
ABB MEASUREMENT & ANALYTICS | DATA SHEET

LME620-AI / LME620-AN (Contrac)

Electrical linear actuator



For continuous control mode, rated force 4 kN (900 lbf), with integrated electronic unit or for separate electronic unit.

Electrical actuator for continuous positioning or step control

Stall-proof without the need for position- or torque-dependent shut-off

Sturdy gear unit with highly efficient design

Internal rotary-linear conversion

Handwheel for emergency operation

Integrated position and temperature sensors

Power supply 115 V AC or 230 V AC via electronic unit only

Brief description

Compact actuator for the operation of final control elements with preferably linear movement. The actuator thrust rod transfers the force directly to the final control element. The actuator is controlled using a Contrac electronic unit. This electronic unit serves as the interface between the actuator and the control system.

During continuous positioning, the electronic unit varies the motor torque steplessly until the actuator force and the control valve force are balanced. High response sensitivity and high positioning accuracy with short positioning time ensure an excellent control quality and a long actuator life.

Operating principles

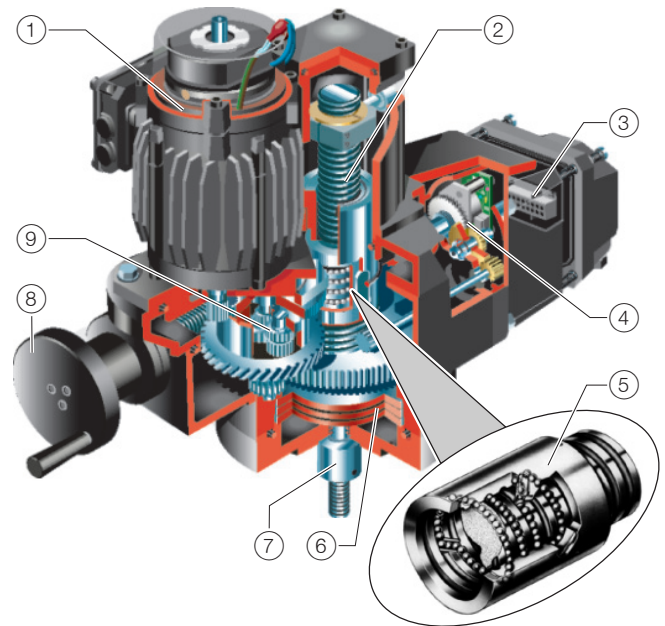
The actuator continuously responds to a set point signal. The motor is permanently under voltage (operating mode S9 - 100 % stall-proof according to IEC 60034-1 / EN 60034-1) and gently increases or reduces the torque on the electronic unit in proportion to the ΔY signal (the difference between the Y set point and the Y position signal).

The actuator is not subject to temperature derating, i.e., there are no restrictions, even at the maximum permissible ambient temperature. Where a state of balance exists, the actuator force and process force are equivalent and the actuator keeps the final control element in the required position.

The classification of the 'S9 - 100 % overload protected' Contrac actuator in accordance with IEC 60034-1 / EN 60034-1 by far exceeds the requirements for the highest class, 'continuous modulation, class D' in accordance with EN 15714-2.

The Contrac actuator offers extensive process optimization capabilities thanks to its high-precision and highly dynamic operation.

Linear actuators



- | | |
|--|----------------------------|
| ① Motor | ⑤ Recirculating ball screw |
| ② Integrated rotary/ linear conversion | ⑥ Integrated springs |
| ③ Sensor connection chamber | ⑦ Thrust rod |
| ④ Position sensor | ⑧ Handwheel |
| | ⑨ Spur gearing |

Figure 1: Cross-section of a linear actuator (example)

Linear actuators are available for rated forces from 2 to 100 kN (450 to 22500 lbf) and feature a common design principle.

For the integrated rotary-linear conversion, the motor drives a low-friction recirculating ball screw (located on the thrust rod) via an oil-lubricated spur gear. This moves the thrust rod outwards or inwards, depending on the motor's direction of rotation.

Integrated springs absorb any peak loads which might occur when approaching the end positions for the valve. They also, however, absorb temperature-related alterations to the length of the thrust rod or valve stem (e.g. when mounting the actuator on a superheated steam pipe).

This design principle in conjunction with the 3-phase asynchronous motor serves as the basis for the continuous operation mode of the actuator.

... Brief description

The handwheel offers an optimum level of performance between handwheel forces and rotational speed, owing to the design principle of the differential gearing. Furthermore, the gear train is not interrupted, even though it is possible to adjust the handwheel at any time. This ensures maximum operational reliability. The 3-phase asynchronous motor is equipped with a spring-loaded brake. The brake is energized in automatic mode. In the case of a fault or failure of the supply voltage, the brake will engage via the spring force and lock the control valve in the current position. This ensures reliable 'Fail-Freeze' action. The brake is maintenance-free, regardless of whether the actuator is controlled via analog, bus, or step controller signals.

Analog signal and power input

For analog control, the set point entry is received from the control system through a 0 to 20 mA or 4 to 20 mA current value. Signal monitoring is possible. Should the signal leave the pre-defined limits, the actuator will perform the set safety procedure (e. g. 'Lock in last position' or 'Drive to safety position').

The position feedback is also given through a 0 to 20 mA or 4 to 20 mA feedback signal. There are 3 digital inputs and 3 digital outputs available in addition to the analog signal. If a digital input is activated, it will take priority over the set point signal (manual mode takes priority over automatic mode).

