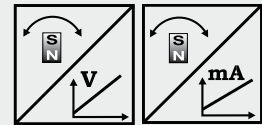


POSITAPE® WB17KT Analog Output



Position sensor with measuring tape

- Protection class IP64 (IP66)
- Measurement ranges 0 ... 3500 mm to 0 ... 19000 mm
- Steel measuring tape
- Analog output



Specifications	Outputs	U2	Voltage 0.5 ... 10 V
		U8	Voltage 0.5 ... 4.5 V
		I1	Current 4 ... 20 mA, 3 wire
	Resolution		0.05 mm
	Linearity		±0.05 % f. s.
	Sensing device		Precision potentiometer
	Material		Aluminium, stainless steel und plastic Tape: stainless steel, 10 mm wide, 0.08 mm thick
	Protection class		IP64 (IP66)
	Connection		Connector M12
	Shock		EN 60068-2-27:1993, 100 g/11 ms, 100 shocks
	Vibration		EN 60068-2-6:1995, 20 g 10 Hz-2 kHz, 10 cycles
	EMC, temperature		Refer to output specification

Order code WB17KT

WB17KT - [] - [] - [] - [] - BAB1

Model name

Measurement range (in mm)

3500 / 6500 / 10000 / 19000

Outputs

U2 = 0.5 ... 10 V signal conditioner
 U8 = 0.5 ... 4.5 V signal conditioner
 I1 = 4 ... 20 mA signal conditioner

Output scalable (as option)

PMU

Connection

M12A5 = Connector M12, 5 pin

Dust wiper

BAB1

Order code connector cable see page 9

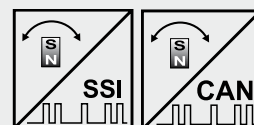
Order example: WB17KT - 6500 - U2 - M12A5 - BAB1

POSITAPE® WB17KT Digital Output



Position sensor with measuring tape

- Protection class IP64 (IP66)
- Measurement ranges 0 ... 3500 mm to 0 ... 19000 mm
- Steel measuring tape
- SSI output or
CANopen output or
CAN SAE J1939 output



Specifications	Outputs	Synchronous serial output (SSI) CANopen output CAN SAE J1939 output
	Resolution	0.05 mm
	Linearity	±0.05 % f.s.
	Sensing device	Magnetic encoder
	Material	Aluminium, stainless steel and plastic Tape: stainless steel, 10 mm wide, 0.08 mm thick
	Protection class	IP64 (IP66)
	Connection	Connector M12
	Shock	EN 60068-2-27:1993, 100 g/11 ms, 100 shocks
	Vibration	EN 60068-2-6:1995, 20 g 10 Hz-2 kHz, 10 cycles
	EMC, temperature	Refer to output specification

Order code WB12

WB17KT - [] - [] - [] - BAB1

Model name

Measurement range (in mm)

3500 / 6500 / 10000 / 19000

Outputs

MSSI = SSI synchronous serial

MCANOP = CANopen

MCANJ1939 = CAN SAE J1939

Connection

M12A8 = Connector M12, 8 pin (MSSI)

M12/CAN = Connector M12, 5 pin (MCANOP/MCANJ1939)

