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POSIWIRE®

Cable Extension Position Sensors

**WS85 with internal magnetic encoder
Position Sensor**

Datasheet



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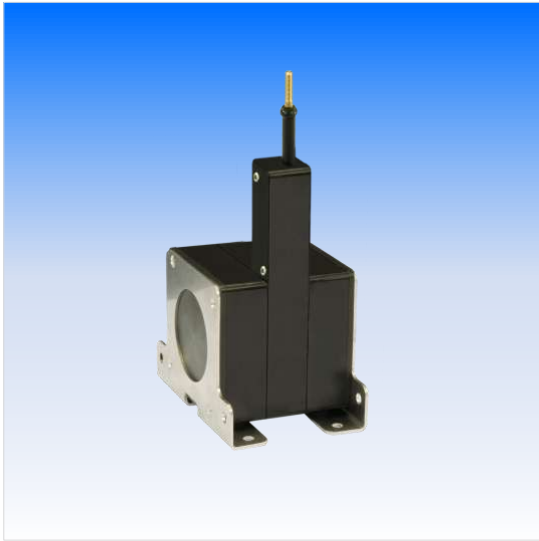
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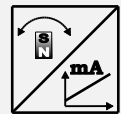
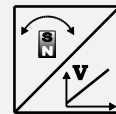
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Magnetic encoder, analog output



Sensor features

- With magnetic absolute encoder
- Measurement range up to 6000 mm
- Protection class IP67/IP69 (with mating connector only)
- Analog output
- Absolute measurement



Specifications

Output	U2 = Voltage 0.5 ... 10 V U8 = Voltage 0.5 ... 4.5 V I1 = Current 4 ... 20 mA, 3 wire
Resolution	<0.002% f.s.
Linearity	±0.10% f.s. (standard) ±0.05% f.s. (optional)
Sensing device	Magnetic absolute encoder
Housing material	Plastic and stainless steel measuring cable: stainless steel
Protection class	IP67/IP69 (with mating connector only)
Connection	Connector M12, 5 pin
Shock	DIN EN 60068-2-27:2010, 100 g/11 ms, 100 shocks
Vibration	DIN EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles
Temperature range	-40 ... +85 °C
Weight	Approx. 1250 g
EMC	DIN EN 61326-1:2013

Cable forces typical at = 20 °C	Measurement range	Maximum pull-out force	Minimum pull-in force
	[mm]	[N]	[N]
	4000	7.2	4.3
	5000	7.2	4.3
	6000	7.4	4.3

Order code

WS85 – 1 – 2 – 3 – 4 – 5 – 6

1 Measurement range (in mm)

4000 / 5000 / 6000

2 Output

U2 = Voltage 0.5 ... 10 V
U8 = Voltage 0.5 ... 4.5 V
I1 = Current 4 ... 20 mA, 3 wire

3 Signal characteristics

A = increasing signal (e.g. 4 ... 20 mA)
D = decreasing signal (e.g. 20 ... 4 mA)

4 Linearity

L10 = ±0.10% f.s. (standard)
L05 = ±0.05% f.s. (optional)

5 Cable fixing

M4 = M4 cable fixing
SB0 = cable clip

6 Connection

M12R5 = Connector M12, 5 pin

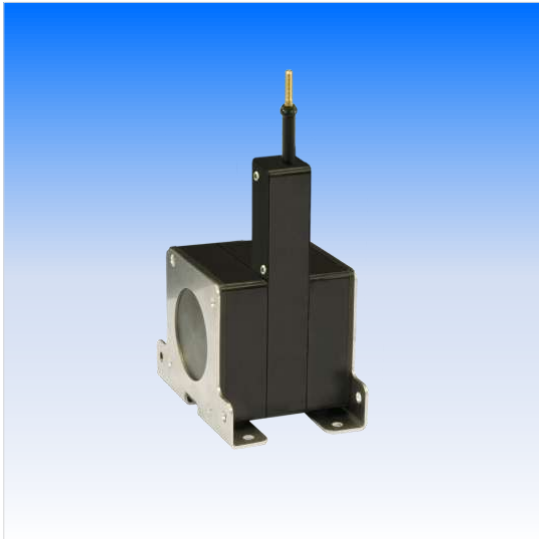
Order example

WS85 – 6000 – U2 – A – L10 – M4 – M12R5

Accessories:

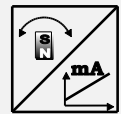
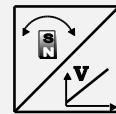
Connector cable (see page 25)

Magnetic encoder, analog output, programmable



Sensor features

- With magnetic absolute encoder
- Measurement range up to 6000 mm
- Protection class IP67/IP69 (with mating connector only)
- Analog output, programmable
- Absolute measurement



Specifications

Output	U2/PMU = Voltage 0.5 ... 10 V, programmable U8/PMU = Voltage 0.5 ... 4.5 V, programmable I1/PMU = Current 4 ... 20 mA, 3 wire, programmable
Resolution	<0.002% f.s.
Linearity	±0.10% f.s. (standard) ±0.05% f.s. (optional)
Sensing device	Magnetic absolute encoder
Housing material	Plastic and stainless steel measuring cable: stainless steel
Protection class	IP67/IP69 (with mating connector only)
Connection	Connector M12, 5 pin
Shock	DIN EN 60068-2-27:2010, 100 g/11 ms, 100 shocks
Vibration	DIN EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles
Temperature range	-40 ... +85 °C
Weight	Approx. 1250 g
EMC	DIN EN 61326-1:2013

Cable forces typical at = 20 °C	Measurement range	Maximum pull-out force	Minimum pull-in force
	[mm]	[N]	[N]
	4000	7.2	4.3
	5000	7.2	4.3
	6000	7.4	4.3

