

# EMOLON



## Actuators

Motorized actuator for use with LONWORKS®-networks



Engineering  
**GREAT** Solutions

# EMOLON

EMOLON actuators are used in LONWORKS® networks in the heating, ventilation and air conditioning sectors. They can be installed on thermostatic valve bodies and make it possible, when used with the appropriate constant regulators, for optimal control results to be achieved even for more accurate control or control paths with a high level of difficulty. The actuators receive their supply voltage directly from the bus.



## Key features

- > **LinkPower with bus voltage monitoring**
- > **Automatic stroke adjustment**
- > **Characteristic line compensation**
- > **Runs extremely quiet**
- > **Corresponds to LonMark guidelines**
- > **LNS™ plug-in for configuration, monitoring and diagnostics**

## Technical description

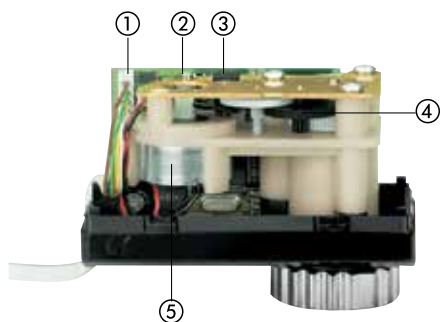
The EMOLON proportional actuator has been designed for connection to LONWORKS®-networks. The bus (Link Power) supplies the voltage directly. The integrated bus voltage monitoring avoids an overload of the network from a larger number of EMOLON actuators. The Neuron® ID has a contact free output

due to the service magnet. A yellow service LED acts as a status indicator. The maintenance-free drive mechanism operates at an extremely low noise level. The compact body made of high quality plastic covers the motor, gears, stroke recognition and the entire communications and control technology.

This actuator has been designed to be fitted to TBV valves, thermostatic valve bodies and three-way valves. Adapters enable the mounting of thermostatic valve bodies of other manufacturers. The electrical connection is protected against polarity inversion by a 6-wire cable which is fitted to the body.

## Construction

### EMOLON



1. Communications and control technology
2. Service LED
3. Position capture
4. Spur gear
5. Direct current motor (noiseless)

## Function

When starting up, the stroke position of the valves is recorded in a closed and completely open position by the adjustment routine of the actuator.

Then the control value received by the LONWORKS® network is assigned to the effective valve stroke in a linear relationship. This results in a high resolution of the valve stroke. A linearization of the characteristic line of the thermostatic valve bodies can be set by an LNS™ plug-in.

The motor is switched off as soon as the stroke position, which is equivalent to the received control variable, has been reached.

Stability in this position is guaranteed by the self-locking gears. The pressure power within the closed range is adapted for thermostatic valve bodies with soft sealing discs.

Following a predetermined number of changes in position and after each interruption of the system voltage, the actuator automatically conducts a recalibration routine.

Two flexibly configurable binary inputs have been integrated for a direct connection to buttons, switches, conventional sensors etc. along with a PID controlling algorithm.

## Application

The EMOLON motorized actuators are used in LONWORKS® networks in the heating, ventilation and air conditioning sectors. They can be installed on thermostatic valve bodies and make it possible, when used with the appropriate constant regulators, for optimal control results to be achieved even for more accurate control or control paths with a high level of difficulty.

The actuators receive their supply voltage directly from the bus. It is therefore not necessary to lay an additional auxiliary energy supply network.

Motorized actuators can also be used for room temperature control, e. g. on radiators and convectors, manifolds for floor heating systems, ceil cooling systems and radiant heating systems, as well as fancoil units and induction equipment in two or four conductor systems.

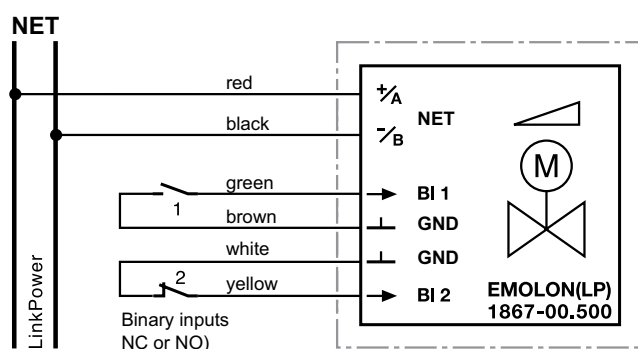
The two binary inputs can be used to make two external floating contacts available to the LONWORKS® network as switch or control telegrams. An energy saving function is integrated when connecting to window contacts.