Dust wiper

BAB1

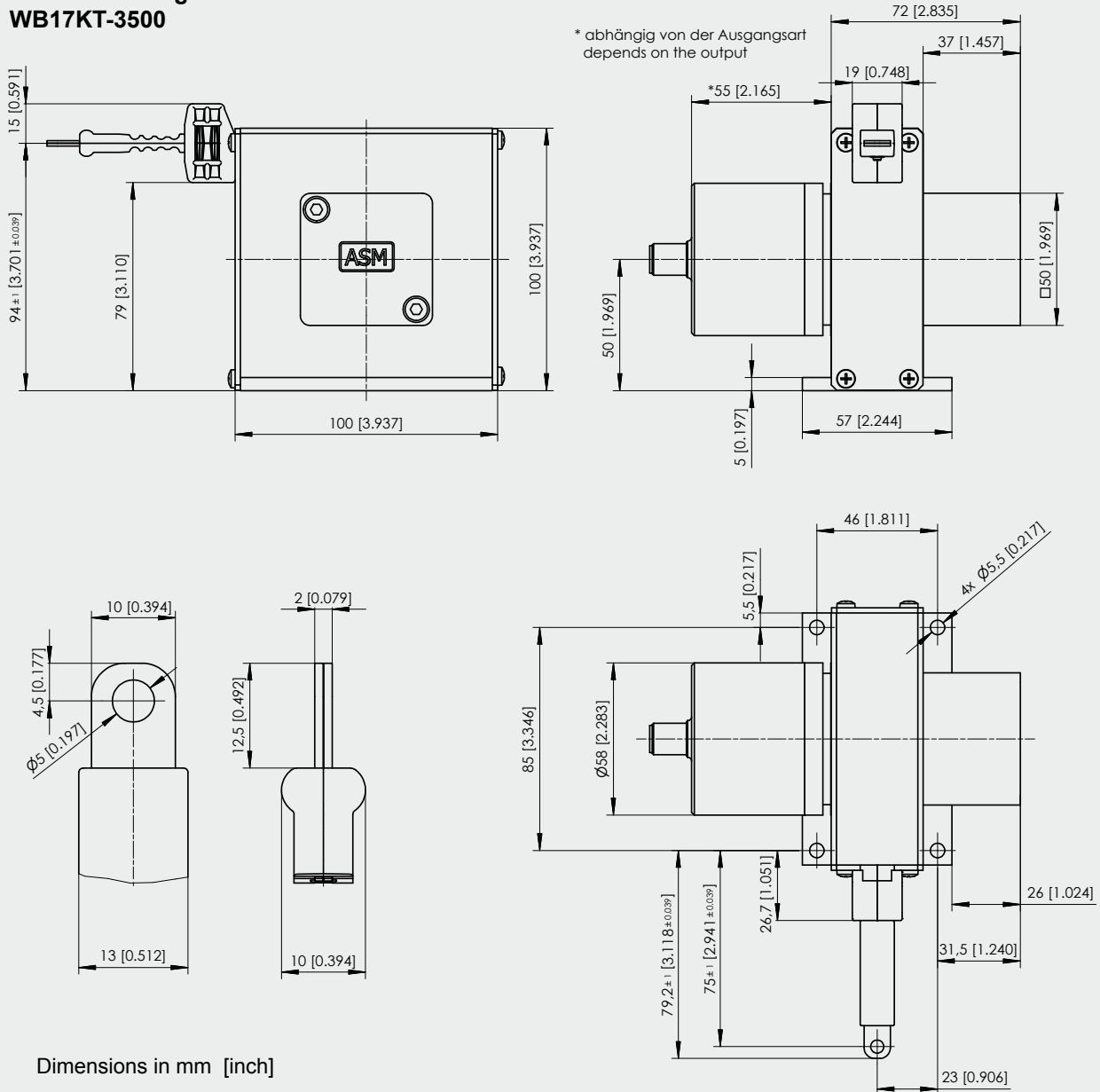
Order code connector cable see page 9/10