Order code

WS85 – 1 – 2 – 3 – 4 – 5 – 6

1 Measurement range (in mm)

4000 / 5000 / 6000

2 Output

U2/PMU = Voltage 0.5 ... 10 V, programmable

U8/PMU = Voltage 0.5 ... 4.5 V, programmable

I1/PMU = Current 4 ... 20 mA, 3 wire, programmable

3 Signal characteristics

A = increasing signal (e.g. 4 ... 20 mA)

D = decreasing signal (e.g. 20 ... 4 mA)

4 Linearity

L10 = ±0.10% f.s. (standard)

L05 = ±0.05% f.s. (optional)

5 Cable fixing

M4 = M4 cable fixing

SB0 = cable clip

6 Connection

M12R5 = Connector M12, 5 pin

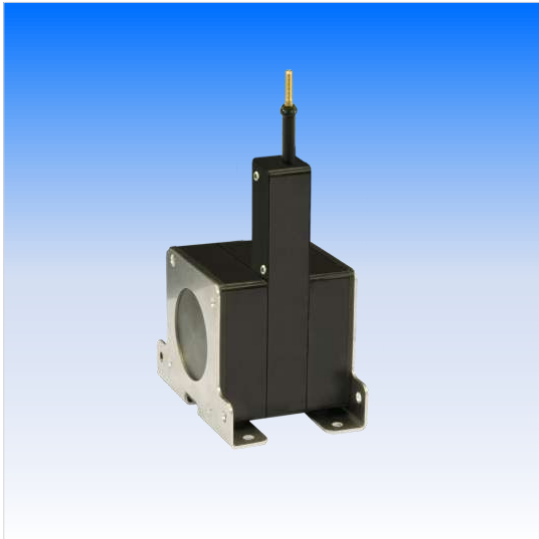
Order example

WS85 – 6000 – U2/PMU – A – L10 – M4 – M12R5

Accessories:

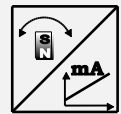
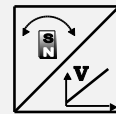
Connector cable (see page 26)

Magnetic encoder, analog output, redundant



Sensor features

- With magnetic absolute encoder
- Measurement range up to 6000 mm
- Protection class IP67/IP69 (with mating connector only)
- Analog output, redundant
- Absolute measurement



Specifications

Output	U2R U8R I1R	= Voltage 0.5 ... 10 V, redundant = Voltage 0.5 ... 4.5 V, redundant = Current 4 ... 20 mA, 3 wire, redundant
Resolution	<0.002% f.s.	
Linearity	±0.10% f.s. (standard) ±0.05% f.s. (optional)	
Sensing device	Magnetic absolute encoder	
Housing material	Plastic and stainless steel measuring cable: stainless steel	
Protection class	IP67/IP69 (with mating connector only)	
Connection	Connector M12, 8 pin	
Shock	DIN EN 60068-2-27:2010, 100 g/11 ms, 100 shocks	
Vibration	DIN EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles	
Temperature range	-40 ... +85 °C	
Weight	Approx. 1250 g	
EMC	DIN EN 61326-1:2013	

Cable forces typical at = 20 °C	Measurement range	Maximum pull-out force	Minimum pull-in force
	[mm]	[N]	[N]
	4000	7.2	4.3
	5000	7.2	4.3
	6000	7.4	4.3

Order codeWS85 – 1 – 2 – 3 – 4 – 5 – 6**1 Measurement range (in mm)**

4000 / 5000 / 6000

2 Output

U2R = Voltage 0.5 ... 10 V, redundant
U8R = Voltage 0.5 ... 4.5 V, redundant
I1R = Current 4 ... 20 mA, 3 wire, redundant

3 Signal characteristics

A/A = Output 1 increasing, output 2 increasing
A/D = Output 1 increasing, output 2 decreasing
D/D = Output 1 decreasing, output 2 decreasing

4 Linearity

L10 = ±0.10% f.s. (standard)
L05 = ±0.05% f.s. (optional)

5 Cable fixing

M4 = M4 cable fixing
SB0 = cable clip

6 Connection

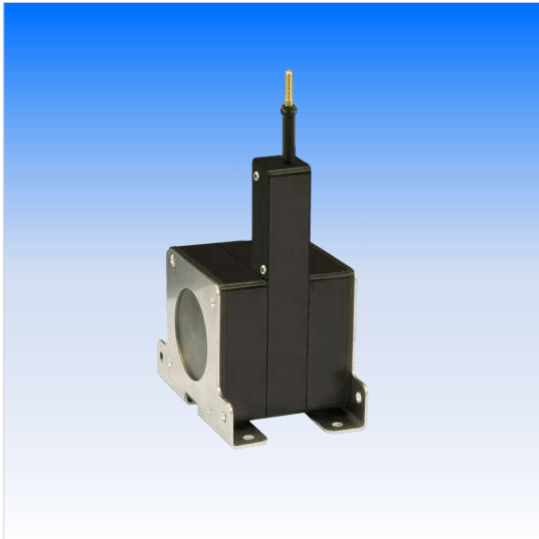
M12R8 = Connector M12, 8 pin

Order example

WS85 – 6000 – I1R – A/D – L10 – M4 – M12R8
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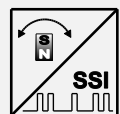
Accessories:**Connector cable (see page 27)**

Magnetic encoder, digital output SSI



Sensor features

- With magnetic absolute encoder
- Measurement range up to 6000 mm
- Protection class IP67/IP69 (with mating connector only)
- Digital output SSI
- Absolute measurement