The following digital input configurations are possible:

| Configuration | Digital input 1 | Digital input 2 | Digital input 3 |
|---------------------|--|---|--|
| OFF | No function | No function | No function |
| Manual intervention | Manual mode / Automatic mode switching | Travel command in OPEN direction | Travel command in CLOSE direction |
| Rapid traverse | Rapid traverse mode / Automatic mode switching | Rapid traverse travel command in OPEN direction | Rapid traverse travel command in CLOSE direction |
| Step controller | ON / OFF step controller activation | Step controller pulses in OPEN direction | Step controller pulses in CLOSE direction |

The digital output function is freely selectable for each output. The following functions are available:

| Function | Description |
|-----------------------------------|--|
| Ready to operate | Signaling of device status. |
| Signal end position 0 % | Actuator has reached the 0 % position. |
| Signal end position 100 % | Actuator has reached the 100 % position. |
| Signal limit value 1 rising | While the signal level is rising, the actuator has reached the position defined as limit value 1. |
| Signal limit value 1 falling | While the signal level is falling, the actuator has reached the position defined as limit value 1. |
| Signal limit value 2 rising | While the signal level is rising, the actuator has reached the position defined as limit value 2. |
| Signal limit value 2 falling | While the signal level is falling, the actuator has reached the position defined as limit value 2. |
| Collective failure | Drive function is no longer given. The actuator is no longer available. |
| Collective alarm | Parameters in the Contrac interface system have adopted values, which make a failure in the near future likely. The actuator remains functional. |
| Local operation | The actuator is operated via the local control station (ISF) |
| Rapid traverse + direction | Actuator is moving at rapid traverse speed in + direction (only for 2-motor version). |
| Rapid traverse control -direction | Actuator is moving at rapid traverse speed in - direction (only for 2-motor version). |

Step controller operation

In the 'step controller' operating mode the incoming control commands are received as pulses at digital inputs 2 and 3 these are upward-integrated into an internal memory. The memory uses these pulses to generate an 'artificial' internal set point which the actuator then follows. This process is as easy on the control valve and actuator operation as the analog control process.

Rapid traverse mode

The actuator is operated exactly in the same operating mode as in the analog control mode. On activation of digital inputs 2 or 3, the actuator moves at twice the rated operating speed and half the torque in the corresponding direction. Just before the end position is reached, the actuator travel speed is automatically switched back to the set speed, at which the remaining distance is covered.

Speed

Contrac actuators offer different speed adjustments for both directions, independently of actuator torque or actuator force. Furthermore, a speed characteristics curve can be set with three different speed values for each direction. The actuator speed is steplessly adapted to the rate of change in speed of the set point value. This ensures a highly dynamic and extremely precise control process. In order to preserve the control valve, the actuator speed is automatically reduced before the end position is reached.

Torque / Force

The torque and actuator force setting options are comparable to the speed setting options. 50 %, 75 % and 100 % of the rated output value can be selected. The electronic unit alters the motor actuation according to the selected value.

Set point monitoring

The set point can be monitored for compliance with the adjustable limit values. Should the set point exceed the upper limit value or fall below the lower limit value, the actuator will perform the previously defined safety action. 'Lock in current Position' or 'Move to pre-defined safety position' are available as safety actions.

Ambient conditions

Temperature

Different temperature versions are available, depending on the actuator type.

The power-up period is not subject to derating, i.e. even at the maximum permissible ambient temperature, the actuator ensures maximum control precision and dynamics during a power-up period of 100 %.

Corrosion protection

Contrac actuators and electronic units have been designed for operation in extreme ambient conditions. They satisfy the requirements of atmospheric corrosivity category C5-I (highly polluted industrial atmospheres) for protection against external corrosion in accordance with DIN EN 15714 (Electric actuators for industrial valves – Basic requirements), and EN ISO 12944-2:1998 (Paints and varnishes. Corrosion protection of steel structures by protective paint systems. Classification of environments).

Electronic cabinet modules satisfy the requirements of category C1 (low pollution) as per EN ISO 12944-2:1998 (Paints and varnishes. Corrosion protection of steel structures by protective paint systems. Classification of environments).

Service life

Contrac actuators and electronic units exceed the service life requirements for the highest class D, 'continuous modulation', as per DIN EN 15714 (Electric actuators for industrial valves – Basic requirements). The actuators remain maintenance-free for up to 10 years under 'normal' load.

Communication

The PROFIBUS DP®, PROFIBUS DP®/V1 or HART® communication protocols are available for digital communication.

PROFIBUS®

PROFIBUS DP® is an international, open field bus protocol which has been standardized in the field bus standard EN 50170. On a cyclic basis, the master reads the input information from the slaves and writes the output information to the slaves. In addition to this cyclic data transfer of the process representation (e. g. setpoint and actual value), Profibus DP also provides powerful functions for diagnostics and commissioning. PROFIBUS DP/V1 additionally offers the acyclic transfer of data for the configuration of slaves, for example. Data traffic is monitored through the monitoring functions on the master and slave sides. In addition to PROFIBUS® data transfer, ABB Contrac actuators provide two configurable binary outputs to for example signal that the end position has been reached. The two configurable digital outputs can be used independently of the bus communication.

HART®

Contrac actuators also offer the option of using the HART® communication protocol for configuration and parameterization while operation is in progress. HART®-FSK communication enables simultaneous analog set point transmission and digital communication without additional installation. The HART signal is modulated on to the 4 to 20 mA analog set point signal. The HART® protocol works with Frequency Shift Keying (FSK) technology, based on the Bell 202 communication standard.

DTM

The DTM (Device Type Manager) for Contrac actuators is based on FDT / DTM technology (FDT 1.2 / 1.2.1) and can either be integrated into a control system or loaded on a PC with DAT200 Asset Vision Basic. This allows you to work with the same user interface in the commissioning phase, during operation, and for servicing tasks, involving monitoring the device, setting parameters, and reading out data.

Communication is based on HART® protocol or PROFIBUS® communication. Reading out data from the device has no effect on the operation in progress. Newly set parameters are saved in the non-volatile memory directly upon download to the device, and become active immediately.

EDD

Similar to DTM, the EDD (Electronic Device Description) provides the option of configuration and parameterization of the device through HART® communication by using a handheld terminal or an EDD integrated in the system.