Order example: WB17KT - 6500 - MSSI - M12A8 - BAB1

POSITAPE® WB17KT Analog or Digital Output



Outline drawing WB17KT-3500



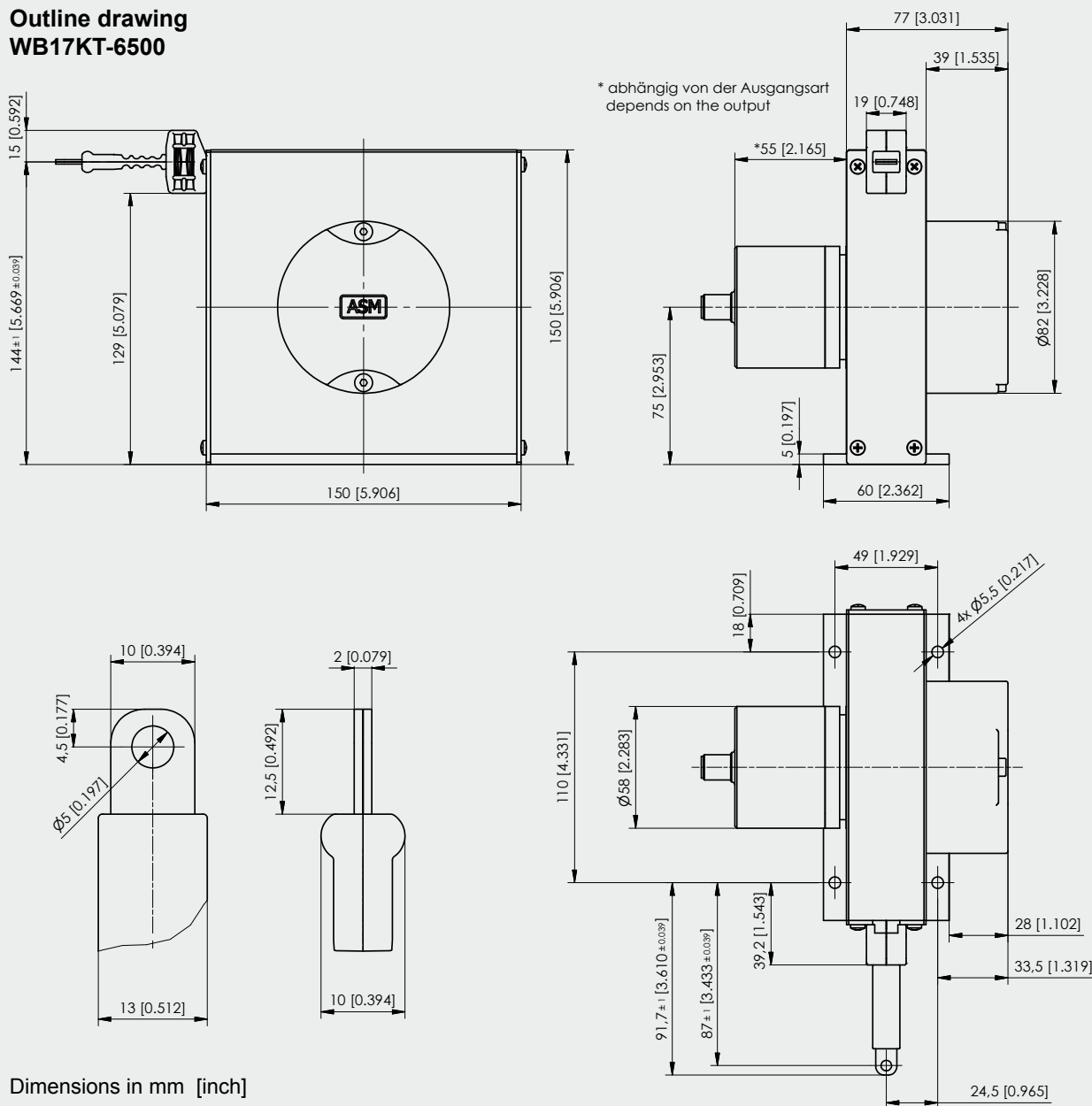
Dimensions in mm [inch]

Dimensions informative only.
For guaranteed dimensions consult factory.

POSITAPE® WB17KT Analog or Digital Output



Outline drawing WB17KT-6500



Dimensions in mm [inch]

