 - 100 - 125,
  128 - 160 - 200 - 250 - 256 - 400 - 500 - 512 - 1024 ppr.
- Very useful for outdoor applications

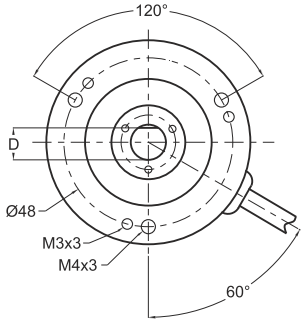
MRI A
Clamping flange

MRI B
Synchro flange

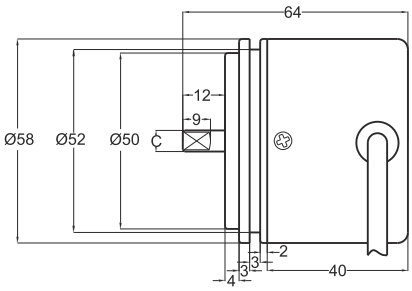
Technical Specifications

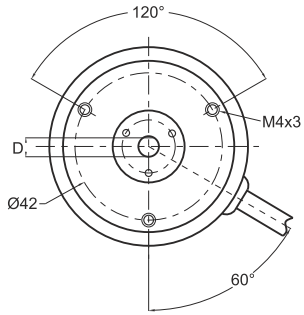
Type of Measurement	Magnetic incremental non-contact
Resolution	2 ... 1024 ppr.
Output Channels	A,B,Z or A,$\overline{A}$, B,$\overline{B}$, Z,$\overline{Z}$
Output Type	Pushpull, TTL Linedriver, HTL Linedriver
Supply Voltage	5V DC, 8-24V DC, 5-24V DC
Power Comsumption	< 40 mA (24 VDC)
Electrical Connections	2.5m (Standard) 5 Wire + Shield for Pushpull 2.5m (Standard) 8 Wire + Shield for Linedriver
Max. Permissible Shaft Loading Radial Axial	60 N 40 N
Max. Speed	3.500 rpm
Shaft Diameter	Ø6 - 8 - 10 mm
Shaft Material	Stainless Steel
Case Diameter	Ø58 mm
Case Material	Aluminium / Steel
IP Degree	IP 54
Operating Temperature	-20°C ... +80°C
Storage Temperature	-30°C ... +90°C





A TYPE (Clamping flange)





B TYPE (Synchro flange)

Push-pull Cable Output

+V : Brown
0V : White
GND : Shield
Ch A : Yellow
Ch B : Green
Ch Z : Gray

TTL - HTL Linedriver Cable Output

+V : Brown
0V : White
GND : Shield
Ch A : Yellow
Ch B : Green
Ch Z : Gray
Ch A inv. : Blue
Ch B inv. : Red
Ch Z inv. : Pink

	AR (shaft)		BR (shaft)	
	C	D	C	D
MRI 58	Ø6mm	5mm	Ø6mm	5mm
	Ø8mm	7mm	Ø8mm	7mm
	Ø10mm	9mm	Ø10mm	9mm

Model	Case Diameter	Case Type	Shaft Diameter	Output	Resolution	Output Channels	Supply Voltage	Connector / Cable	Cable Output
(example) MRI	58	A	R8	HLD	512	ZZ	V2	2M5	R
MRI	58mm	A : Clamping flange AW : Water proof B : Synchro flange BW : Water proof	R6 : 6mm R8 : 8mm R10 : 10mm	LTP : Totempole TTL : TTL Linedriver HLD : HTL Linedriver	2 ... 1024 ppr.	Z : A, B, Z ZZ : A$\overline{A}$, B$\overline{B}$, Z$\overline{Z}$	V1 : 5V DC V2 : 8-24V DC	2M5 : 2,5 meter cable 5M : 5 meter cable 8M : 8 meter cable 10M : 10 meter cable	R : Radial A : Axial