Specification

Control actuator

| | LME620-AI | LME620-AN |
|--|--|---|
| Operating mode | S9 – 100 %; stall-proof acc. to IEC 60034-1 / EN 60034-1 | |
| IP rating | IP 66 acc. to IEC 60529 / EN 60529 NEMA 4X acc. to CAN/CSA22.2 No. 94 | |
| Humidity | ≤ 95 % annual average; condensation not permitted | |
| Ambient temperature | -10 to 55 °C (15 to 130 °F) -25 to 55 °C (-15 to 130 °F) | -10 to 65 °C (15 to 150 °F) -25 to 55 °C (-15 to 130 °F) |
| Transport and storage temperature | -25 to 70 °C (-15 to 160 °F) | -40 to 70 °C (-40 to 160 °F) |
| Long-term storage temperature | -25 to 40 °C (15 to 105 °F) | -30 to 40 °C (-25 to 105 °F) |
| Mounting position | any position; preferably IMV 1 acc. to IEC 60034-7 / EN 60034-7 | |
| Coating | 2-layer component epoxy (RAL 9005, black) | |
| Anti-condensation heater | - | Optional (separate power supply or power feed from Contrac electronic unit) |
| Power supply for motor and sensors | Via Contrac electronic unit only | |
| Cable between actuator and electronic unit | - | Optional 5 m (16 ft), 10 m (32 ft) or 20 m (65 ft) max. 30 m (98 ft) for electronic unit EAN823 max. 480 m (1575 ft) for electronic unit EAS822 (Follow the 'electronic unit' data sheet!) |
| | LME620-AI | LME620-AN |
| Rated force | 4 kN (900 lbf) (adjustable to 0.5 / 0.75 or 1 × rated force) | |
| Starting force | 1.2 × rated force (break-away torque in end positions for short time 2 × rated force) | |
| Rated operating speed, adjustable | 2 mm/s (12.7 s/in); 0.1 to 2.0 mm/s (254 to 12.7 s/in) | |
| Stroke | min.: 0 to 12 mm (0 to 0.47 in) / max. 0 to 60 mm (0 to 2.36 in) | |
| Weight | Approx. 21 kg (46 lb) | Approx. 17 kg (38 lb) |
| Associated electronic unit | Integrated electronic unit | For field installation: EAN823 For rack installation: EAS822 |
| Thermal motor monitoring | With motor temperature monitoring equipment SD241B or similarly certified tripping unit for thermistor temperature sensors | |
| Motor | 24 V 3~ asynchronous motor | |
| Sensors | Position and temperature sensor always available | |

... Specification

Electronic unit

Note

Detailed information on separate electronic units can be found in the corresponding data sheets.

Power supply

| PME120-AI / LME620-AI | | | | |
|---|--|----------------------------|----------------------------|---|
| Supply voltage | 115 V AC (94 to 130 V) or 230 V AC (190 to 260 V); 47.5 to 63 Hz; single-phase | | | |
| Current consumption at the electronic unit [A] (AC 115 V / AC 230 V) | LME620-AI, PME120 | I_{\max} at 115 V: 1.0 A | I_{\max} at 230 V: 0.5 A | I_{pos} (115 V + 230 V): approx. 40 to 50 % of I_{\max} |
| Actuators for low temperature design | LME620-AI, PME120 | I_{\max} at 115 V: 1.4 A | I_{\max} at 230 V: 0.7 A | |
| External fuse | 16 A; time-lag | | | |

Communication

| Conventional communication | |
|---------------------------------------|---|
| Analog input | 0 / 4 to 20 mA; internal load: 300 Ω |
| Analog output | 0 / 4 to 20 mA, electrically isolated, max. load 500 Ω |
| 3 digital inputs, 1 to 3 | Digital 0: -3 to 5 V or open, electrically isolated Digital 1: 12 to 35 V, electrically isolated |
| 3 digital outputs, 1 to 3 | Potential-free relay contact, max. 60 V, 150 mA |
| Digital communication | RS232 for commissioning and service, with optional FSK / HART® or PROFIBUS DP® |
| Default settings | See Table Conventional communication on page 10. |
| Voltage output U_V | 24 V, 15 mA, electrically isolated, for scanning external contacts, or similar applications |
| Connection for transmitter (optional) | Supply for two-wire transmitter with activated process controller in Contrac |
| Individual settings | See data sheet 'DS/CONTRAC/SETTING' or available upon request. |

PROFIBUS DP® Communication

| | |
|----------------------------------|--|
| PNO ID no. | 0×9655 Actuators with DP/V0 communication (cyclic data traffic) 0×09EC Actuators with DP/V1 communication (cyclic and acyclic data traffic) |
| Communication protocol | PROFIBUS PA® Profile V3.0 Class B in accordance with IEC 50170 / EN 50170 (DIN 19245) |
| Bus cable | Twisted, shielded copper wire acc. to IEC 50170 / EN 50170 |
| Interface | EIA-485 (RS485) acc. to IEC 50170 / EN 50170 |
| Permissible baud rates | 93.75 Kbit/s 187.5 Kbit/s 500 Kbit/s 1500 Kbit/s Automatic baud rate detection |
| Bus address | 0 to 126, default address 126 Set Slave Address service is supported |
| Bus termination | Connectable active bus termination. Power supply from electronic unit |
| Block types | 1 analog input function block 1 transducer block 1 physical block |
| Failsafe | Failsafe function is supported. Configurable function for downtime of bus communication <ul style="list-style-type: none"> • Lock in last position • Drive to safety position • Adjust with last effective set point Adjustable time delay |
| Modules for cyclic communication | 8 standards-compliant modules and 3 manufacturer-specific modules are available.* SP (Short) SP (Long) RCAS_IN+RCAS_OUT SP+READBACK+POS_D SP+CHECKBACK SP+READBACK+POS_D+CHECKBACK RCAS_IN+RCAS_OUT+CHECKBACK SP+RCAS_IN+READBACK+RCAS_OUT+POS_D+CHECKBACK STANDARD SP+RB+MESSEING SP+RB+ENL_DIAG |
| Acyclic communication | Full parameterization and configurability via Master Class 2 and DTM |
| Default settings | PROFIBUS DP® communication on page 10 |
| Digital outputs 1 and 2 | In addition to the PROFIBUS®-communication, there are 2 digital outputs. Potential-free relay contact, max. 60 V, 150 mA Default setting: Digital output 1 End position signal 0 % Digital output 2 End position signal 100 % |
| Individual settings | See data sheet 'DS/CONTRAC/SETTING' or available upon request. |

* A full description of communication modules can be found in parameterization and configuration instructions 45/68-10

