

Installation and Operating Instructions

SMI

- Inductive strip centre measuring system (strip edge measurement)



MB_SMI_2020-00_en

Document-ID: EMGDES-00005645

4 Configuration and function

4.1 Configuration

In principle, the inductive strip centre measuring systems always consist of two transmitter and two receiver coils. According to the ambient conditions, these are partly "active coils" or "passive coils" with separate additional electronics (in hot or aggressive ambient conditions) which are used to compensate the different coil sizes and the cable lengths between the measuring system and the electronic unit.

4.1.1 Different types of strip centre measuring systems and their application

SMI-SE *)

Application:	All areas without special features
Electronic terminal box	SMI1.02 (attached to the SMI measuring frame)
Electronic unit with CAN-Bus communication:	SMI2.11.x
Max. ambient temperature [°C]:	Coils: 70 Electronics: 50
Coil type:	SMI150T.01 / SMI150R.01 SMI300T.01 / SMI300R.01 SMI500T.01 / SMI500R.01 SMI750T.01 / SMI750R.01 SMI900T.01 / SMI900R.01
Max. strip width changes (mm):	300 600 1000 1500 1800
Accuracy (mm):	+/-2 (SMI/150 and 300) +/-3 (SMI/500 and 750) +/-5 (SMI/900)

SMI-HE*)

Application:	High accuracy requirements
Electronic terminal box	SMI1.02 (attached to the SMI measuring frame)
Electronic unit with CAN-Bus communication:	SMI2.11.x
Max. ambient temperature [°C]:	Coils: 70 Electronics: 50
Coil type:	SMI150T.01 / SMI150R.01 SMI300T.01 / SMI300R.01 SMI500T.01 / SMI500R.01 SMI750T.01 / SMI750R.01 SMI900T.01 / SMI900R.01
Max. strip width changes (mm):	300 600 1000 1500 1800
Accuracy (mm):	+/-1

Operating and display elements on the evaluation electronics

Element	Standard	CAN-Bus electronics SMI2.11.X
J3	ON	receiver signal 1 modulated to approx. +14 V OFF for SMI2.51.x and SMI2.55.x
J4	ON	receiver signal 2 modulated to approx. +14 V OFF for SMI2.51.x and SMI2.55.x
J8	OFF	Jumper between ext. 24VDC-GND and CAN-GND
J9	ON	Jumper for CAN-Bus terminator 120 Ω
J700/J701		RECNorm
S1		Basic amplification receiver
S2		Multifunction switch
S3/1	OFF	Baud rate setting (default: 250 kBaud)
S3/2	ON	Baud rate setting (default: 250 kBaud)
S3/3	ON	CAN-Bus synchronisation
S3/4	OFF	Firmware download (0 → 1 → 0 = reset)
S4		Test function switch
S5		Address setting CAN-Bus (default setting: 2)
R1	1 ... 3	Amplification of receiver channel 1 and 2
R2		Amplification (balance) of receiver channel 2 For S2/5 = OFF: ± 5 % For S2/5 = ON: ± 30 %
R21		VDC adjustment (factory adjustment)
R41/R42		Adjustment of band-pass filters for receivers (factory adjustment)
H1		LED, green, flashing cycle controller
H2		LED, green, internal voltages o.k.
H3		LED, green, transmitter o.k.
H4		LED, green, receiver o.k.
H5		LED, green, SMI ok (measuring system ok)
H6		LED, green, strip detected
H7		LED, green, CAN communication OK
Various TP xxx		Measuring points on the board
X1/ X2		Terminal strip/distribution for 24 V DC power supply
X3 and X4		Terminal strip for receiver 1 and 2
X5 and X6		Terminal strip for transmitter 1 and 2
X7		Terminal strip stroke transducer connection
X21		Plug connection for PC (RS 232) for 0-modem cable (pin 2 and 3 swapped)
X27		Internal
X31/ X33		Terminal strip for CAN-Bus connection
X51/X52		Internal connection to other EMG subprints

Default setting for electronic unit SMI 2.11.X		
Designation	Delivery	Description / application
DIL switch S 1 / 1 ... 4	1 1 1 0	Basic amplification of receiver channel
DIL switch S 2 / 1 ... 8	0 0 1 0 0 0 0 0	Special functions: none, with slope adjustment
DIL switch S 3 / 1 ... 4	0 1 1 0	CAN-Bus baud rate: 1 MBaud, 250 kBaud, synchronous
Rotary switch S 4 hex	0	Service function
Rotary switch S 5 hex	2	CAN-Bus address: 8, 2
Jumper J 3, J 4	ON	Power supply of receiver 1 and 2 via 2-wire cable
Jumper J 8	ON	Jumper between ext. 24 V DC-GND and CAN-GND
Jumper J 9	ON	CAN-Bus terminator 120 Ω
Jumper J 700, 701	OFF	Gain factor calculation