Specifications

Output	MSSI = SSI synchronous serial interface
Resolution	50 / 100
Linearity	±0.10% f.s. (standard) ±0.05% f.s. (optional)
Sensing device	Magnetic absolute encoder
Housing material	Plastic and stainless steel measuring cable: stainless steel
Protection class	IP67/IP69 (with mating connector only)
Connection	Connector M12, 8 pin
Shock	DIN EN 60068-2-27:2010, 100 g/11 ms, 100 shocks
Vibration	DIN EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles
Temperature range	-40 ... +85 °C
Weight	Approx. 1250 g
EMC	DIN EN 61326-1:2013

Cable forces typical at = 20 °C	Measurement range	Maximum pull-out force	Minimum pull-in force
	[mm]	[N]	[N]
	4000	7.2	4.3
	5000	7.2	4.3
	6000	7.4	4.3

Order code

WS85 – 1 – 2 – 3 – 4 – 5 – 6

1 Measurement range (in mm)

4000 / 5000 / 6000

2 Resolution (in µm)

50 / 100

3 Output

MSSI = SSI synchronous serial interface

4 Linearity

L10 = ±0.10% f.s. (standard)
L05 = ±0.05% f.s. (optional)

5 Cable fixing

M4 = M4 cable fixing
SB0 = cable clip

6 Connection

M12R8 = Connector M12, 8 pin

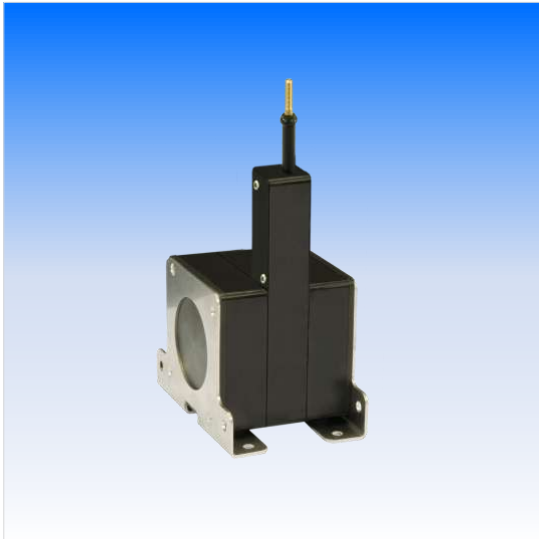
Order example

WS85 – 6000 – 50 – MSSI – L10 – M4 – M12R8

Accessories:

Connector cable (see page 27)

Magnetic encoder, digital output CAN Bus



Sensor features

- With magnetic absolute encoder
- Measurement range up to 6000 mm
- Protection class IP67/IP69 (with mating connector only)
- Digital output CAN Bus
- Absolute measurement
- Optional redundant CAN Bus



Specifications

Output	MCANOP = CANopen MCANJ1939 = CAN SAE J1939 MCANOPR = CANopen redundant MCANJ1939R = CAN SAE J1939 redundant
Resolution	setting via CAN Bus
Linearity	±0.10% f.s. (standard) ±0.05% f.s. (optional)
Sensing device	Magnetic absolute encoder
Housing material	Plastic and stainless steel measuring cable: stainless steel
Protection class	IP67/IP69 (with mating connector only)
Connection	Connector M12, 5 pin
Temperature range	-40 ... +85 °C
Weight	Approx. 1250 g
EMC	DIN EN 61326-1:2013

Cable forces typical at = 20 °C	Measurement range	Maximum pull-out force	Minimum pull-in force
	[mm]	[N]	[N]
	4000	7.2	4.3
	5000	7.2	4.3
	6000	7.4	4.3

Order code

WS85 – 1 – 2 – 3 – 4 – 5

1 Measurement range (in mm)

4000 / 5000 / 6000

2 Output

MCANOP = CANopen
MCANJ1939 = CAN SAE J1939
MCANOPR = CANopen redundant
MCANJ1939R = CAN SAE J1939 redundant

3 Linearity

L10 = ±0.10% f.s. (standard)
L05 = ±0.05% f.s. (optional)