A switch telegram can be created when a valve position that can be preset is not reached, e. g. when switching off a pump.

A switch telegram can be created when a temperature value that can be preset is exceeded, e. g. activating a sun protection function.

The PID controller, which can be parameterized flexibly, contains the set and actual temperatures from the LONWORKS® network; temperature capture is not integrated.

## Connection diagram

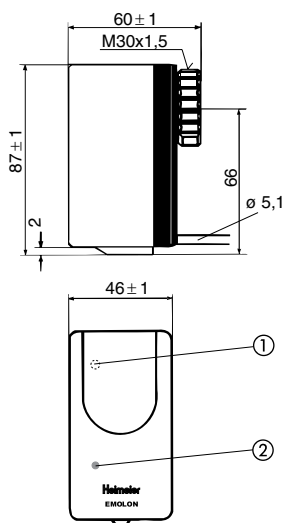


## Technical data

<b>Voltage supply:</b>	from LONWORKS® – TP/FT network
– System voltage:	nom. 48 V DC (40.6 V – 42.4 V) / LinkPower for transceiver Typ LPT10
– Power consumption:	max. 12 mA ( $\leq 570$ mW = 2 <b>LinkPowerUnits</b> )
<b>Connection to network segment:</b>	max. 64 actuator nodes for internal bus voltage monitoring
<b>Network interface:</b>	dependant on software; corresponds to the software documentation
<b>Binary inputs:</b>	2 freely configurable binary inputs (max. permitted wire extension 4 m)
– Assignment:	external, floating contacts (NO/NC)
– Signal current, signal voltage:	approx. 1 mA / 20 V impulses/5 ms
<b>Valve stroke; Running time:</b>	min. 1,0 mm, max. 4,2 mm; 25 s/mm
<b>Type of protection (accord. to EN 60529):</b>	IP 42 (horizontal installation) / IP 43 (vertical standing installation)
<b>Safety class:</b>	III, EN 60730
<b>Body, colour:</b>	plastic, white according to RAL 9016
<b>Connection cable:</b>	1 m fixed; type (J)EYY 3 x 2 x 0.6 (custom lengths available on request)
<b>Connection to bus:</b>	with polarity inversion protection; 2-pole with bus connection terminal
– of the binary inputs:	each 2-pole with bus or connection terminal
<b>CE certification:</b>	EN 50081-1; EN 50082-1; EN 50090-2-2
<b>Ambient temperature (in operation):</b>	0°C – 50°C (32°F – 122°F)
<b>Max. medium temperature:</b>	100°C (212°F)
<b>Storage temperature:</b>	-20° – +70°C (4°F – +158°F)
<b>Installation:</b>	can be used with all IMI Heimeier thermostatic valve bodies and three-way valves and IMI TA TBV valves

Max. permitted differential pressure during which the valve is kept closed, see brochures “Thermostatic valve bodies”; “Three-way reversing valve”; “Three-way mixing valve”; “Control valves for floor heating systems”.

## Articles



### Model

EMOLON / LP variant  
EMOLON / FT variant

### Article No

1867-00.500  
available on request

1. Activating point for programming magnet
2. Programming LED

## Accessories

### Equipment requirements and LNS™ plug-in

on CD-ROM. IMI Heimeier-specific data about EMOLON as "external interface file" (XIF), as well as a plug-in for an LNS™ based network management tools (from LNS™ version 1.5 onwards).

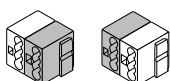
	EAN	Article No
CD-ROM	4024052458516	1074-01.485



### Service magnet

for non-contact operation of the service button.

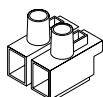
	EAN	Article No
	4024052149919	1865-01.433



### 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
NET A/B	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 mm<sup>2</sup> with wire protection).

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



## EMOLON

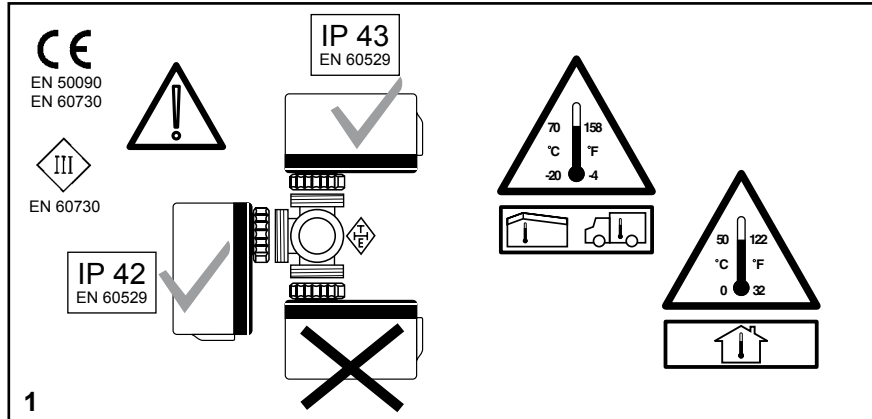
Elektromotorischer Stellantrieb für die Verwendung in LonWorks®-Netzwerken