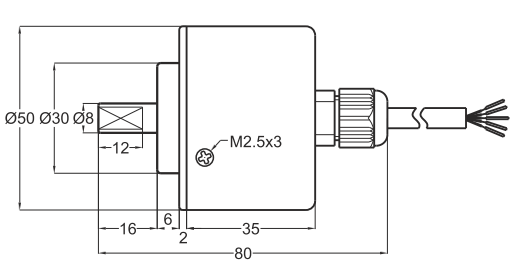
MRV 50A

Magnetic absolute encoders
Voltage output

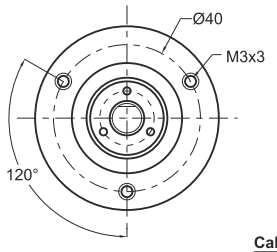
- 50 mm case diameter
- Magnetic absolute rotary encoder
- 5V/360° (Standard), 5V/45°, 90°, 180°, 10bit (Optional)
- IP 54 protection
- Can be used as contactless potentiometer

Technical Specifications

Type of Measurement	Magnetic absolute
Resolution	5V/360° (Standard) 5V/45°, 90°, 180°, 10bit (Optional)
Output Signal	Analogue
Output Type	Voltage Output (0 - 5 VDC)
Supply Voltage	8-24 VDC (Standard) or 5 VDC (Optional)
Power Comsumption (without load)	< 40 mA (24 VDC)
Electrical Connections	2.5m Cable (Standard)
Max. Permissible Shaft Loading Radial Axial	100 N 60 N
Max. Speed	1000 rpm
Shaft Diameter	Ø8 mm
Shaft Material	Stainless Steel
Case Diameter	Ø50 mm
Case Material	Aluminium / Steel
IP Degree	IP 54
Operating Temperature	-20°C ... +80°C
Storage Temperature	-30°C ... +90°C

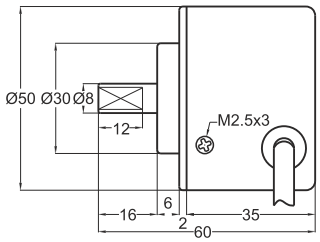


Shaft Type / Axial

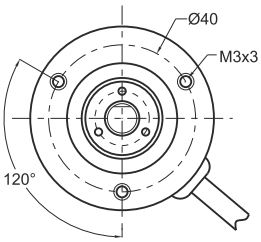


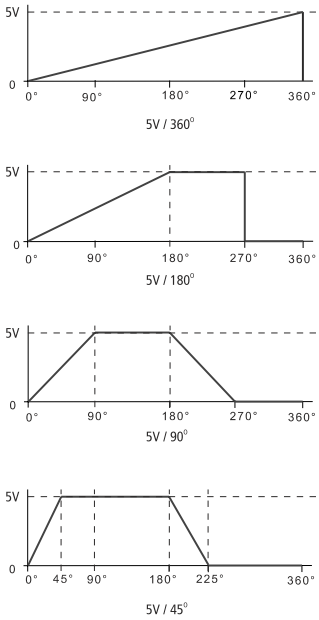
Cable output

+V : Brown
0V : White
Vout : Yellow
GND : Shield



Shaft Type / Radial





OUTPUT SIGNAL

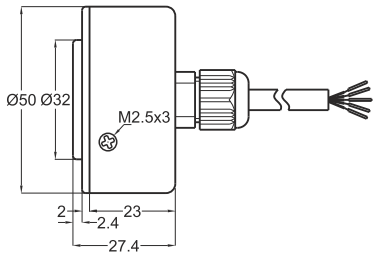
Model	Case Diameter	Referance	Supply Voltage	Connector / Cable	Cable Output
(example) MRV	50A	5V/360°	V2	2M5	R
MRV	50A : Standard case 50AW : Water proof	5V / 360° 5V / 180° 5V / 90° 5V / 45° 10bit	V1 : 5V DC V2 : 8-24V DC	2M5 : 2,5 meter cable 5M : 5 meter cable 8M : 8 meter cable 10M : 10 meter cable	R : Radial A : Axial

Magnetic absolute encoders
Voltage output / Flat body

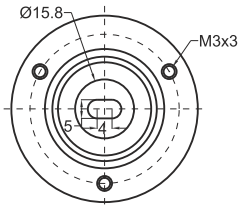
- 50 mm case diameter
- Magnetic absolute rotary encoder
- 5V/360° (Standard), 5V/45°, 90°, 180°, 10bit (Optional)
- IP 54 protection
- Can be used as contactless potentiometer

