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Ярославль (4852)69-52-93

Россия +7(495)268-04-70

Казахстан +7(7172)727-132

Киргизия +996(312)96-26-47

<https://heimeier.nt-rt.ru> || hri@nt-rt.ru

ЕМО ЕІВ

Actuators

Motorized actuator for direct connection to the European Installation Bus



Engineering
GREAT Solutions

EMO EIB

EMO EIB actuators are used in the EIB building installation system in the heating, ventilation and air conditioning facilities. They are suitable for installing on thermostatic valve bodies and make it possible to achieve optimum control results when used with the appropriate EIB room temperature controller and also for more demanding control accuracy or for difficult control systems. Due to their low power consumption, the actuators receive their voltage supply directly from the bus.

Key features

- > No auxiliary voltage required
- > Automatic stroke adjustment
- > Runs extremely quiet
- > Integrated communications electronics
- > Certified according to EIB standard
- > Design with two binary inputs



Technical description

The EMO EIB proportional actuator is designed for connection to the European Installation Bus (EIB).

The connection is made directly, a separate bus coupling is not necessary. In addition, there is no need for an external auxiliary voltage supply as the actuator is supplied with voltage from the bus. Enabling contactless programming of the physical address is made with the aid of the programming magnet.

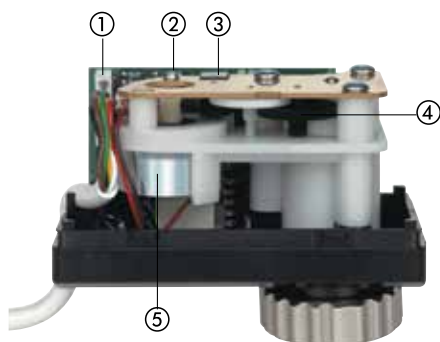
A programming LED acts as a status indicator. The maintenance-free actuator operates at an extremely low noise level. The compact body made of top quality plastic includes the motor, gears, stroke recognition and the entire communications and control electronics. The EMO EIB design with two binary inputs provides the possibility of integrating additional communication objects (see list of the communication objects).

The EMO EIB is intended for installation on TBV valves, thermostatic valve bodies and three-way valves. Adapters enable the mounting of thermostatic valve bodies of other manufacturers.

The electrical connection is made by means of a 2-wire cable protected against polarity inversion, or, with the two-binary input design, with a 6-wire body-strengthened cable.

Assembly

EMO EIB



1. Communications and control electronics
2. Service LED
3. Position detection
4. Spur gear
5. Direct current motor (noise-decoupled)

Function

When being put into operation, a selfcalibration routine recognises the stroke position of the valve in the closed and completely opened positions. The 8 bit controlled variable received via the EIB is then allocated to the effective valve stroke in a linear relationship. This results in the high 256 position resolution of the valve stroke. The motor switches off as soon as the stroke position corresponds to the control variable received. Stability in this position is ensured by the self-locking gears. The force in the closing range is adjusted for thermostatic valve bodies with soft sealing valve discs.

For the connection of, for example window contacts, an adjustable forced position can be activated for energy saving purposes.

The EMO EIB design with two flexibly configurable binary inputs is suitable for the direct connection of buttons, switches, conventional sensors etc.. Besides this an adjustable min. and max. limit of the control variable is integrated.

Following a fixed predetermined number of changes in position, and after each interruption of the system voltage, the actuator automatically runs through a self calibration routine.

List of the communication objects

Communication objects	EMO EIB with two binary inputs	EMO EIB Standard
Object No / Description	Type / Name – Function *)	Type / Name – Function
0 / Control variable	8 bit or 1bit / input – control variable ^{*)}	8 bit / input – control variable
1 / Actual value	8 bit / output – control variable (actual position)	8 bit / output – control variable (actual)
2 / Status (actuator)	8 bit or 1 bit / output – operating condition ^{*)}	8 bit / output – operating condition
3 / Forced position 1	1 bit / input – switch	1 bit / input – constrained position
4 / Forced position 2	1 bit / input – switch	-
5 / Min. limit	1 bit / input – switch	-
6 / Max. limit	1 bit / input – switch	-
7 / Binary input 1	1 bit or 8 bit / switch, short term operation, value, light scene ^{*)}	-
8 / Binary input 1	1 bit or 4 bit / long term operation, dimming ^{*)}	-
9 / Binary input 2	1 bit or 8 bit / switch, short term operation, value, light scene ^{*)}	-
10 / Binary input 2	1 bit or 4 bit / long term operation, dimming ^{*)}	-
11 / Limit value smaller/larger	8 bit or 1 bit / output – switch ^{*)}	-

*) dependent on parameterizing

Application

The EMO EIB motorized actuators are used in the EIB building installation system in the heating, ventilation and air conditioning facilities. They are suitable for installing on thermostatic valve bodies and make it possible to achieve optimum control results when used with the appropriate EIB room temperature controller and also for more demanding control accuracy or for difficult control systems.