Electro-motorized actuator for LonWorks®-nets

Actionneur régulateur à moteur électrique pour réseaux LonWorks®

Electromotorische stelaandrijving voor LonWorks®-Netwerken

Montageanleitung/Installation instructions/Instructions de montage/Montagevoorschrift

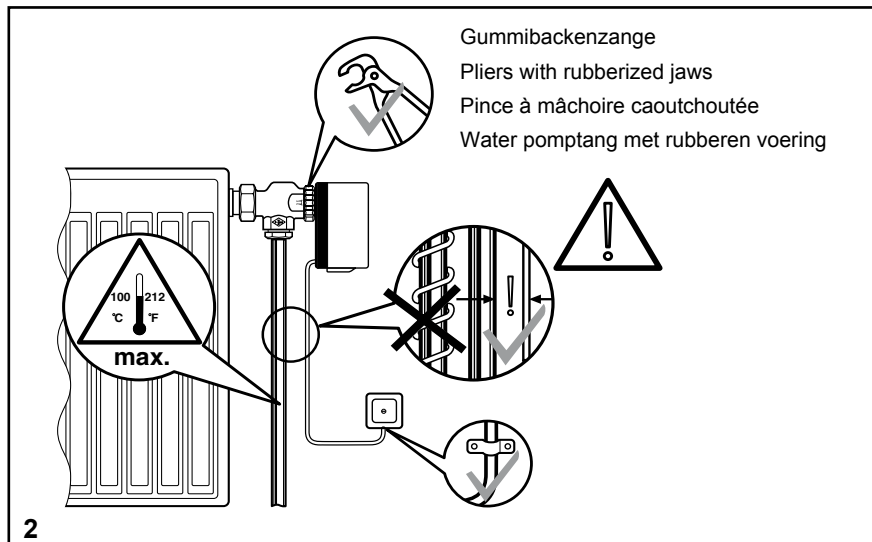


**Zulässige Montagelagen und Temperatur-Bereiche**

**Permissible mounting position and temperature ranges**

**Position de montage et plages de température admissibles**

**Toelaatbare montagestand en temperatuurbereik**



**Montage/Anschluss**

Anschluss an Fremdfabrikate (Adaptor) auf Anfrage.

**Mounting/Connection**

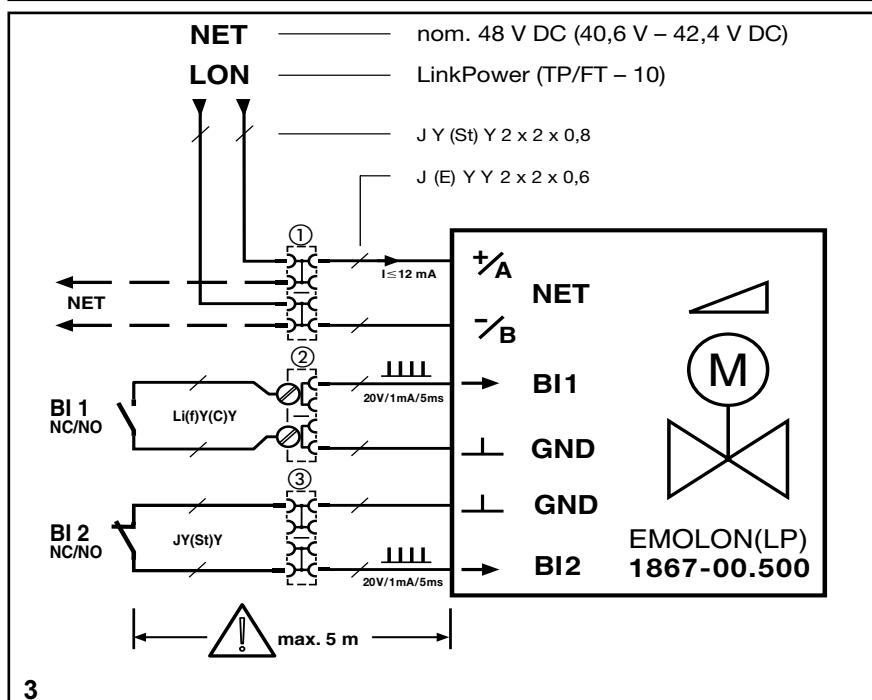
Connection with products of other brands, adaptors on request.