Technical Specifications

Type of Measurement	Magnetic absolute
Resolution	5V/360° (Standard) 5V/45°, 90°, 180°, 10bit (Optional)
Output Signal	Voltage
Output Type	Voltage Output (0 - 5 VDC)
Supply Voltage	8-24 VDC (Standard) or 5 VDC (Optional)
Power Comsumption (without load)	< 40 mA (24 VDC)
Electrical Connections	2.5m Cable (Standard), Connector (Optional)
Max. Speed	1000 rpm
Shaft Material	Stainless Steel
Case Diameter	Ø50 mm
Case Material	Aluminium / Steel
IP Degree	IP 54
Operating Temperature	-20°C ... +80°C
Storage Temperature	-30°C ... +90°C

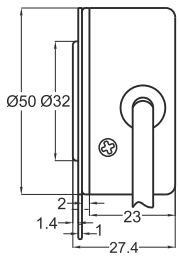


Shaft Type / Axial

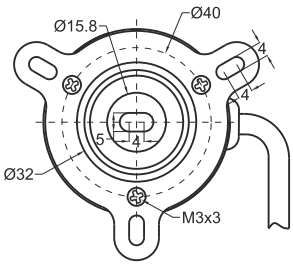


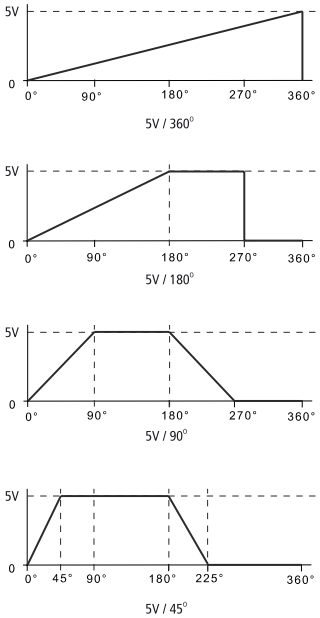
Cable output

+V : Brown
0V : White
Vout : Yellow
GND : Shield



Shaft Type / Radial





OUTPUT SIGNAL

Model	Case Diameter	Resolution	Output Type	Supply Voltage	Connector / Cable	Cable Output
(example) MRV	50F	5V / 180°	VO	V1	2M5	R
MRV	50F : Flat case 50FW : Water proof	5V / 360° 5V / 180° 5V / 90° 5V / 45° 10bit	VO : Voltage output	V1 : 5V DC V2 : 8-24V DC	2M5 : 2,5 meter cable 5M : 5 meter cable 8M : 8 meter cable 10M : 10 meter cable	R : Radial A : Axial

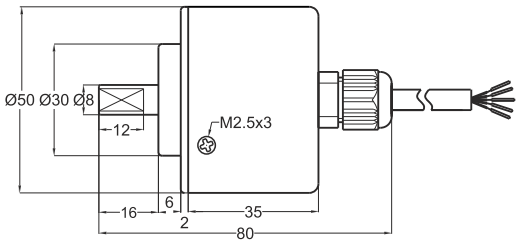
MRA 50A

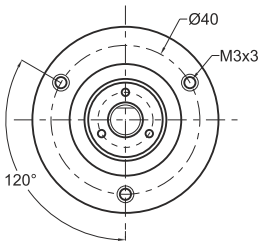
Magnetic absolute encoders
SSI output

- 50 mm case diameter
- Magnetic absolute rotary encoder
- SSI Absolute (10 bit / 360°)
- 2.5m cable (standard) with Connector (Optional) electrical connection