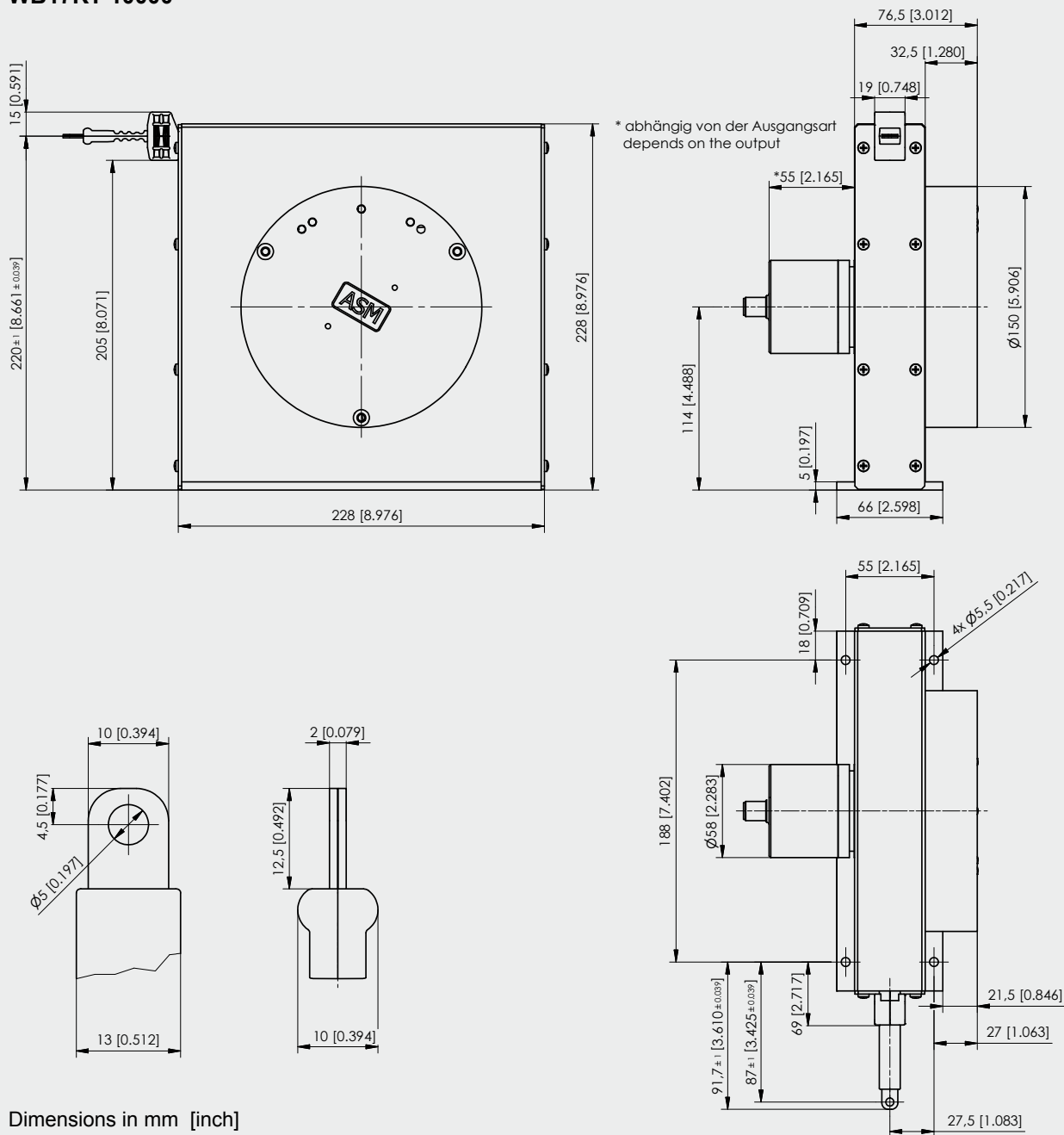
Dimensions informative only.

For guaranteed dimensions consult factory.