4 Cable fixing

M4 = M4 cable fixing
SB0 = cable clip

5 Connection

M12/CAN = Connector M12, 5 pin

Order example

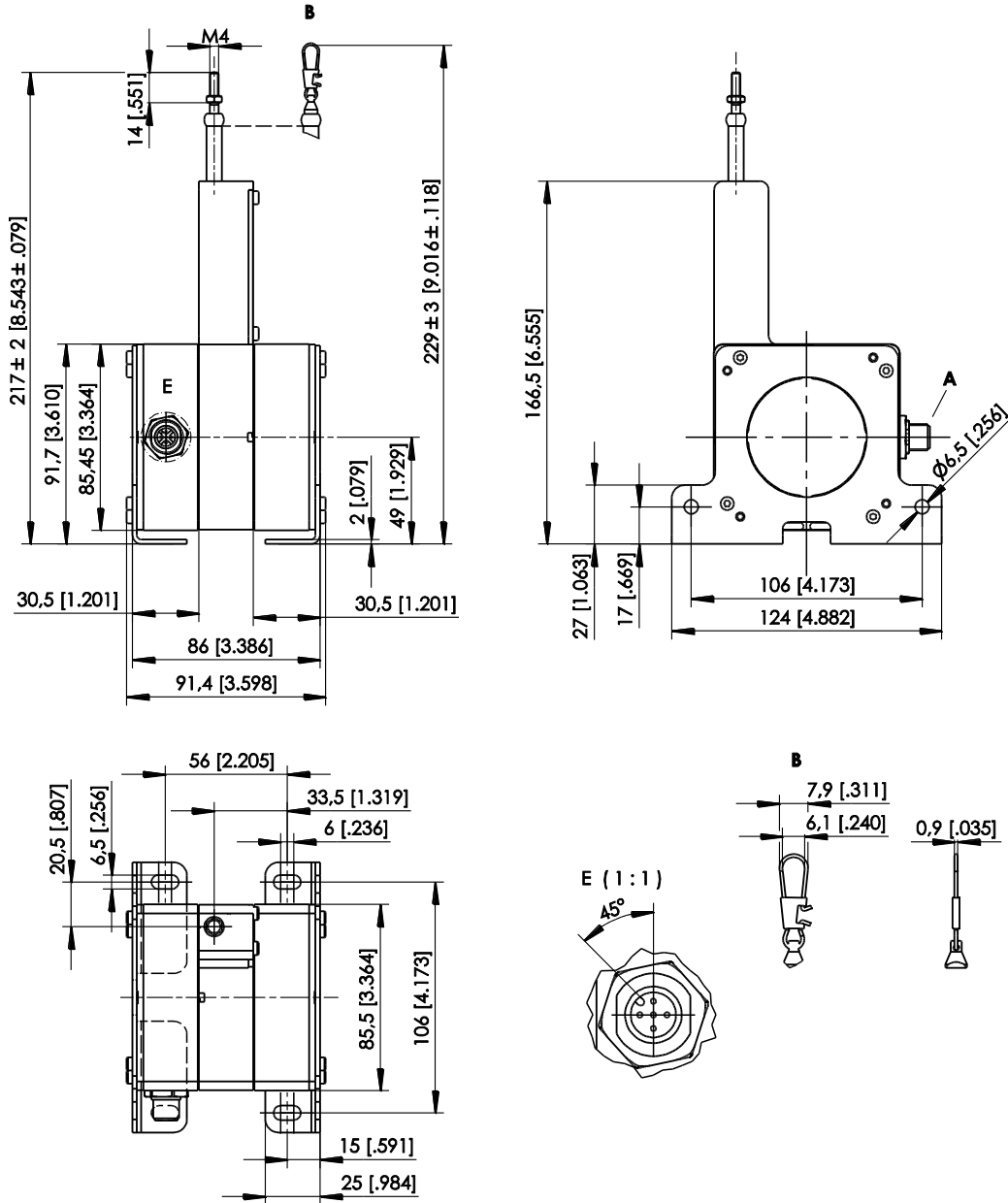
WS85 – 6000 – MCANOP – L10 – M4 – M12/CAN

Accessories:

Connector cable (see page 28)

Dimensions

Measurement range 4000 ... 6000 mm, magnetic encoder output



A – Connector M12

B – Option SB0

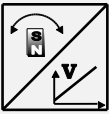
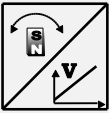
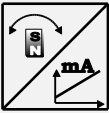
Dimensions in mm [inch]

Dimensions informative only.


For guaranteed dimensions consult factory.

Output specification

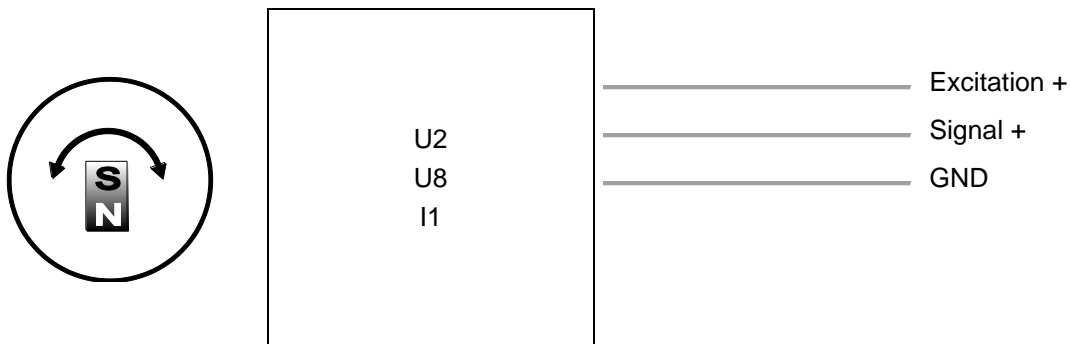
Analog output

U2 Voltage output 0.5 ... 10 V 	Excitation voltage	8 ... 36 V DC
	Excitation current	20 mA typical at 24 V DC 38 mA typical at 12 V DC max. 50 mA
	Output voltage	0.5 ... 10 V DC
	Output current	2 mA max.
	Measuring rate	1 kHz standard
	Stability (temperature)	$\pm 50 \times 10^{-6}$ / °C f.s. (typical)
	Protection	Reverse polarity, short circuit
	Operating temperature	See specification of the respective sensor
	EMC	DIN EN 61326-1:2013
U8 Voltage output 0.5 ... 4.5 V 	Excitation voltage	8 ... 36 V DC
	Excitation current	17 mA typical at 24 V DC 32 mA typical at 12 V DC 50 mA max.
	Output voltage	0.5 ... 4.5 V DC
	Output current	2 mA max.
	Measuring rate	1 kHz standard
	Stability (temperature)	$\pm 50 \times 10^{-6}$ / °C f.s. (typical)
	Protection	Reverse polarity, short circuit
	Operating temperature	See specification of the respective sensor
	EMC	DIN EN 61326-1:2013
I1 Current output 4 ... 20 mA, 3 wires 	Excitation voltage	8 ... 36 V DC
	Excitation current	typical 36 mA at 24 V DC typical 70 mA at 12 V DC 120 mA max.
	Load R _L	500 Ω max.
	Output current	4 ... 20 mA
	Measuring rate	1 kHz standard
	Stability (temperature)	$\pm 50 \times 10^{-6}$ / °C f.s. (typical)
	Protection	Reverse polarity, short circuit
	Operating temperature	See specification of the respective sensor
	EMC	DIN EN 61326-1:2013