Technical Specifications

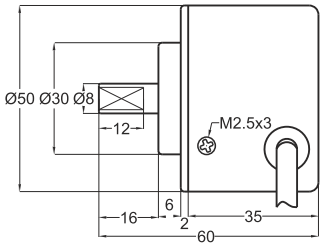
Type of Measurement	Magnetic absolute
Resolution	10 bit / 360°
Output Type	SSI
Output Signal Type	5V TTL
Supply Voltage	8-24 VDC (Standard) or 5 VDC (Optional)
Power Comsumption (without load)	< 40mA (24 VDC)
Electrical Connections	2.5m Cable (Standard), Connector (Optional)
Max. Permissible Shaft Loading Radial Axial	100 N 60 N
Max. Speed	1000 rpm
Rod Diameter	Ø8 mm
Rod Material	Stainless Steel
Case Diameter	Ø50 mm
Case Material	Aluminium / Steel
Operating Temperature	-20°C ... +80°C
Storage Temperature	-30°C ... +90°C

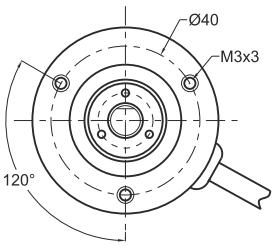




Cable output

+V : Brown
0V : White
CLK : Green
CSN : Yellow
DO : Gray





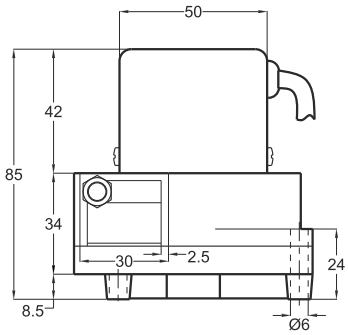
Model	Case Diameter	Output Signal Type	Output Type	Supply Voltage	Connector / Cable	Cable Output
(example) MRA	50A	TT	SSI	V1	2M5	R
MRA	50A : Clamping flange 50AW : Water proof	TT : TTL Absolute	SSI	V1 : 5V DC V2 : 8-24V DC	2M5 : 2,5 meter cable 5M : 5 meter cable 8M : 8 meter cable 10M : 10 meter cable	R : Radial A : Axial

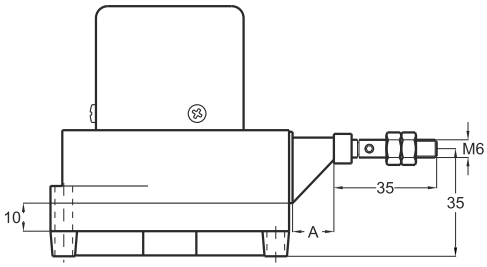
Draw wire potentiometers

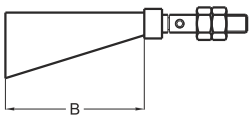
- Measuring strokes 1800 mm or 3600 mm
- 5 kOhm / 10 kOhm resistive type or with internal voltage / current conditioner circuit
- Easy mounting

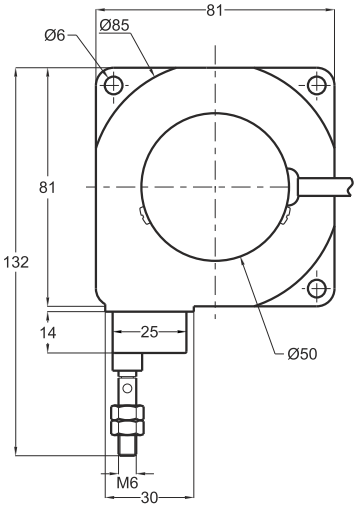
Technical Specifications

Type of Measurement	Resistive types or with voltage / conditioner circuit
Linearity	0,5%, 0,1% or 0,05%
Measurement Stroke	1800 mm or 3600 mm
Output Signal Type	Voltage divider
Output Type	Resistive output, 0-10V or 0-20mA or 4-20mA
Supply Voltage	24V DC max. (for voltage output), 13-30V
Electrical Connections	2.5m Cable (Standard)
Case Material	Aluminium / Steel / ABS Plastic
IP Degree	IP 54
Operating Temperature	-20°C ... +80°C
Storage Temperature	-30°C ... +90°C

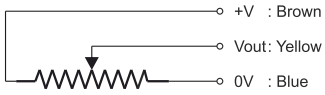




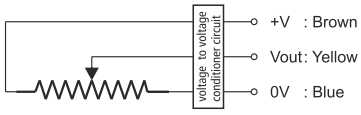




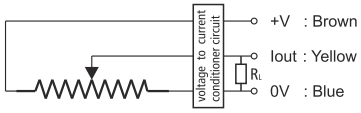
		Measurement Stroke
A	14 mm	1800 mm
B	50 mm	3600mm