... Specification

Delivery state

The standard delivery scope includes metric cable entry threads with IP66 seal plugs. Optional NPT and PG adapters are available. The individual actuator configuration may vary from the standard setup above. This information can be displayed via the user interface. Unless otherwise specified by the user, the electronic units are delivered with the following standard configuration:

| Conventional communication | |
|---|--|
| Parameter | Setting |
| Function selection | Positioner, parameter: set point |
| Set point function | Analog set point |
| Set point range | 4 to 20 mA |
| Set point characteristic | Linear; set point = position value |
| Actual value range | 4 to 20 mA |
| Nominal torque / rated force in +/- direction | 100 % |
| Automatic speed in \pm direction: | 100 % |
| Action in 0 % / 100 % end position | Keep leak-tight with nominal torque / rated force |
| Digital inputs | Digital input 1 Manual / Automatic switching, Digital input 2 / 3 Travel command +/- |
| Digital outputs | Digital output 1 ready for operation / error message, Digital output 2 / 3 end position signaling 0 % / 100 % |
| Brake Away Function | Deactivated |
| Shut-off function | Deactivated |
| Positioning loop monitoring | Deactivated |
| Set point monitoring | Deactivated |
| Alarm Type | Deactivated |
| Action after restoration of power | Switch to Automatic |
| Working range of actuator | Not set |

PROFIBUS DP® communication

| Parameter | Setting |
|---|---|
| Function selection | Positioner, parameter: set point |
| Set point function | Digital |
| Set point range | 4 to 20 mA |
| Set point characteristic | Linear; set point = position value |
| Actual value range | Digital |
| Nominal torque / rated force in \pm direction | 100 % |
| Automatic speed in \pm direction: | 100 % |
| Action in 0 % / 100 % end position | Keep leak-tight with nominal torque / rated force |
| Digital outputs | Digital output 1 / 2 end position signal 0 % / 100 % |
| Brake Away Function | Deactivated |
| Shut-off function | Deactivated |
| Positioning loop monitoring | Deactivated |
| Communication monitoring | PROFIBUS DP® / V0: Activated Lock in last position PROFIBUS DP® / V1: Activated After delay time has elapsed (standard configuration 5 s) Lock in last position |
| Alarm Type | Deactivated |
| Action after restoration of power | Switch to Automatic |
| Working range of actuator | Not set |

Electrical connections

Wire cross-sectional areas

Control actuator

| | | Crimp pins | | Screw terminals (optional) | |
|----------------------------|---------------------|--------------------------|-----------------------------------|----------------------------|----------------------------|
| Separate electronic unit | Cable cross-section | Motor / brake / heater: | max. 1.5 mm ² (16 AWG) | Motor / brake / heater / | 0.2 to 2.5 mm ² |
| | | Signals: | max. 0.5 mm ² (20 AWG) | signals: | (24 to 14 AWG) |
| | Contact surface | Motor / brake / signals: | Gold-plated | Motor / brake / signals: | Gold-plated |
| | | Heater: | Silver-plated | Heater: | Silver-plated |
| integrated electronic unit | Cable cross-section | Power supply: | max. 2.5 mm ² (14 AWG) | Power supply / signals: | 0.2 to 2.5 mm ² |
| | | Signals: | max. 0.5 mm ² (20 AWG) | | (24 to 14 AWG) |
| | Contact surface | Power supply /signals: | Gold-plated | Power supply /signals: | Gold-plated |

Electronic unit

EAN823 – screw terminals

| | |
|-------------|---|
| Motor/brake | rigid: 0.2 to 6 mm ² (24 to 10 AWG) flexible: 0.2 to 4 mm ² (24 to 12 AWG) |
| Mains | rigid: 0.5 to 6 mm ² (20 to 10 AWG) flexible: 0.5 to 4 mm ² (20 to 12 AWG) |
| Signals | rigid: 0.5 to 6 mm ² (20 to 10 AWG) flexible: 0.5 to 4 mm ² (20 to 12 AWG) |

EAS822 – Clamping connection

| | Suited for cable Ø | Terminals for conductor cross-section |
|----------------------|--------------------|---------------------------------------|
| Mains cable | 13 mm (0.51 in) | max. 4 mm ² (12 AWG) |
| Signal cable (DCS) | 8 mm (0.31 in) | max. 1.5 mm ² (16 AWG) |
| Transmitter (option) | 8 mm (0.31 in) | max. 1.5 mm ² (16 AWG) |
| Motor cable | 13 mm (0.51 in) | max. 4 mm ² (12 AWG) |
| Sensor cable | 8 mm (0.31 in) | max. 1.5 mm ² (16 AWG) |

Cable glands

The actuators and electronic units are supplied without cable glands. Suited cable glands must be installed on site.

Tap holes for cable glands

| | metric | optional adapters for* | |
|---------|-----------------|------------------------|----------------|
| Signals | M20 × 1.5 (2 ×) | PG 16 (2 ×) | NPT ½ in (2 ×) |
| Motor | M25 × 1.5 (1 ×) | PG 21 (1 ×) | NPT ¾ in (1 ×) |

* Adapter for PG or NPT thread must be ordered separately

Selection of suited connection cables

Please observe the following information when selecting cables:

- Use shielded cables for the motor / brake cable, the sensor cable, and the signal cable to the control system / controller.
- Connect the shielding of the motor / brake cable and the sensor cable on both sides (to the actuator and to the Contrac electronic unit).