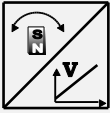
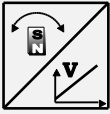
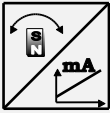
Signal wiring

Signal	Connector pin no.	Cable connection	View to the sensor connector
Excitation +	1	brown	
Signal	2	white	
GND	3	blue	
Do not connect!	4	black	
Do not connect!	5	(grey)	

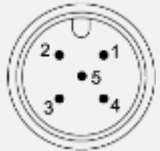
Signal diagram



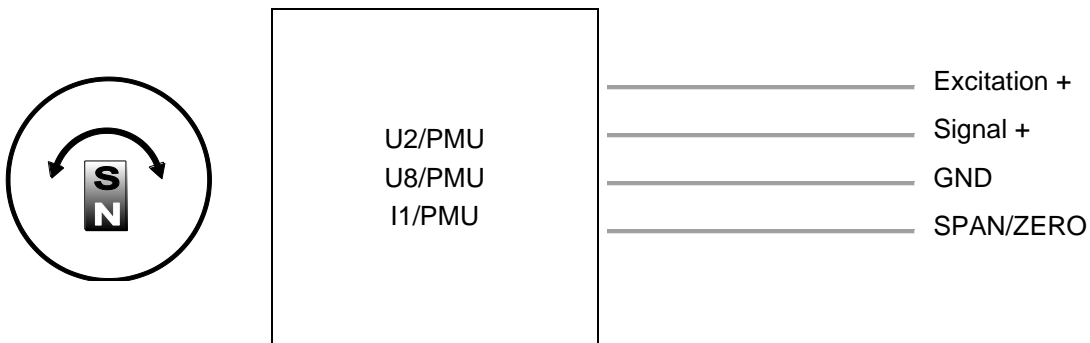
Analog output, programmable

<p>U2/PMU</p> <p>Voltage output 0.5 ... 10 V</p> 	Excitation voltage	8 ... 36 V DC
	Excitation current	20 mA typical at 24 V DC 38 mA typical at 12 V DC max. 50 mA
	Output voltage	0,5 ... 10 V DC
	Output current	2 mA max.
	Measuring rate	1 kHz standard
	Stability (temperature)	$\pm 50 \times 10^{-6} / ^\circ\text{C}$ f.s. (typical)
	Protection	Reverse polarity, short circuit
	Operating temperature	See specification of the respective sensor
	EMC	EN 61326-1:2013
	<p>U8/PMU</p> <p>Voltage output 0.5 ... 4.5 V</p> 	Excitation voltage
Excitation current		17 mA typical at 24 V DC 32 mA typical at 12 V DC max. 50 mA
Output voltage		0.5 ... 4.5 V DC
Output current		2 mA max.
Measuring rate		1 kHz standard
Stabilität (Temperatur)		$\pm 50 \times 10^{-6} / ^\circ\text{C}$ f.s. (typical)
Protection		Reverse polarity, short circuit
Operating temperature		See specification of the respective sensor
EMC		DIN EN 61326-1:2013
<p>I1/PMU</p> <p>Current output 4 ... 20 mA, 3 wires</p> 		Excitation voltage
	Excitation current	typical 36 mA at 24 V DC typical 70 mA at 12 V DC max. 120 mA
	Load R _L	500 Ω max.
	Output current	4 ... 20 mA
	Measuring rate	1 kHz standard
	Stability (temperature)	$\pm 50 \times 10^{-6} / ^\circ\text{C}$ f.s. (typical)
	Protection	Reverse polarity, short circuit
	Operating temperature	See specification of the respective sensor
	EMC	DIN EN 61326-1:2013

Signal wiring

Signal	Connector pin no.	Cable color	View to sensor connector
Excitation +	1	brown	
Signal	2	white	
GND	3	blue	
Do not connect!	4	black	
SPAN/ZERO	5	grey	

Signal diagram



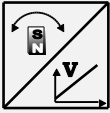
Option -PMU

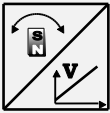
Programming of the start and end value by the customer

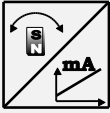
Teach-In of start and end value for the options U2/PMU, I1/PMU, U8/PMU is provided by a binary signal SPAN/ZERO. At the start position connect signal SPAN/ZERO for a period of 2 ... 3 seconds to GND via push button. At the end position connect signal SPAN/ZERO for a period of 5 ... 6 seconds to GND via a push button. The scaling taught in that way will be stored non-volatile.

To reset the sensor to factory default signal ZERO/END must be connected to ground while powering up the sensor for 2 ... 3 seconds. For the option PMZ only teach-in of ZERO position is possible.


Analog output, redundant

<p>U2R</p> <p>Voltage output 0.5 ... 10 V</p> 	Excitation voltage	8 ... 36 V DC
	Excitation current	20 mA typical at 24 V DC 38 mA typical at 12 V DC max. 50 mA per channel
	Output voltage	0.5 ... 10 V DC
	Output current	2 mA max.
	Measuring rate	1 kHz standard
	Stability (temperature)	$\pm 50 \times 10^{-6} / ^\circ\text{C}$ f.s. (typical)
	Protection	Reverse polarity, short circuit
	Operating temperature	See specification of the respective sensor
	EMC	DIN EN 61326-1:2013