POTENTIOMETRIC OUTPUT



0-10V VOLTAGE OUTPUT



0-20mA / 4-20mA CURRENT OUTPUT

Model	Measurement Stroke	Linearity	Output	Connector / Cable	Cable Output
(example) DWP	1800	C	5K	2M5	R
DWP	900mm 1800mm 3600mm	C : 0,5% D : 0,1%	5K : 5Ω 10K : 10Ω V10 : 0-10V I 4 : 4-20mA I 20 : 0-20mA 20K : 3600	2M5 : 2,5 meter cable 5M : 5 meter cable 8M : 8 meter cable 10M : 10 meter cable	R : Radial

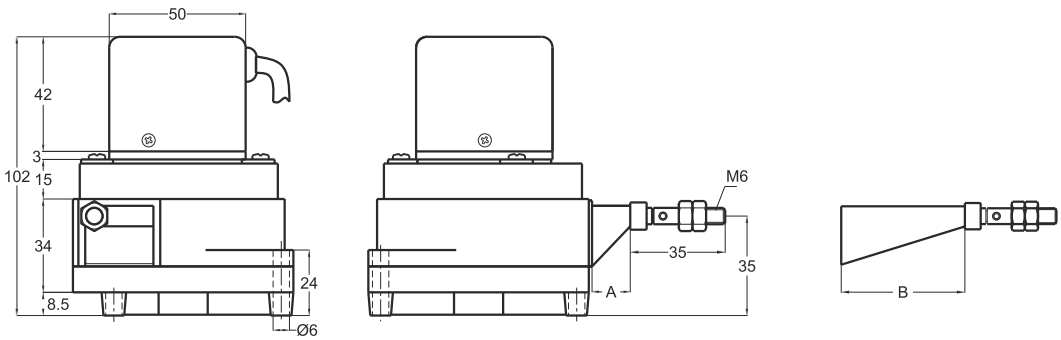
DWE

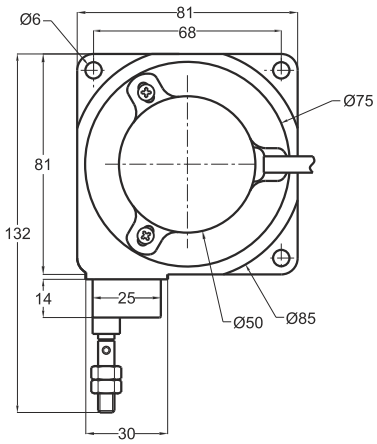
Draw wire encoders

- Measuring strokes 500 - 1000 - 1500 - 2000 - 2500 - 3000 - 3500 mm
- Incremental 50 µm / 25 µm resolution
- Push-pull, TTL Linedriver or HTL Linedriver
- Easy mounting
- High protection degree

Technical Specifications

Type of Measurement	Optical
Resolution	0,2 mm/pulse
Measurement Stroke	500 - 1000 - 1500 - 2000 - 2500, 3000 - 3500 mm
Output Signal	A,B,Z or A,$\overline{A}$, B,$\overline{B}$, Z,$\overline{Z}$
Output Signal Type	Push-pull, TTL Linedriver or HTL Linedriver
Supply Voltage	8-24 VDC, 5 VDC or 5-30 VDC
Power Comsumption (without load)	< 40 mA (24 VDC)
Electrical Connections	2.5m Cable (Standard)
IP Degree	IP 54
Case Material	Aluminium / Steel / ABS Plastic
Operating Temperature	-20°C ... +80°C
Storage Temperature	-30°C ... +90°C





		Measurement Stroke
A	14 mm	2500 mm
B	50 mm	From 2500 up to 3500 mm

Push-pull Cable Output

+V : Brown
0V : White
GND : Shield
Ch A : Yellow
Ch B : Green
Ch Z : Gray

TTL - HTL Linedriver Cable Output

+V : Brown
0V : White
GND : Shield
Ch A : Yellow
Ch B : Green
Ch Z : Gray
Ch A inv. : Blue
Ch B inv. : Red
Ch Z inv. : Pink