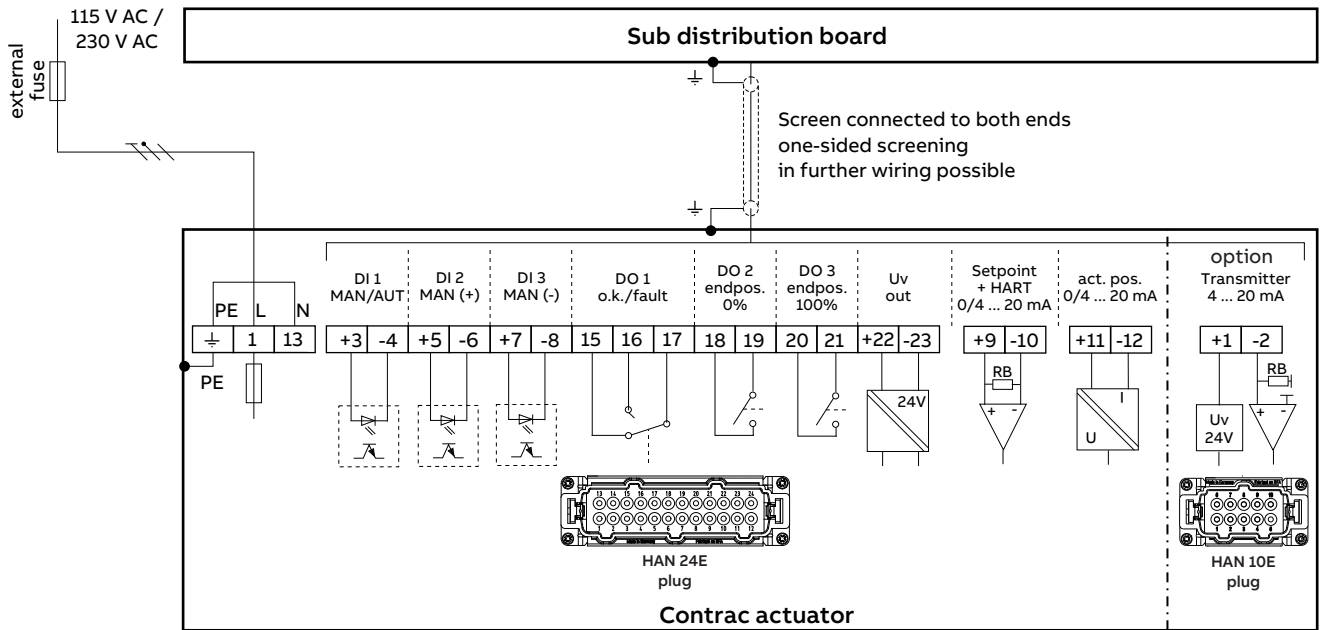
... Electrical connections

Integrated electronic unit LME620-AI

Analog / Digital

Note

The electrical connection is established via a universal plug on the actuator.



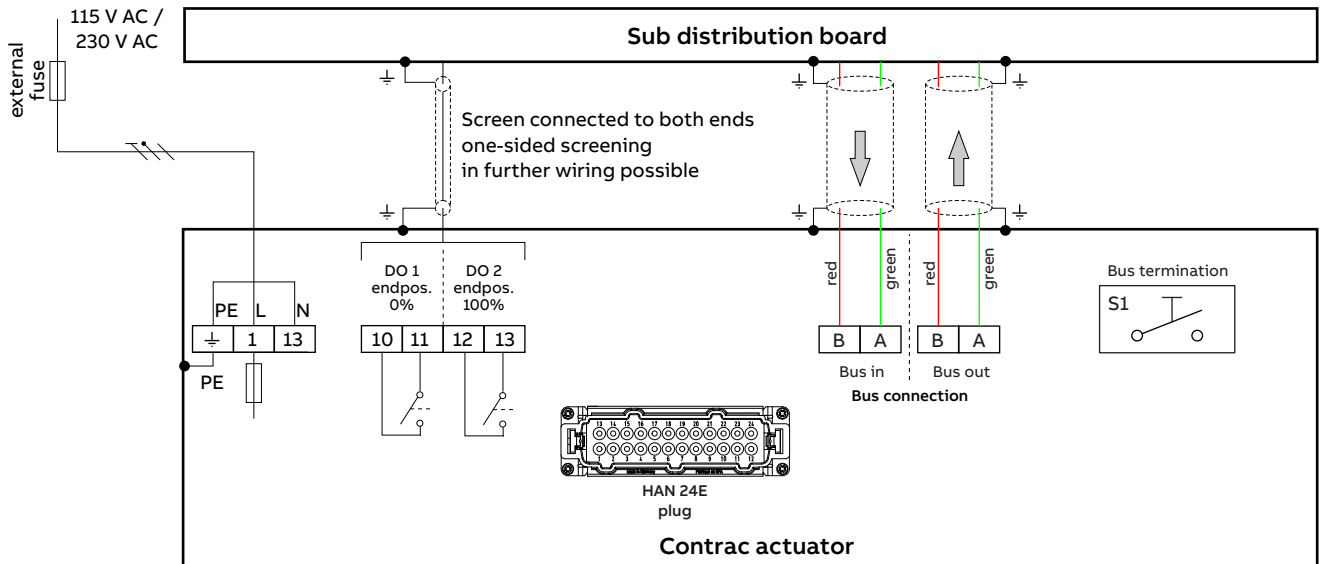
BE = digital input
 BA = digital output

Figure 2: Control via analog input 0/4 to 20 mA, HART® communication or digital inputs

PROFIBUS DP®

Note

The electrical connection is established via a universal plug on the actuator.