POSITAPE® WB17KT Analog or Digital Output



Outline drawing WB17KT-10000

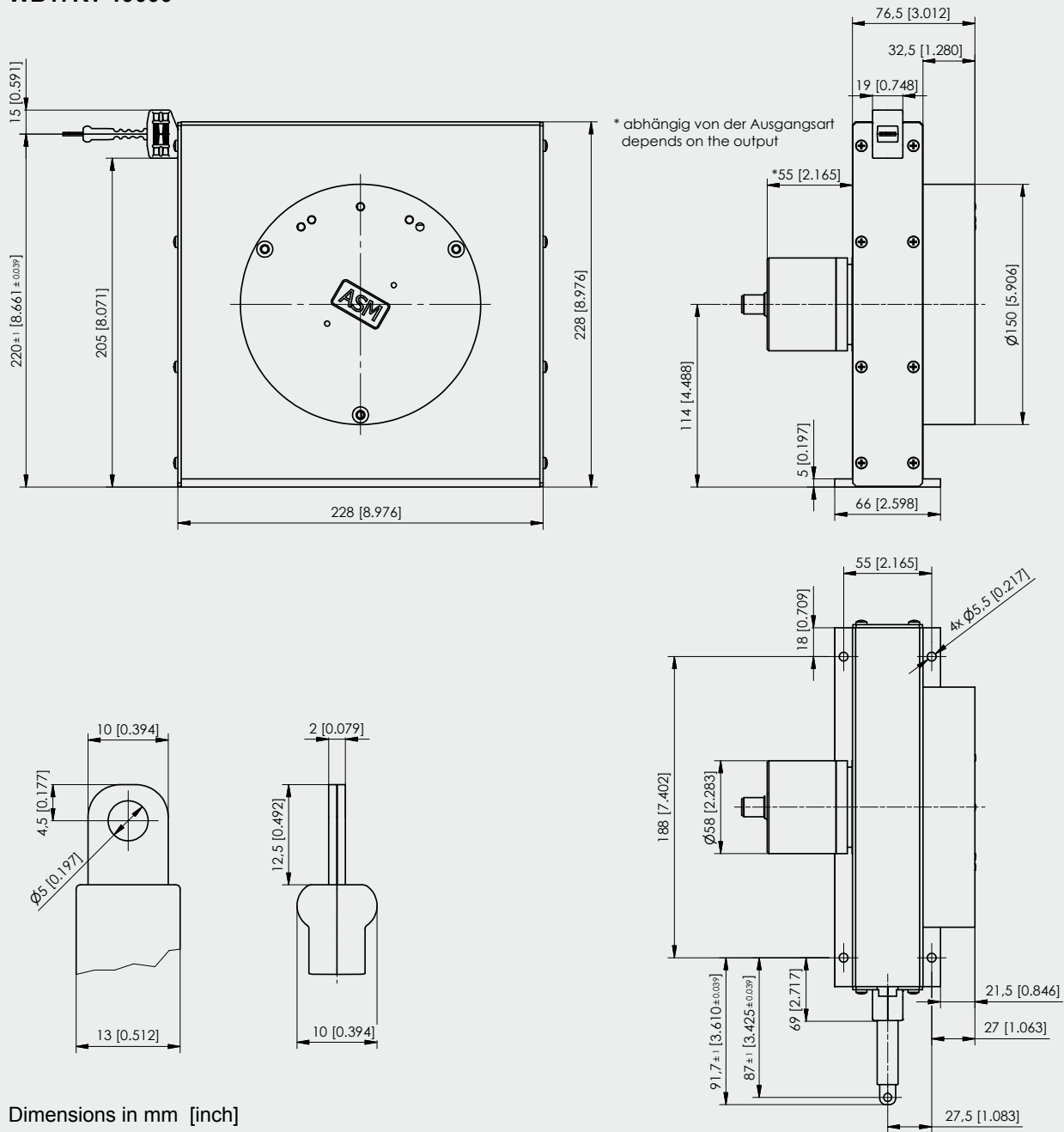


Dimensions in mm [inch]
Dimensions informative only.
For guaranteed dimensions consult factory.

POSITAPE®
WB17KT
Analog or Digital Output



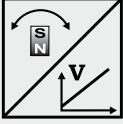
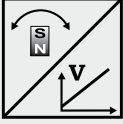
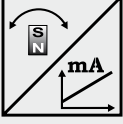
Outline drawing
WB17KT-19000



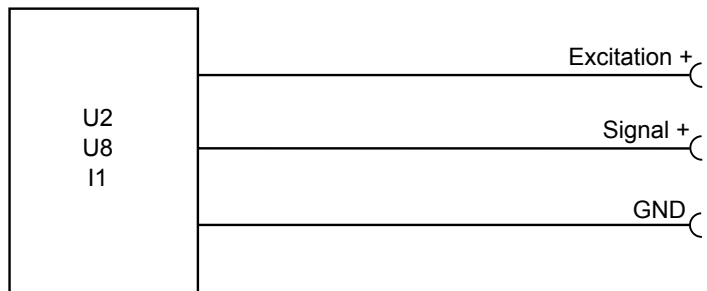
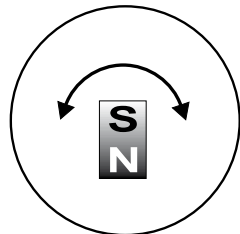
Dimensions in mm [inch]
Dimensions informative only.
For guaranteed dimensions consult factory.