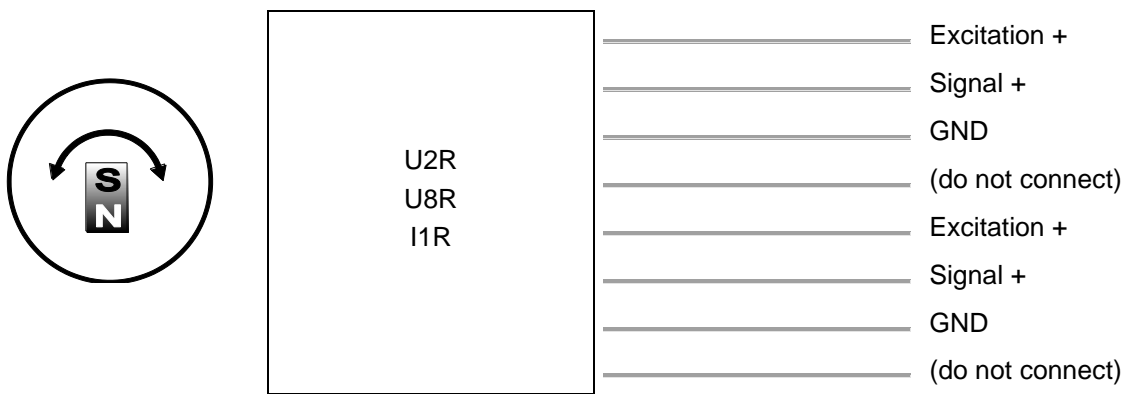
<p>U8R</p> <p>Voltage output 0.5 ... 4.5 V</p> 	Excitation voltage	8 ... 36 V DC
	Excitation current	17 mA typical at 24 V DC 32 mA typical at 12 V DC max. 50 mA per channel
	Output voltage	0.5 ... 4.5 V DC
	Output current	2 mA max.
	Measuring rate	1 kHz standard
	Stability (temperature)	$\pm 50 \times 10^{-6} / ^\circ\text{C}$ f.s. (typical)
	Protection	Reverse polarity, short circuit
	Operating temperature	See specification of the respective sensor
	EMC	DIN EN 61326-1:2013

<p>I1R</p> <p>Current output 4 ... 20 mA, 3 wires</p> 	Excitation voltage	8 ... 36 V DC
	Excitation current	36 mA typical at 24 V DC 76 mA typical at 12 V DC max. 120 mA per channel
	Load R_L	500 Ω max.
	Output current	4 ... 20 mA
	Measuring rate	1 kHz standard
	Stability (temperature)	$\pm 50 \times 10^{-6} / ^\circ\text{C}$ f.s. (typical)
	Protection	Reverse polarity, short circuit
	Operating temperature	See specification of the respective sensor
	EMC	DIN EN 61326-1:2013

Signal wiring

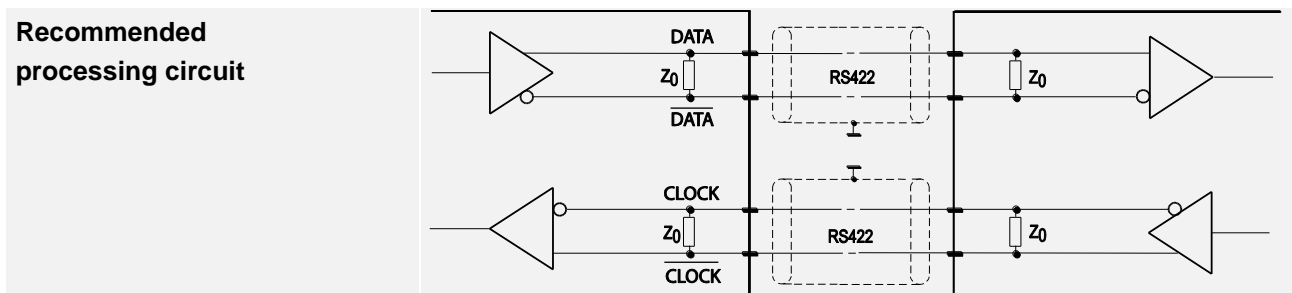
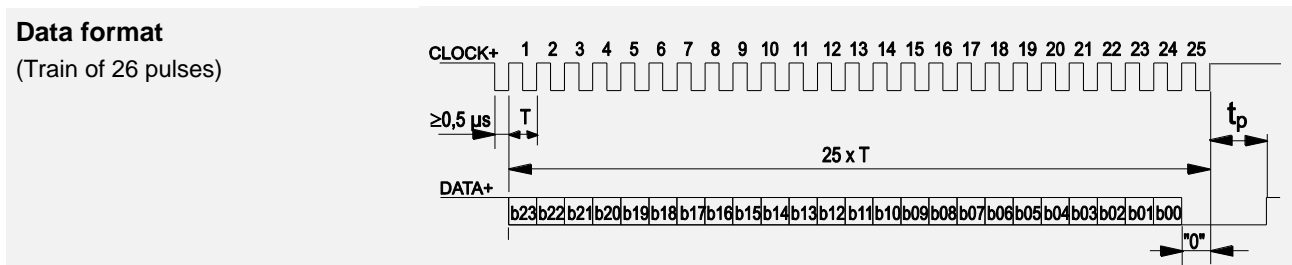
Channel	Signal	Connector pin no.	Cable color	View to the sensor connector
1	Excitation +	1	white	
1	Signal	2	brown	
1	GND	3	green	
1	Do not connect!	4	yellow	
2	Excitation +	5	grey	
2	Signal	6	pink	
2	GND	7	blue	
2	Do not connect!	8	red	

Signal diagram



Digital output SSI


MSSI Synchronous serial SSI 	Interface	EIA RS-422
	Excitation voltage	8 ... 36 V DC
	Excitation current	19 mA typical at 24 V DC 35 mA typical at 12 V DC max. 80 mA
	Clock frequency	100 kHz ... 500 kHz
	Code	Gray-Code, continuous progression
	Delay between pulse trains (t_p)	30 μ s min.
	Stability (temperature)	$\pm 50 \times 10^{-6}$ / °C f.s. (typical)
	Operating temperature	See specification of the respective sensor
	Protection	Reverse polarity, short circuit
	EMC	DIN EN 61326-1:2013




Transmission rate	Cable length	Baud rate
	50 m	100-400 kHz
	100 m	100-300 kHz

Note:
Extension of the cable length will reduce the maximum transmission rate.