BA = digital output

Figure 3: Control via fieldbus PROFIBUS DP®

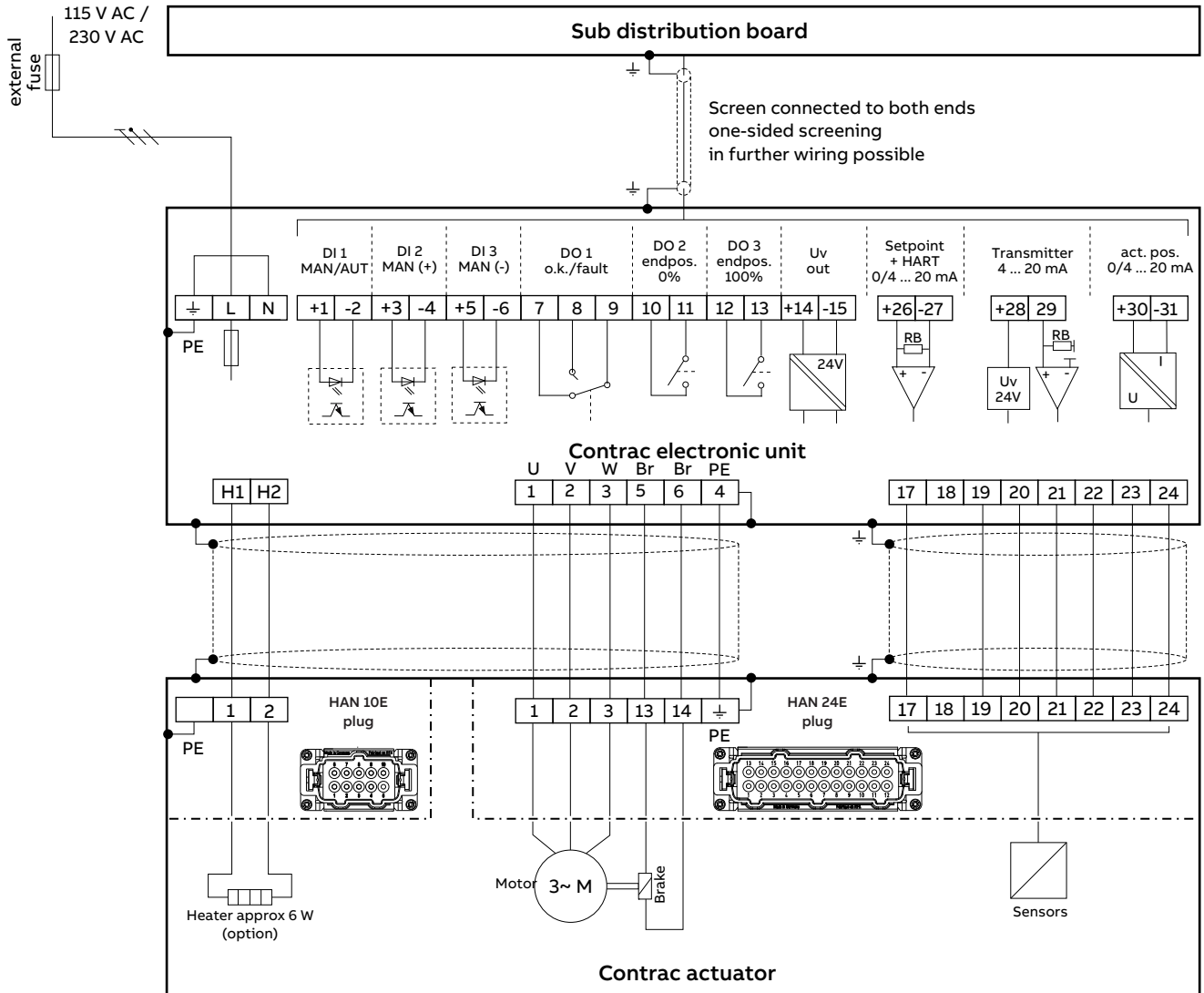
... Electrical connections

Electronic unit EAN823 (Contrac) for LME620-AN

Analog / Digital

Note

- The electrical connection is provided by a universal plug on the actuator and the screw terminals on the electronic unit.
- If you are using a separate heat supply, the heater must be protected with a 2 to 6 A medium time-lag fuse (e.g., NEOZED D01 E14).



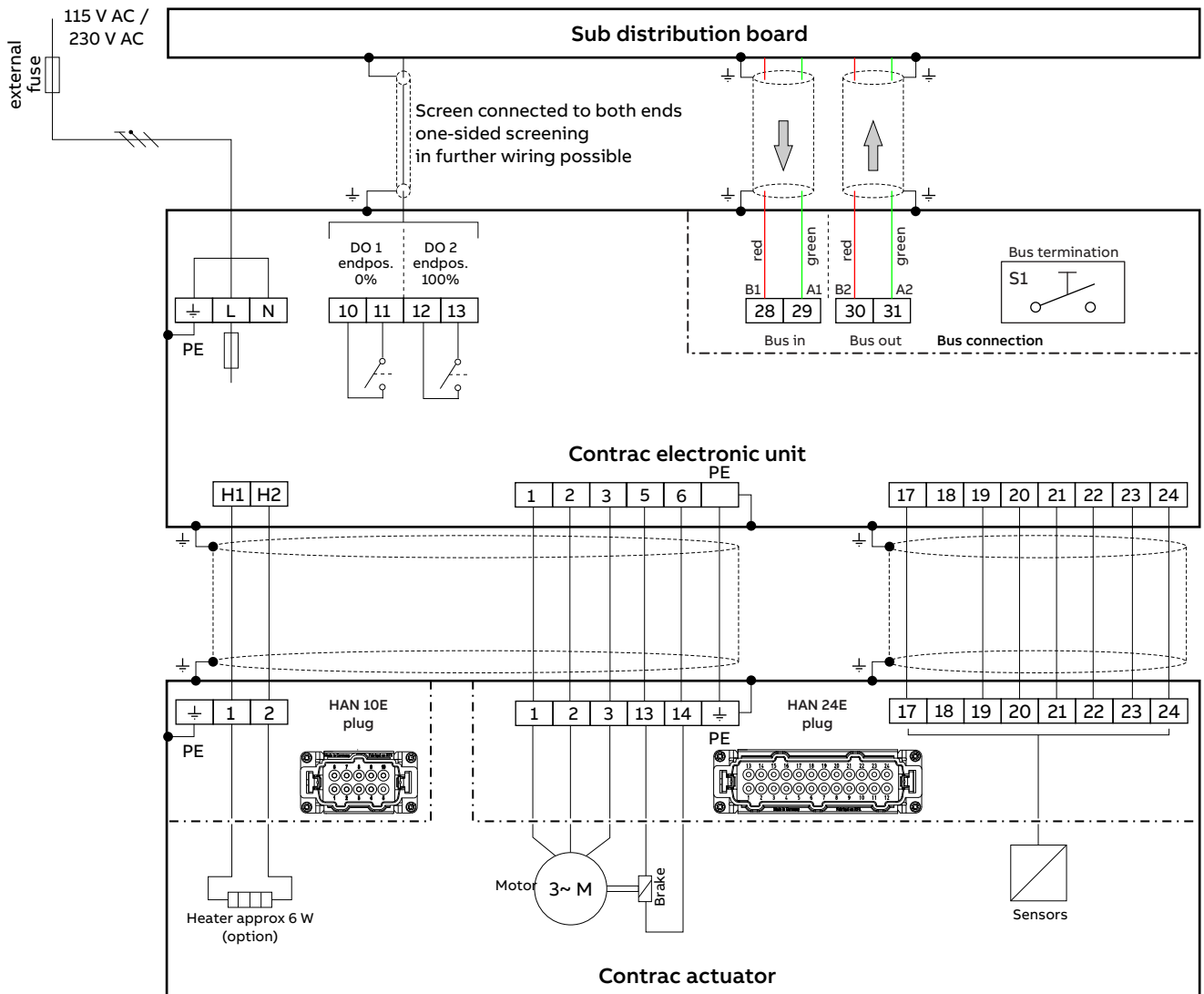
BE = digital input
 BA = digital output

Figure 4: Control via analog input 0/4 to 20 mA, HART® communication or digital inputs

PROFIBUS DP®

Note

- The electrical connection is provided by a universal plug on the actuator and the screw terminals on the electronic unit.
- If you are using a separate heat supply, the heater must be protected with a 2 to 6 A medium time-lag fuse (e.g., NEOZED D01 E14).