POSITAPE® U2, U8 and I1 Analog Outputs



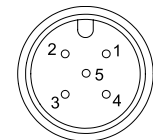
U2 Voltage output 0.5 ... 10 V 	Excitation voltage	18 ... 36 V DC
	Excitation current	25 mA typ.
	Output voltage	0.5 ... 10 V DC
	Output current	2 mA max.
	Measuring rate	1 kHz standard
	Stability (temperature)	$\pm 50 \times 10^{-6} / ^\circ\text{C}$ f.s. (typ.)
	Protection	Reverse polarity, short circuit
	Operating temperature	-20 ... +85 °C (optional -40 ... +85 °C)
EMC	EN61326-1:2006	
U8 Voltage output 0.5 ... 4.5 V 	Excitation voltage	10 ... 36 V DC
	Excitation current	25 mA typ.
	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. (typ.)
	Protection	Reverse polarity, short circuit
	Operating temperature	-20 ... +85 °C (optional -40 ... +85 °C)
EMC	EN61326-1:2006	
I1 Current output 4 ... 20 mA, 3 wire 	Excitation voltage	18 ... 36 V DC (10 ... 36 V for $R_L < 250 \Omega$)
	Excitation current	35 mA typ.
	Load	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. (typ.)
	Protection	Reverse polarity, short circuit
	Operating temperature	-20 ... +85 °C (optional -40 ... +85 °C)
EMC	EN61326-1:2006	

Output signals



Signal wiring/ connection	Output signal	Connector pin	Cable wire color
	Excitation +	1	Brown
	Signal	2	White
	GND	3	Blue
	Do not connect!	4	Black
	SPAN/ZERO (option PMU)	5	Grey

View to sensor
connector



CONN-M12-5F

Option -PMU

Programming of the start and end value by the customer

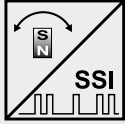
Programming of the start value and the end value of the output range is provided by a programming signal SPAN/ZERO available at the connector. This Signal SPAN/ZERO must be connected with GND via a push button, then position magnet of the sensor must be moved to the start resp. the end position. Pushing the button between 1 and 4 seconds sets the actual position as start position, pushing the button more than 5 seconds sets the actual position as end position. The values will be stored and are available after switching off the sensor.

To reset the sensor to the factory values the button must be pushed when the sensor is switched on.

POSITAPE® MSSI SSI Output

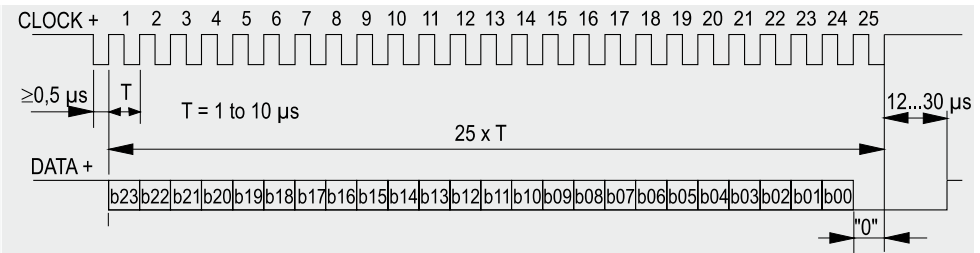


Interface MSSI Synchronous serial

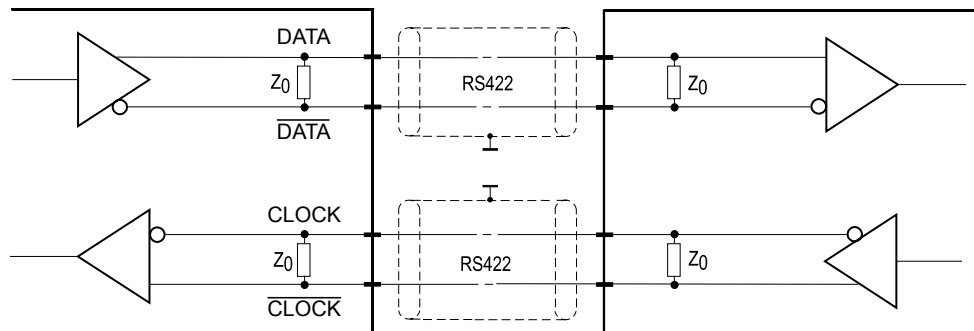


Interface	EIA RS-422
Excitation voltage	8 ... 36 V DC
Excitation current	Typ. 19/35 mA for 24/12 V, 100 mA max.
Clock frequency	100 kHz ... 500 kHz
Code	Gray-Code, continuous progression
Delay between pulse trains	20 µs min.
Stability (temperature)	±50 x 10 ⁻⁶ / °C f.s. (typ.)
Operating temperature	-20 ... +85 °C (optional -40 ... +85 °C)
Protection	Short circuit
EMC	EN61326-1:2006

Data format (train of 26 pulses)



Recommended processing circuit



Transmission rate

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

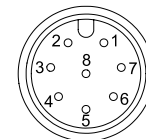
Note:
Extension of the cable length will reduce the maximum transmission rate.