**Montage/Connexion**

Connexion avec produits d'autres fabrications, adapteurs sur demande.

**Montage/Aansluiting**

Aansluiting op ander fabrikaat (Adaptor) op aanvraag.



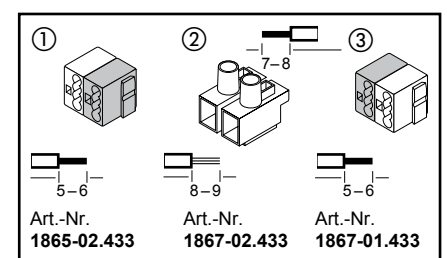
**Anschlussbild, -farben, -klemmen**

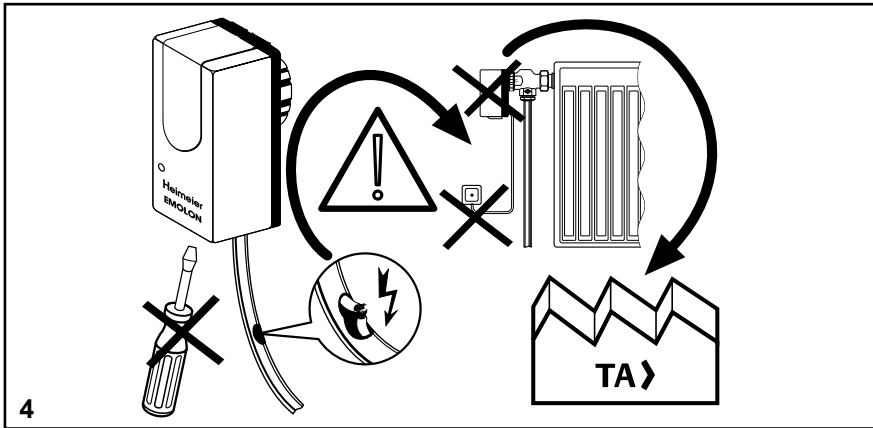
**Connection diagram, colours, terminals**

**Schéma des connexions, couleurs, bornes**

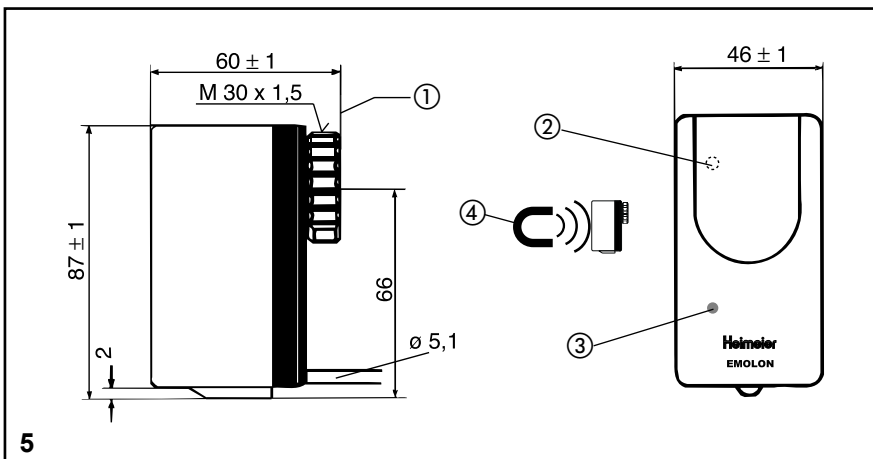
**Aansluitschema, -kleuren, -klemmen**

**NET A** rot / red / rouge / rood  
**NET B** schwarz / black / noir / zwaart  
**BI 1** grün / green / vert / groen  
**GND** braun / brown / brun / bruin  
**GND** weiß / white / blanc / wit  
**BI 2** gelb / yellow / jaune / geel