Signal wiring

Signal	Connector pin no.	Cable color	View to sensor connector
Excitation +	1	white	
Excitation GND	2	brown	
CLOCK	3	green	
$\overline{\text{CLOCK}}$	4	yellow	
DATA	5	grey	
$\overline{\text{DATA}}$	6	pink	
-	7	blue	
-	8	red	


Digital output CANopen

MCANOP, CANOPR CANopen 	CAN specification	ISO 11898, Basic and Full CAN 2.0 B
	Communication profile	CANopen CiA 301 V 4.02, Slave
	Encoder profile	Encoder CiA 406 V 3.2
	Error Control	Node Guarding, Heartbeat, Emergency Message
	Node ID	Adjustable via LSS, default: 127
	PDO	3 TxPDO, 0 RxPDO, no linking, static mapping
	PDO Modes	Event-/Time triggered, Remote-request, Sync cyclic/acyclic
	SDO	1 Server, 0 Client
	CAM	8 cams
	Certified	Yes
	Transmission rate	50 kBit bis 1 Mbit, adjustable via LSS, default: 125 kBit
	Bus connection	M12 connector, 5 pin
	Integrated bus terminating resistor	120Ω adjustable by the customer
	Bus, galvanic isolated	no

Specifications	Excitation voltage	8 ... 36 V DC
	Excitation current	20 mA typical at 24 V DC 40 mA typical at 12 V DC 80 mA max.
	Measuring rate	1 kHz (asynchronous)
	Stability (temperature)	±50 x 10 ⁻⁶ /°C f.s. (typical)
	Repeatability	1 LSB
	Operating temperature	See specification of the respective sensor
	Protection	Reverse polarity, short circuit
	Dielectric strength	1 kV (V AC, 50 Hz, 1 min.)
	EMC	EN 61326-1:2013

Signal wiring	Signal	Connector pin no.	View to the sensor connector
	Shield	1	
	Excitation +	2	
	GND	3	
	CAN-H	4	
	CAN-L	5	


Digital output CAN SAE J1939

MCANJ1939/R CAN SAE J1939 	CAN Specification	ISO 11898, Basic and Full CAN 2.0 B
	Transceiver	24V-compliant, not isolated
	Communication profile	SAE J1939
	Baud Rate	250 kbit/s
	Internal termination resistor	120 Ω adjustable by the customer
	Address	Default 247d, configurable

NAME Fields	Arbitrary address capable	1	Yes
	Industry group	0	Global
	Vehicle system	7Fh (127d)	Non specific
	Vehicle system instance	0	
	Function	FFh (255d)	Non specific
	Function instance	0	
	ECU instance	0	
	Manufacturer	145h (325d)	Manufacturer ID
	Identity number	0nnn	Serial number 21 bit

Parameter Group Numbers (PGN)	Configuration data	PGN EF00h	Proprietary-A (PDU1 peer-to-peer)
	Process data	PGN FFnnh	Proprietary-B (PDU2 broadcast); nn Group Extension (PS) configurable

Specifications	Excitation voltage	8 ... 36 V DC
	Excitation current	20 mA typical at 24 V DC 40 mA typical at 12 V DC, max. 80 mA
	Measuring rate	1 kHz (asynchronous)
	Stability (temperature)	±50 x 10 ⁻⁶ /°C f.s. (typical)
	Repeatability	1 LSB
	Operating temperature	See specification of the respective sensor
	Protection	Reverse polarity, short circuit
	Dielectric strength	1 kV (V AC, 50 Hz, 1 min.)
EMV	EN 61326-1:2013	

Signal wiring	Signal	Connector pin no.	View to the sensor connector
	Shield	1	
	Excitation +	2	
	GND	3	
	CAN-H	4	
	CAN-L	5	

Accessories

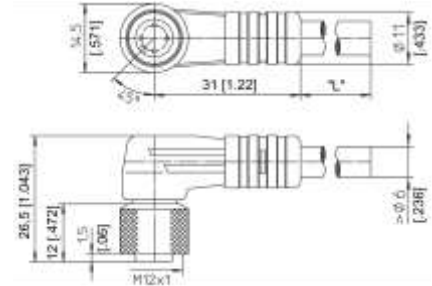
Connector cable M12, 4 pin

(angular coupling)

shielded connector

Suitable for 5-pin sensor connectors

The 4-core screened cable is supplied with a mating 4-pin 90° M12 connector at one end and 4 wires at the other end. Available lengths are 2m, 5m and 10m. Wire: cross sectional area 0.34mm² Cable diameter: 5.6 ±0.2 mm



Order code

KAB - xM - M12/4F/W - LITZE

IP69: **KAB - xM - M12/4F/W/69K - LITZE**

xM = length in m

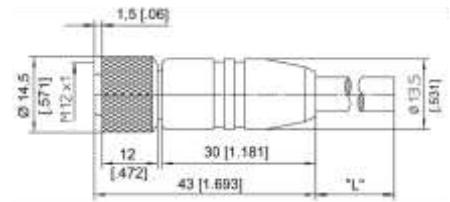
Connector cable M12, 4 pin

(straight coupling)

shielded connector

Suitable for 5-pin sensor connectors

The 4-core screened cable is supplied with a mating 4-pin M12 connector at one end and 4 wires at the other end. Available lengths are 2m, 5m and 10m. Wire: cross sectional area 0.34mm² Cable diameter: 5.6 ±0.2 mm



