

Cable transducer

Analog output / redundant

Measuring length absolute up to 5 m

BMMS K50 analog - MAGRES



BMMS K50 analog with flange connector M12

Features

- Magnetic sensing method
- Resolution: 12 bit
- Interface analog 0...10 V / 0.5...4.5 V / 4...20 mA
- Measuring length up to 5 m
- Removable stickers for water outlet
- Teach inputs
- Extremely light thanks to housing of plastic and aluminum
- Available with redundant absolute signals

Technical data - electrical ratings

Voltage supply	8...30 VDC
Reverse polarity protection	Yes
Short-circuit proof	Yes
Consumption typ.	35 mA (24 VDC, w/o load)
Initializing time	≤500 ms after power on
Response time	<1 ms
Interface	Analog 0...10 V / 0.5...4.5 V / 4...20 mA / Resolution: 12 bit
Function	Linear position feedback
Linearity	±0.65 % full scale output (f.s.o.)
Absolute accuracy	±1.13 % f.s.o. (+25 °C) ±1.41 % f.s.o. (-40...+85 °C)
Sensing method	Magnetic
Repeatability typ.	5 mm
Interference immunity	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-4
Programmable parameters	Measuring range teachable
Diagnostic functions	Self-diagnosis Reading back voltage output
Factory setting	Entire measuring range Min. output at 0 m Max. output at 5 m

Technical data - mechanical design

Protection DIN EN 60529	IP 65 (encoder)
Materials	Encoder housing: aluminium Cable-pull housing: PA6 GF30 Cable: Stainless steel cable coated with polyamide
Operating temperature	-40...+85 °C
Service life	Typ. >500000 strokes
Measuring length	5 m
Cable acceleration	≤50 m/s ²
Cable diameter	0.61 mm
Pull-in force	>3 N
Pull-out force	≤9 N
Relative humidity	95 % temporary condensing
Resistance	DIN EN 60068-2-6 Vibration 10 g, 10-2000 Hz DIN EN 60068-2-27 Shock 50 g, 11 ms
Weight approx.	400 g
Connection	Flange connector M12, 5-pin Flange connector M12, 8-pin Cable 2 m
Bending radius	Cable: >55 mm
Special characteristics	Coated electronic
Instruction	Please consider the assembly instructions

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Terminal significance

+Vs	Cable transducer supply voltage. (Redundant configuration provides decoupled dual voltage supply (+Vs1/+Vs2) separated by diodes.
0 V	Cable transducer ground connection relating to +Vs.
Iout	Current output. Load: <500 Ω
Uout	Voltage output. Current output: max. 10 mA Load resistor: >1 kΩ between Uout / 0 V
Set	Teach input. Resting state: Low Level High: >0.7 x +Vs Level Low: <0.3 x +Vs Pull-Down resistor: 10 kΩ
DV/Status	Diagnostic output/Teach output. R _L - Vs: High: >(Vs -1.0 V) Low: <3.0 V R _L - GND: High: >(Vs -3.0 V) Low: <1.0 V I _{Lmax} = 10 mA Upon any short-time disturbance, DV will go on Low for 1 second.

Teach process

Activate teach process

After power on set "Set-input" on HIGH for >5 seconds and afterwards on LOW level.
DV/Status output: Oscillates after 5 seconds.

Position 1

Get cable transducer on position 1 intended for voltage output 1 / current output 1. Set "Set-input" for 1 second on HIGH level.
DV/Status output: Switches to HIGH level for 3 seconds and flashes shortly.

Position 2

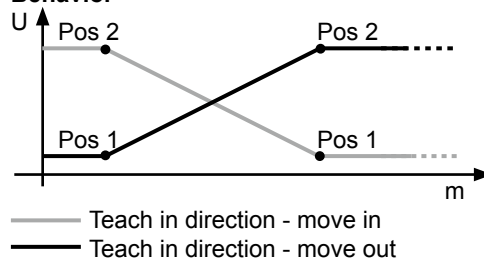
Get cable transducer on position 2 intended for voltage output 2/current output 2. Set "Set-input" for 1 second on HIGH level.
DV/Status output: Switches to LOW level for 3 seconds and oscillates afterwards.

If measuring range is exceeded or the limits are too close to each other, the teaching process was not successful and has to be repeated.

Set / restore default

Set „Set-input“ for 16 seconds to HIGH. DV/Status output: Oscillates after 5 seconds. Note: The cable transducer has to be completely drawn in.

Behavior



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Terminal assignment

Cable

for connection reference -5

Core color	Analog signals	
	U/5	V
white	0 V	0 V
brown	+Vs	+Vs
green	d.u.	lout
yellow	Uout	d.u.
grey	Set	Set
pink	DV/Status	DV/Status

Screen: connected to housing

Cable data: 6 x 0.14 mm²

Cable redundant

for connection reference -5

Core color	Analog signals	
	Y/7	Z
white	0 V	0 V
brown	+Vs 1	+Vs 1
green	Uout 1	lout 1
yellow	Uout 2	lout 2
grey	Set 1	Set 1
pink	DV/Status 1	DV/Status 1
blue	Set 2	Set 2
red	DV/Status 2	DV/Status 2
black	0 V	0 V
violet	+Vs 2	+Vs 2

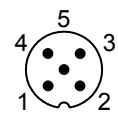
Screen: connected to housing

Cable data: 10 x 0.14 mm²

Flange connector M12, 5-pin

for connection reference -N

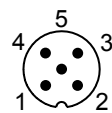
Pin	Analog signals	
	U/5	V
1	0 V	0 V
2	+Vs	+Vs
3	d.u.	lout
4	Uout	d.u.
5	Set	Set



Flange connector M12, redundant, 2 x 5-pin

for connection reference -M

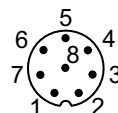
Pin	Connector 1	Connector 2
	1	0 V
2	+Vs 1	+Vs 2
3	Uout 1 (Y/7) lout 1 (Z)	Uout 2 (Y/7) lout 2 (Z)
4	DV/Status 1	DV/Status 2
5	Set 1	Set 2



Flange connector M12, 8-pin

for connection reference -Q

Pin	Analog signals	
	U/5	V
1	0 V	0 V
2	+Vs	+Vs
3	d.u.	lout
4	Uout	d.u.
5	Set	Set
6	DV/Status	DV/Status
7	n.c.	n.c.
8	n.c.	n.c.



Flange connector M12, redundant, 8-pin

for connection reference -Q

Pin	Analog signals	
	Y/7	Z
1	0 V	0 V
2	+Vs	+Vs
3	Uout 1	lout 1
4	Uout 2	lout 2
5	Set 1	Set 1
6	DV/Status 1	DV/Status 1
7	Set 2	Set 2
8	DV/Status 2	DV/Status 2