Signal wiring

Signal name	Connector pin
Excitation +	1
Excitation GND	2
CLOCK	3
CLOCK	4
DATA	5
DATA	6

Connection


View to sensor
connector



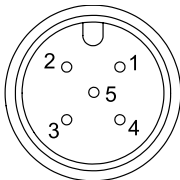
CONN-M12-8F

POSITAPE® MCANOP Output CANopen




Interface MCANOP 	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	2 cams
	Certified	Yes
	Transmission rates	50 kbit to 1 Mbit, adjustable via LSS; default: 125 kbit
	Bus connection	M12 connector, 5 pins
	Integrated bus terminating resistor	No
	Bus, galvanic isolated	No

Specifications	Excitation voltage	8 ... 36 V DC
	Excitation current	Typ. 20/40 mA for 24/12 V, max. 100 mA
	Measuring rate	1 kHz (asynchronous)
	Stability (temperature)	$\pm 50 \times 10^{-6}$ / °C f.s.
	Repeatability	1 LSB
	Operating temperature	-20 ... +85 °C (optional -40 ... +105 °C)
	Protection	Reverse polarity, short circuit
	Dielectric strength	1 kV (V AC, 50 Hz, 1 min.)
	EMC	According to EN 61326-1:2006

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

POSITAPE®
MMCANJ1939
Output CAN SAE J1939



Interface 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
	Address	Default 247d, configurable

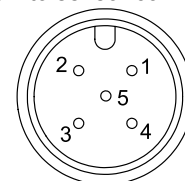
NAME Fields	Arbitrary address capable	1	Yes
	Industry group	0	Global
	Vehicle system	7Fh (127d)	Non specific
	Vehicle system instance	0	
	Function	FFh (255d)	Non specific
	Function instance	0	
	ECU instance	0	
	Manufacturer	145h (325d)	Manufacturer ID
	Identity number	0nnn	Serial number 21 bit

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	Typ. 20/40 mA for 24/12 V, max. 100 mA
	Measuring rate	1 kHz (asynchronous)
	Stability (temperature)	±50 x 10 ⁻⁶ / °C f.s.
	Repeatability	1 LSB
	Operating temperature	-20 ... +105 °C (optional -40 ... +105°)
	Protection	Reverse polarity, short circuit
	Dielectric strength	1 kV (V AC, 50 Hz, 1 min.)
	EMC	EN 61326-1:2006

Signal name	Connector pin no.
Shield	1
Excitation +	2
GND	3
CAN-H	4
CAN-L	5

View to sensor connector



POSITAPE®

Accessories for WB Position Sensors



Connector cable for WB position sensors 4 pin M12

Suitable for 5-pin
sensor connectors

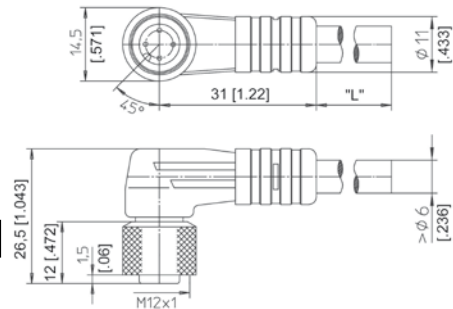
The 4-lead shielded cable is supplied with a mating 4-pin 90° M12 connector at one end and 4 wires at the other end. Available lengths are 2, 5 and 10 m. Wire: cross sectional area 0.34 mm².