**Sicherheitshinweise**  
**Safety notes**  
**Avis de sécurité**  
**Veiligheidsvoorschriften**

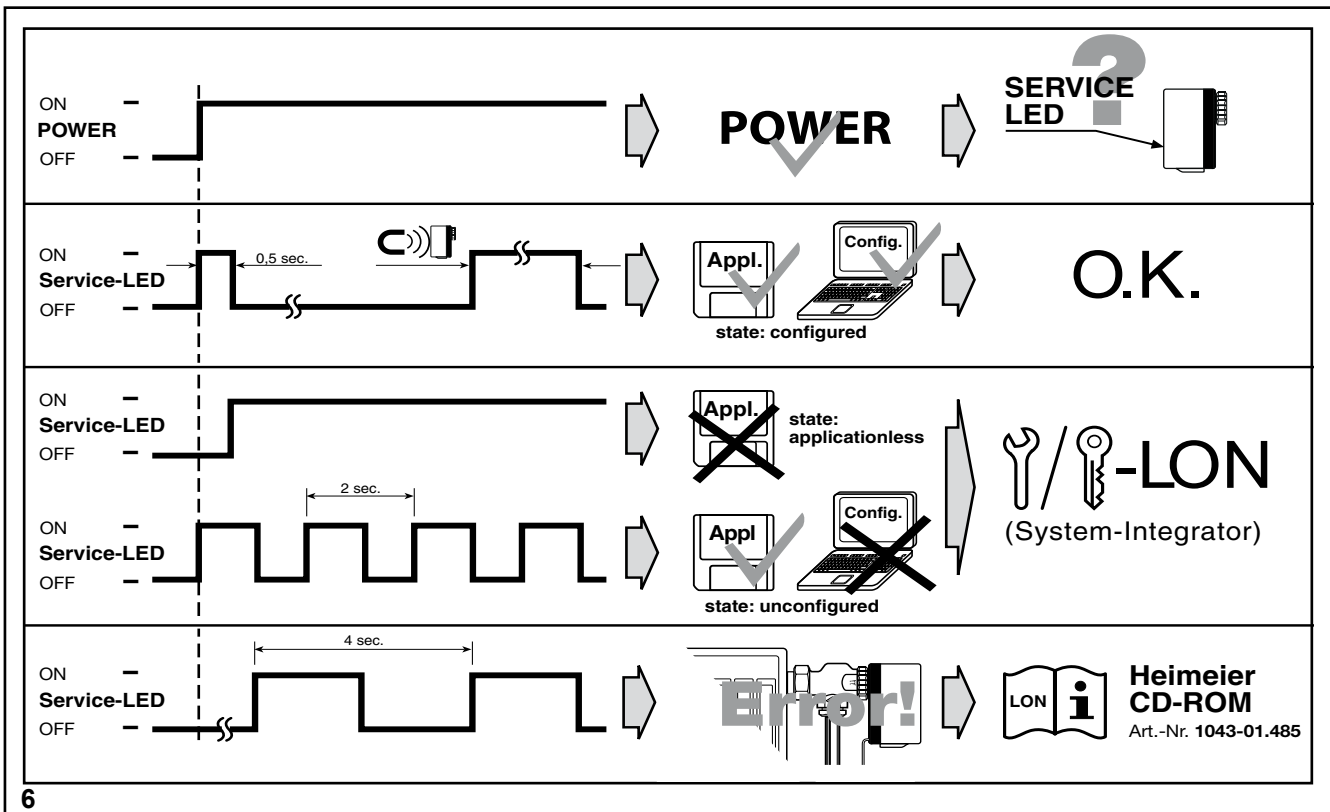


**Baumaße; Servicemagnet, -LED**  
**Structural dimensions, service magnet, -LED**  
**Dimensions d'appareil, aimant et LED de service**  
**Inbouwmaten servicemagneet, -LED**

- ① Auflagefläche / Supporting area / Surface d'appui / draagvlak
- ② Aktivierungspunkt für Servicemagnet / Activating point for service magnet / Point d'activation pour l'aimant de service / Activeringspunt voor servicemagneet
- ③ Service-LED
- ④ Service-Magnet Art.-Nr. 1865-01.433

**Inbetriebnahme; Funktion der Service-LED**  
**Commissioning; function of the service LED's**

**Mise en marche; fonction des LED's de service**  
**Inbedrijfstelling, werking van de service-LED**



LONWORKS ist ein eingetragenes Warenzeichen der Echelon Corporation. / LONWORKS is a registered trademark of the Echelon Corporation. / LONWORKS est une marque déposée de la maison Echelon Corporation. / LONWORKS is een geregistreerd handelsmerk van de Echelon Corporation.  
 Technische Änderungen vorbehalten. / We reserve the right to introduce technical alterations without previous notice. / Sous réserve de modifications sans avis préalable. / Technische wijzigingen voorbehouden.