Model	Measurement Stroke	Output	Resolution	Output Signal	Connector / Cable	Cable Output
(example) DWE	1500	LTP	P2000	Z	2M5	R
DWE	500 mm 1000 mm 1500 mm 2000 mm 2500 mm 3000 mm	LTP : Pushpull TTL : TTL Linedriver HTL : High Linedriver	P2000 : 0,1mm/puls P1000 : 0,2mm/puls P500 : 0,4mm/puls	Z : A, B, Z B : A, B	2M5 : 2,5 meter cable 5M : 5 meter cable 8M : 8 meter cable 10M : 10 meter cable	R : Radial A : Axial

Pressure Transmitter

- 10, 20, 50, 100, 150, 200, 250, 400bar
- 0-10V, 0-20mA, 4-20mA output

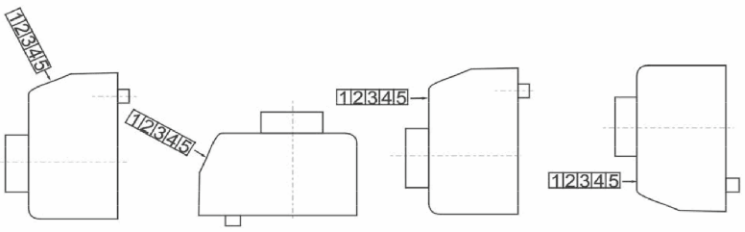
Technical Specifications

Pressure range	10, 20, 50, 100, 150, 200, 250, 400bar
Output signals	0-10V, 0-20mA, 4-20mA
Supply voltage	12-24VDC, 8-24VDC
Accuracy	%1 - %5 - %0,5
Electrical connection	4 pin connector (standard)
Working temperature	-20°C / +80°C
Case material	Stainless steel
IP degree	IP 65

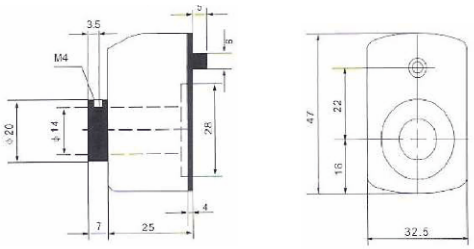
Model	Mechanical thread	Presure range	Accuracy	Output	Connector / Cable
(example) OPTG	G1/4	B150	C	I4	C1
OPTG (gauge) OPTA (absolute)	G1/4 : 1/4 gas male	10bar 250bar 20bar 400bar 50bar 100bar 150bar 200bar	A : ±%5 FS B : ±%1 FS C : ±%0,5 FS	I4 : 4-20mA I20 : 0-20mA V10 : 0-10V	C1 : 4 pin connector

Digital Position Indicator

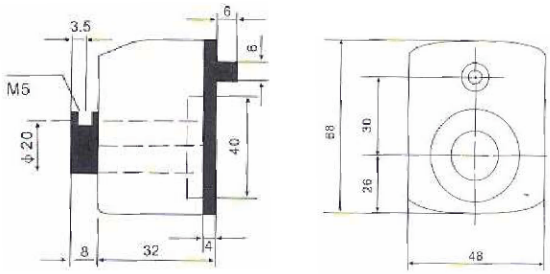
- 14 - 20mm hollow shaft
- Axial pitch options :
  1 - 1,5 - 2 - 2,5 - 3 - 4 - 5 - 6 - 8 - 10mm



TP-MC-1 type 1 **TP-MC-2 type 2** **TP-MC-3 type 3** **TP-MC-4 type 4**



Ø 14mm



Ø 20mm

Model	Type	Axial pitch	Counter direction	Hole diameter	Color
(example) TP-MC	1	01	I	14	OR
TP-MC	1 : type 1 2 : type 2 3 : type 3 4 : type 4	01 - 01,5 - 02 - 02,5 03 - 04 - 05 - 06 - 08 10mm	I : Clockwise for increase E : Counter clockwise for decrease	14mm 20mm	OR : Orange BL : Black

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