BA = digital output

Figure 5: Control via fieldbus PROFIBUS DP®

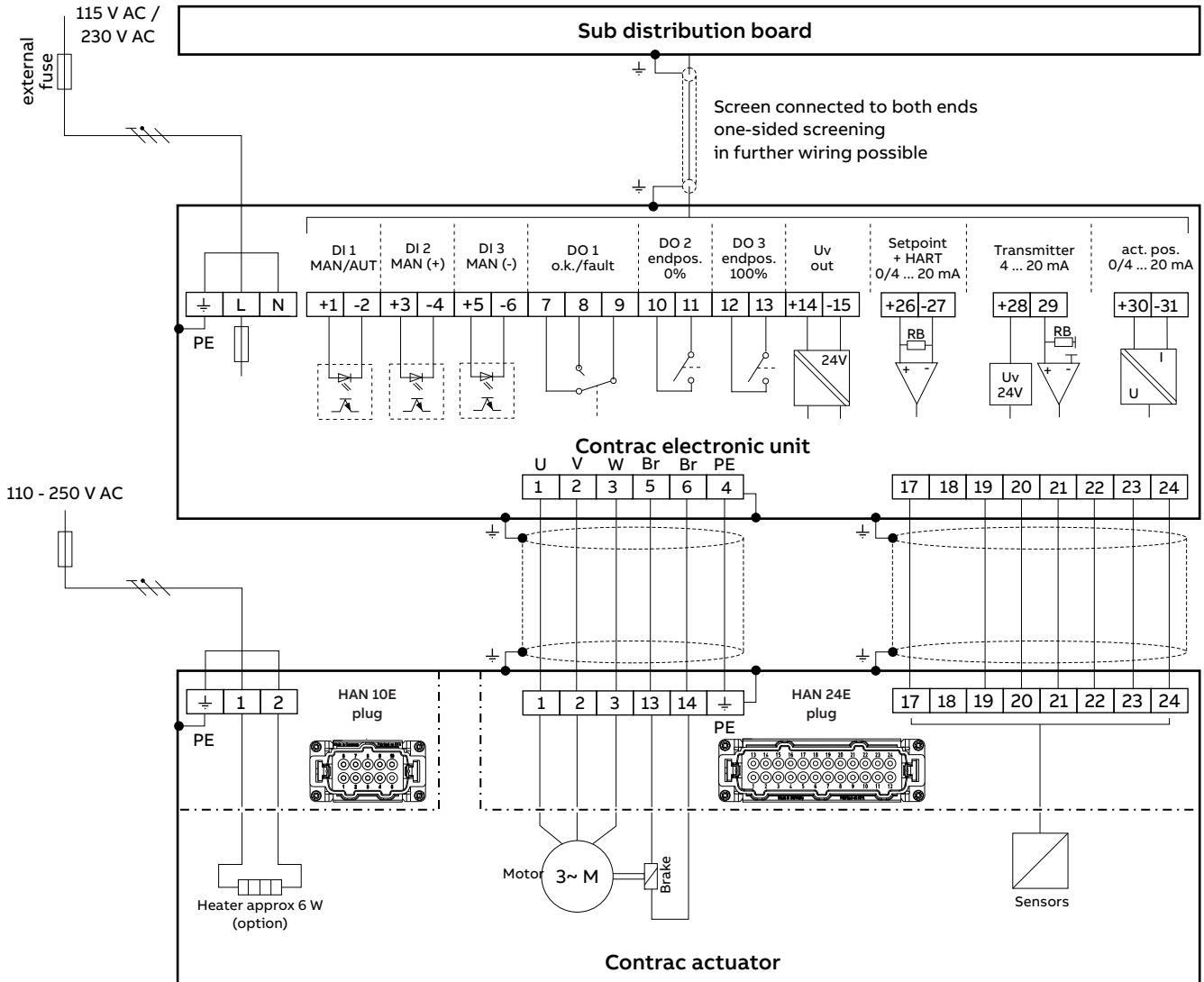
... Electrical connections

Electronic unit EAS822 (Contrac) for LME620-AN

Analog / Digital

Note

- The electrical connection is provided by a universal plug on the actuator and the screw terminals on the electronic unit.
- If you are using a separate heat supply, the heater must be protected with a 2 to 6 A medium time-lag fuse (e.g., NEOZED D01 E14).



BE = digital input
 BA = digital output

Figure 6: Control via analog input 0/4 to 20 mA, HART® communication or digital inputs