Due to their low power consumption, the actuators receive their voltage supply directly from the bus. It is therefore not necessary to provide an additional auxiliary voltage supply network.

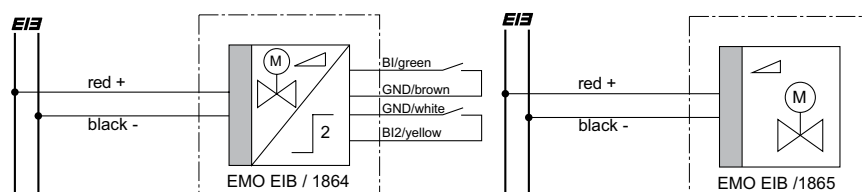
For room temperature control motorized actuators are used,

for example on radiators and convector heaters, manifolds for underfloor heating systems, ceiling cooling systems and ceiling radiant heating systems, as well as for fan convector heaters and induction equipment in two or four conductor distribution systems.

The state of an external pair of floating contacts available to the EIB-Net as a switching or control message. For connection of window contacts an energy saving function is integrated.

If the preset position of the valve is fallen short of, or if it is exceeded, a switching message can be generated, e.g. to switch off a pump.

Connection diagram

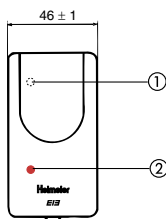
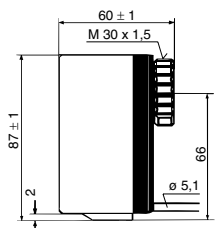


Technical data

	With two binary inputs	Standard
Voltage supply: – system voltage – power consumption	from EIB-Bus (SELV according to IEC 364-4-41) 24 V DC (+ 6 V / - 4 V) typical 10 mA (= 240 mW), corresponds approx. to 2 BA modules	from EIB-Bus (SELV according to IEC 364-4-41) 24 V DC (+ 6 V / - 4 V) typical 10 mA (= 240 mW), corresponds approx. to 2 BA modules
Participants per EIB line:	max. 64 (depending on the nature of the voltage supply and participants)	max. 64 (depending on the nature of the voltage supply and participants)
Binary inputs: – assignment; max. reliable length – signal current/voltage	2 freely configurable binary inputs external, floating contacts NO/NC type; total length 10 m approx. 1 mA / 20 V – pulse 5 ms	- - -
Valve stroke:	max. 4.2 mm	min. 1.0 mm; max. 4.0 mm
Running time:	25 s/mm	25 s/mm
Protection (according to EN 60529):	IP 42 (horizontal installation),	IP 42 (horizontal installation), IP 43 (vertical installation)
Safety class:	III, EN 60730	III, EN 60730
Body, colour:	plastic, white according to RAL 9016	plastic, white according to RAL 9016
Connection cable:	1 m fixed; type J(E)YY 3 x 2 x 0.6	1 m fixed; type Y(St)Y 1 x 2 x 0.6
Connection to the bus: – the binary inputs	2-pole with bus terminal block; with polarity inversion protection 2 x 2-pole with bus or connecting terminal	2-pole with bus terminal block; - -
CE certification (EMC / LV):	EN 50090-2-2 + A2 / EN 50090-2-2 + A1,A2	EN 55022, EN 61000-6-1,2,3 / EN 6070-1 + A1,A12,A13,A14
Ambient temperature (in operation):	0°C – 50°C	0°C – 50°C
Temperature of the medium:	max. 100 °C	max. 100 °C
Storage temperature:	-20°C – +70°C (-4°F – +158°F)	-20°C – +70°C (-4°F – +158°F)
Installation:	fits all IMI Heimeier thermostatic valve bodies and three-way valves	

Max. permissible pressure difference with which the valve is still closed: see brochure Thermostatic valve bodies; three-way reversing valve; three-way-mixing valve control valves for underfloor heating.

Articles



EMO EIB

Model	EAN	Article No
With two binary inputs	4024052426553	1864-00.500

1. Activating point for programming magnet
2. Programming LED

Accessories

Product data base

with IMI Heimeier-specific data on EMO EIB for down loading into ETS2 from version 1.1 onwards.

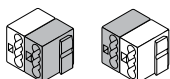
	EAN	Article No
CD-ROM	4024052458516	1074-01.485



Programming magnet

for programming the physical addresses without contact

	EAN	Article No
	4024052149919	1865-01.433



Bus terminal

10-piece connection or branch terminal for bus and binary inputs. Connection for max. 4 solid conductors 0.6–0.8 mm dia. (plug-in connection).

Application	Design	EAN	Article No
EIB connection	2-pole / red-black	4024052150014	1865-02.433
Binary input	2-pole / white-yellow	4024052426416	1867-01.433



Connecting terminal

Terminal for connecting max. 2 solid conductors 0.6 mm dia. (plug-in connection) to multi-wire or fine wire conductors (screw connection up to 4 mm² with wire protection).

Application	Design	EAN	Article No
Binary input	2-pole / grey	4024052426317	1867-02.433

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