Order code:

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

IP69K: **KAB - XM - M12/4F/W/69K - LITZE**

Length in m



Connector cable for WB position sensors 4 pin M12

Suitable for 5-pin
sensor connectors

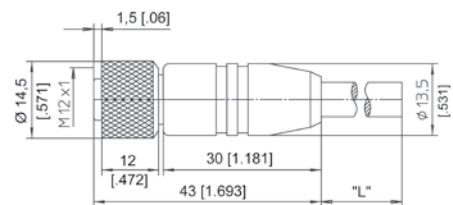
The 4-lead shielded cable is supplied with a mating 4-pin M12 connector at one end and 4 wires at the other end. Available lengths are 2, 5 and 10 m. Wire: cross sectional area 0.34 mm².

Order code:

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

IP69K: **KAB - XM - M12/4F/G/69K - LITZE**

Length in m



Signal wiring M12, 4 pin

Connector pin / cable color

1	2	3	4
Brown	White	Blue	Black

Connector cable for WB position sensors 8 pin M12

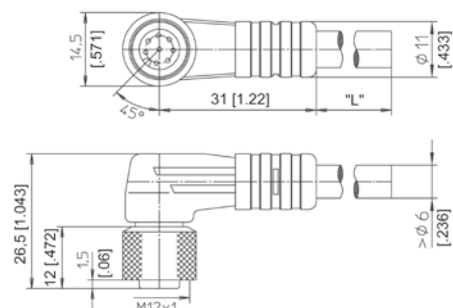
The 8-lead shielded cable is supplied with a mating 8-pin 90° M12 connector at one end and 8 wires at the other end. Available lengths are 2, 5 and 10 m. Wire: cross sectional area 0.25 mm².

Order code:

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

IP69K: **KAB - XM - M12/8F/W/69K - LITZE**

Length in m



Connector cable for WB position sensors 8 pin M12

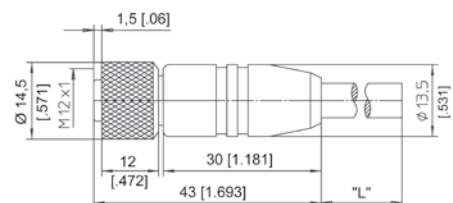
The 8-lead shielded cable is supplied with a mating 8-pin M12 connector at one end and 8 wires at the other end. Available lengths are 2, 5 and 10 m. Wire: cross sectional area 0.25 mm².

Order code:

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

IP69K: **KAB - XM - M12/8F/G/69K - LITZE**

Length in m



Signal wiring M12, 8 pin

Connector pin / cable color

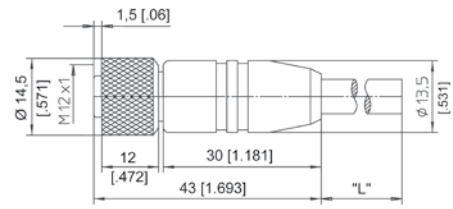
1	2	3	4	5	6	7	8
White	Brown	Green	Yellow	Grey	Pink	Blue	Red

POSITAPE® Accessories for WB Position Sensors



**Connector/bus cable
for WB position
sensors**
5 pin M12
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, 2, 5 and 10 m.



Order code:

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

IP69K: KAB - XM - M12/5F/G/69K - M12/5M/G/69K - CAN

Length in m

T-piece for bus cable
5 pin M12
CAN bus

Order code:

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



**Terminating
resistance**
5 pin M12
CAN bus

Order code:

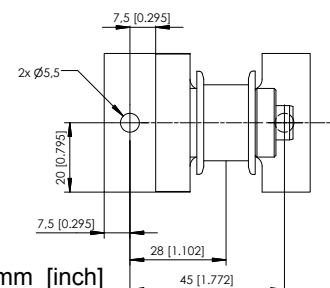
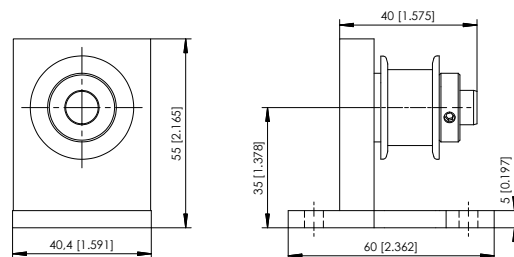
KAB - RTERM - M12/5M/G - CAN



Tape pulley WBR1

Order code:

WBR1



Dimensions in mm [inch]