Dimensions

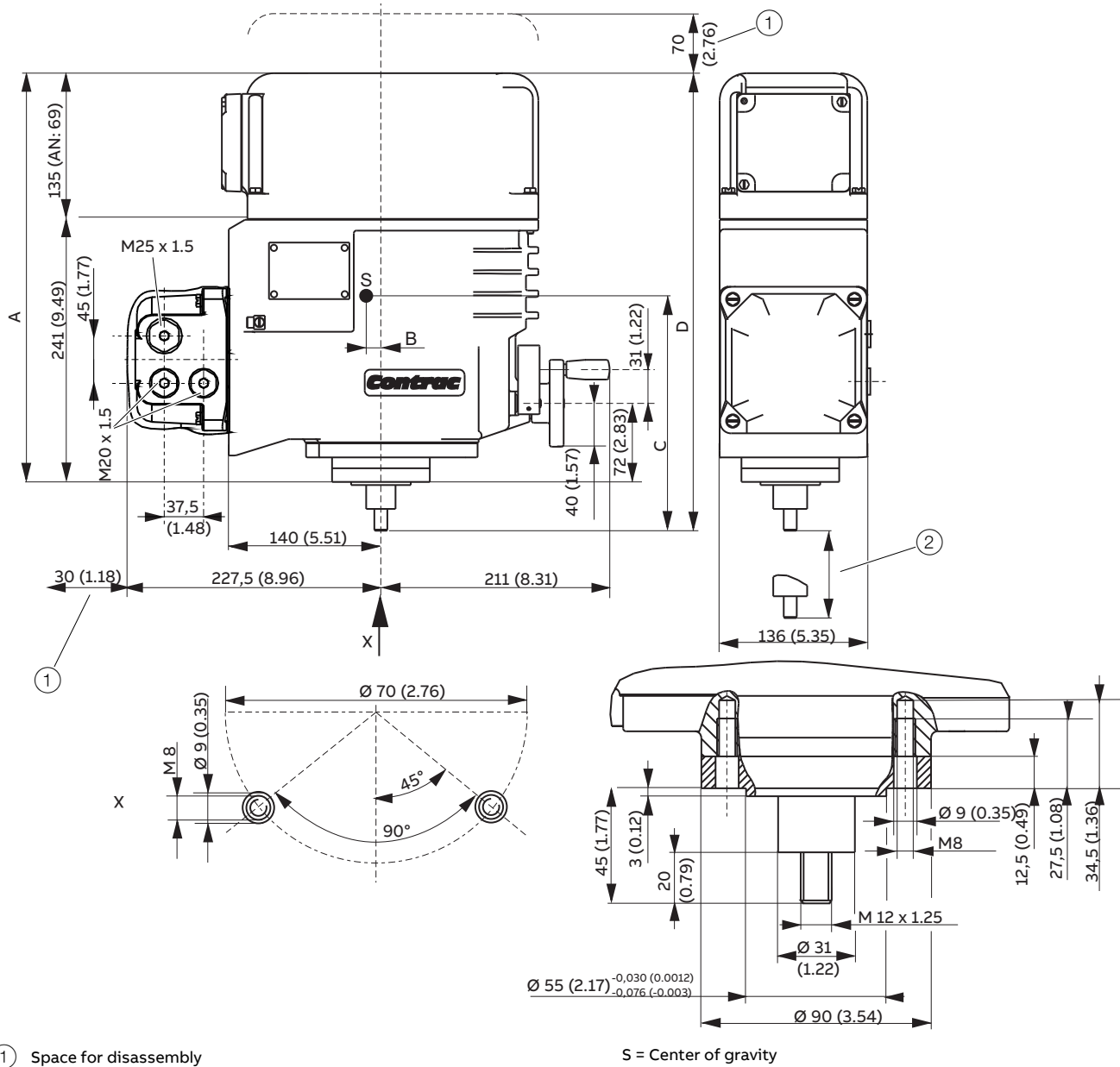


Figure 7: Dimensions in mm (in)

| | A | B | C | D |
|-----------|-------------------|----------------|------------------|-------------------|
| LME620-AI | 376 mm (14.80 in) | 3 mm (0.12 in) | 158 mm (6.22 in) | 421 mm (16.57 in) |
| LME620-AN | 310 mm (12.20 in) | 0 mm (0 in) | 131 mm (5.16 in) | 355 mm (13.98 in) |

... Ordering Information

LME620-AN

| | | | | | |
|--|--|------|-----|-----|-----|
| Basic model | V68620A | XXXX | XXX | XXX | XXX |
| LME620-AN Linear Actuator, for separate Electronic Unit, rated force 4 kN (900 lbs) (adjustable to 50 % / 75 % / 100 %) | | | | | |
| Rated Speed | 2.0 mm/s (12.7 s/in) (adjustable to 2.0 to 0.1 mm/s) | | | | |
| | 0000 | | | | |
| Electrical Connection | Plug (24-pole) complete, crimped | | | | |
| | 277 | | | | |
| | Plug (24-pole) complete, terminals | | | | |
| | 278 | | | | |
| | Plug bottom part covered | | | | |
| | 279* | | | | |
| Connection to Electronic Unit | EAN820, EAN823 (supply voltage 230 V AC) | | | | |
| | 280 | | | | |
| | EAN820, EAN823 (supply voltage 115 V AC) | | | | |
| | 281 | | | | |
| | EAS822 (supply voltage 230 V AC) | | | | |
| | 282 | | | | |
| | EAS822 (supply voltage 115 V AC) | | | | |
| | 283 | | | | |
| Ambient Temperature Range | -10 to 65 °C (15 to 150 °F) | | | | |
| | 344 | | | | |
| | -25 to 55 °C (-15 to 130 °F) | | | | |
| | 343 | | | | |

* Female plug with cables to be ordered with electronic unit

Additional ordering information LME620-AN

| | | | | | | | | | |
|---|--|-----|-----|-----|-----|-----|-----|-----|-----|
| LME620-AN Linear Actuator, for separate Electronic Unit | XXX | XXX | XXX | XXX | XXX | XXX | XXX | XXX | XXX |
| Electrical Connection Thread | Set NPT adapter (junction metric / NPT thread) | | | | | | | | |
| | 680 | | | | | | | | |
| | Set PG adapter (junction metric / PG thread) | | | | | | | | |
| | 681 | | | | | | | | |
| Anti-condensation Heater | Anti-condensation heater | | | | | | | | |
| | 360 | | | | | | | | |
| Identification on Data Label | Alphanumeric, max. 32 characters | | | | | | | | |
| | 294 | | | | | | | | |
| Data Label with US Units | Data label with US units | | | | | | | | |
| | 253 | | | | | | | | |
| Accessories: Plug Cover | Cover for male plug (24 pole) | | | | | | | | |
| | 337 | | | | | | | | |
| Accessories: Plug Holder | Plug holder for male plug (24 pole) | | | | | | | | |
| | 338 | | | | | | | | |
| Factory Certificate 2.1 acc. to EN 10204 | Factory certificate 2.1 acc. EN 10204 | | | | | | | | |
| | 291 | | | | | | | | |
| Certificate 3.1 acc. to EN 10204 | Certificate 3.1 acc. EN 10204 | | | | | | | | |
| | 292 | | | | | | | | |
| Operating Instruction | German | | | | | | | | |
| | Z1D | | | | | | | | |
| | English | | | | | | | | |
| | Z1E | | | | | | | | |
| | Portuguese | | | | | | | | |
| | Z1P | | | | | | | | |
| | Italian | | | | | | | | |
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| | French | | | | | | | | |
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