Order code

KAB - xM - M12/4F/G - LITZE

IP69: **KAB - xM - M12/4F/G/69K - LITZE**

xM = length in m

Signal wiring	Plug connection / cable color			
	M12, 4 pin	1 brown	2 white	3 blue

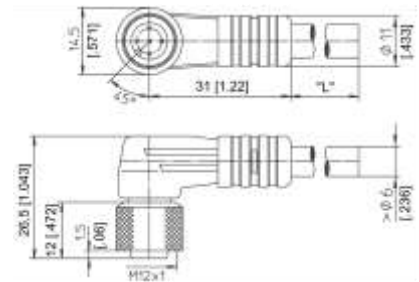
Applicable for cable carriers

Maximum movement speed	3 m/s
Maximum acceleration	5 m/s ²
Minimum bending radius	10 x cable diameter

**Connector cable M12, 5 pin
(angular coupling)**

shielded connector

The 5-core screened cable is supplied with a mating 5-pin 90° M12 connector at one end and 4 wires at the other end. Available lengths are 2m, 5m and 10m. Wire: cross sectional area 0.34mm² Cable diameter: 5.6 ±0.2mm



Order code

KAB - xM - M12/5F/W - LITZE

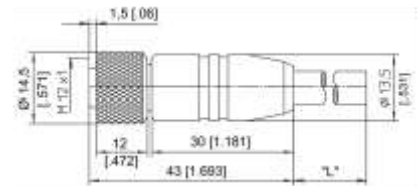
IP69: **KAB - xM - M12/5F/W/69K - LITZE**

xM = length in m

**Connector cable M12, 5 pin
(straight coupling)**

shielded connector

The 5-core screened cable is supplied with a mating 5-pin M12 connector at one end and 4 wires at the other end. Available lengths are 2m, 5m and 10m. Wire: cross sectional area 0.34mm² Cable diameter: 5.6 ±0.2mm



Order code

KAB - xM - M12/5F/G - LITZE

IP69: **KAB - xM - M12/5F/G/69K - LITZE**

xM = length in m

Signal wiring M12, 5 pin	Plug connection / Cable color				
	1	2	3	4	5
	brown	white	blue	black	grey

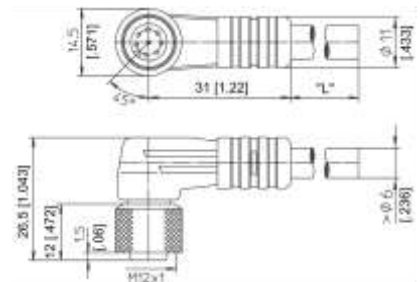
Applicable for cable carriers

Maximum movement speed	3 m/s
Maximum acceleration	5 m/s ²
Minimum bending radius	10 x cable diameter

**Connector cable M12, 8 pin
(angular coupling)**

shielded connector

The 8-lead shielded cable is supplied with a mating 8-pin 90° M12 connector at one end and 8 wires at the other end. Available lengths are 2m, 5m and 10m. Wire: cross sectional area 0.25mm² Cable diameter: 6.3 ±0.2mm



Order code

KAB - xM - M12/8F/W - LITZE

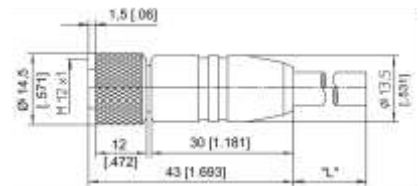
IP69: **KAB - xM - M12/8F/W/69K - LITZE**

xM = length in m

**Connector cable M12, 8 pin
(straight coupling)**

shielded connector

The 8-lead shielded cable is supplied with a mating 8-pin M12 connector at one end and 8 wires at the other end. Available lengths are 2m, 5m and 10m. Wire: cross sectional area 0.25mm² Cable diameter: 6.3 ±0.2mm



Order code

KAB - xM - M12/8F/G - LITZE

IP69: **KAB - xM - M12/8F/G/69K - LITZE**

xM = length in m

Signal wiring	Plug connection / cable color							
	1	2	3	4	5	6	7	8
M12, 8 pin	white	brown	green	yellow	grey	pink	blue	red

Applicable for cable carriers

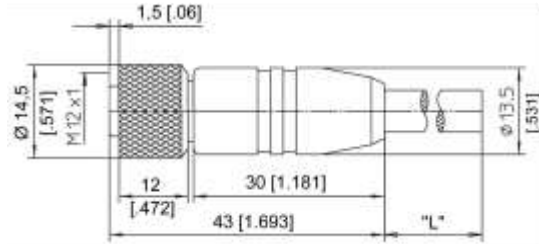
Maximum movement speed	3 m/s
Maximum acceleration	5 m/s ²
Minimum bending radius	10 x cable diameter

Connector/bus cable - M12, 5 pin CAN-Bus

The 5-lead shielded cable is supplied with a female 5 pin M12 connector at one end and a male 5 pin M12 connector at the other end.

Available lengths are 0.3 m, 2 m, 5 and 10 m.

Cable diameter: 6.7 ±0.2 mm



Order code:

KAB - xM - M12/5F/G - M12/5M/G - CAN

IP69: **KAB - xM - M12/5F/G/69K - M12/5M/G/69K - CAN**

xM = length in m

T-piece for bus cable M12, 5 pin CAN-Bus

Order code:

KAB - TCONN - M12/5M - 2M12/5F - CAN



Terminating resistance M12, 5 pin CAN-Bus

Order code:

KAB - RTERM - M12/5M/G - CAN



Applicable for cable carriers

Maximum movement speed	3 m/s
Maximum acceleration	5 m/s ²
Minimum bending radius	10 x cable diameter