

Valve controller

# AMTRONIC

AMTRONIC R1300  
Compressed Air Supply and Position Sign

## Type Series Booklet



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Type Series Booklet AMTRONIC

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## Automation

### Valve Controller

## AMTRONIC



### Main applications

- Water
- Waste water
- Energy
- Industry
- Shipbuilding
- Oil and gas

### Operating data

Operating data overview

| Characteristic                | Value   |
|-------------------------------|---|
| Standard enclosure            | IP 67 to EN 60529   |
| Electromagnetic compatibility | In conformity with the European EMC Directive 2004/108/EC and NF EN 61000-6-2/NF EN 61000-6-4 |
| Operating temperature         | <b>-20 °C to +80 °C</b>   |
| Vibrations                    | To IEC 68-2-6 Test Fc   |
| Compressed air purity class   | ISO 8573-1 Class 5  |

### Design details

- AMTRONIC is an open/close control unit for valves.
- Used for the control of:
  - Quarter-turn actuators from the ACTAIR and DYNACTAIR type series
  - Quarter-turn actuators with standardised VDI/VDE 3845 interface
  - Linear actuators to NAMUR
- AMTRONIC features a LEXAN housing (PC with 20% glass fibre) accommodating the following 3 components:

- Electrical connection
- Control and signalling board
- Compressed air supply
- The compressed air supply is connected via the base:
  - Direct connection to ACTAIR and DYNACTAIR
  - Connection via external piping for quarter-turn actuators with standardised VDI/VDE 3845 interface and for linear actuators to NAMUR
- All AMTRONIC versions incorporate the following electrical and pneumatic functions:
  - Open/closed position signalling via limit switches or proximity sensors, actual-position feedback via a 4-20 mA signal (optional)
  - Compressed air supply via integrated directional control valve (4/2 monostable, 4/2 bistable or 4/3 closed in centre position)
- To ensure a long service life of the pneumatic directional control valves, the compressed air is filtered.
- The actuating times for open/close operations are set via the easily accessible air flow reducer.

### Variants

- AMTRONIC can be equipped with a wide range of limit switches and proximity sensors.
- Profibus DP version
- AS-i version
- Actual-position feedback via 4-20 mA signal
- Different supply voltages for the directional control valves

### Product benefits

- For commissioning and maintenance, it is possible to manually operate the actuator via the pilot valve's manual override without having to open the cover.
- Fully enclosed design avoids protruding, moving components
- The adjustable cams are reliable and facilitate the setting of the open/closed positions.
- Position indicator under sight glass for remote indication
- Direct mounting to ACTAIR and DYNACTAIR
  - No installation components required (bracket and socket)
  - The compressed air is supplied directly supplied via the VDI/VDE interface.
- The AMTRONIC can be equipped with a variety of different limit switches and proximity sensors from leading suppliers in this field (Pepperl&Fuchs, IFM, Télémécanique, etc.), allowing the control unit to be individually equipped in compliance with customers' requirements.
- The integrated directional control valve is protected against shock, corrosion and dust.

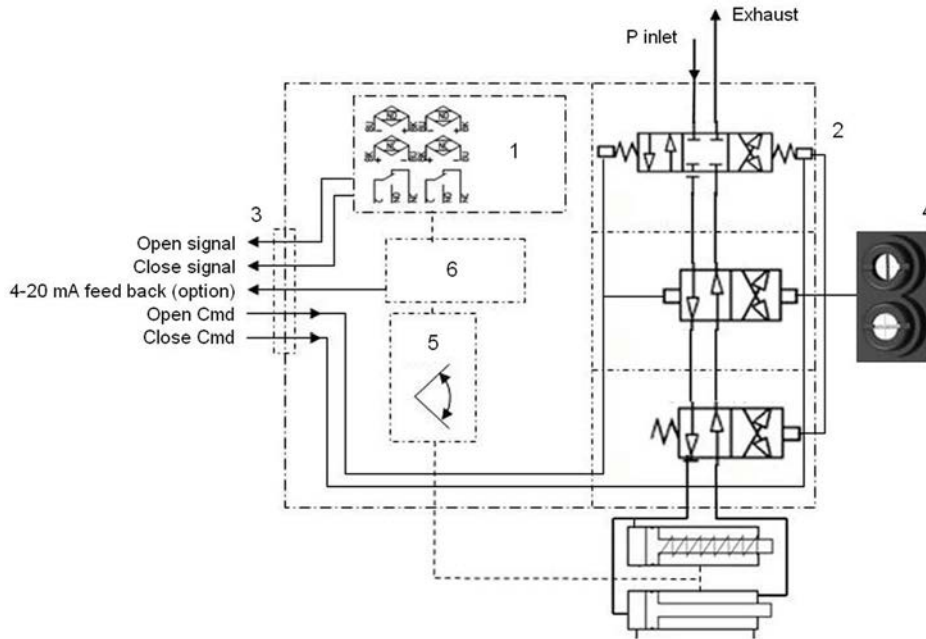
### Related documents

Other applicable documents

| Document         | Reference No. |
|------------------|---------------|
| Operating manual | 8514.8371     |
|                  | 42 812 299    |

Technical data

Functional schematic



1 - Limit switches or proximity sensors

2 - Compressed air supply via a 4/2 bistable, 4/2 monostable or a 4/3 directional control valve which is closed in centre position

3 - Terminal strip

4 - Manual override

5 - Angle sensor (optional)

6 - Actual-position feedback via 4-20 mA signal (optional)

**Technical specification**

| Housing                   |   |
|---------------------------|---|
| Material                  | LEXAN (PC with 20% glass fibre)   |
| Position indicator        | <b>Visual position indicator on the cover</b>   |
| Compressed air connection | 2 x 1/4" gas ports  |
| Electrical connection     | 2 M20 ports for cable gland<br>Connection to screw-type terminal strip (max. 1.5 mm <sup>2</sup> cable) |
| Weight                    | 1.5 kg  |

| Compressed air supply             |  |
|-----------------------------------|--|
| Compressed air supply             | 1/4" gas port, marked "P" with filter fitted in the base                                     |
| Exhaust                           | 1/4" gas port, marked "E", with silencer or exhaust system connection                        |
| Operating pressure                | <b>3 to 8 bar (44 to 115 psi)</b>  |
| Filtration                        | ISO 8573-1 Class 5 (< 40 µm)   |
| Dew point                         | ISO 8573-1 Class 5 (< 7 °C (pressure) and in all cases < 5 °C below the ambient temperature) |
| Lubrication                       | ISO 8573-1 Class 5 (< 25 mg/m <sup>3</sup> )   |
| Max. flow rate                    | 400 Nl/min (at 25 °C)  |
| Consumption in "at rest" position | Zero   |

**Compressed air supply function**

The directional control valve fitted in the AMTRONIC control unit uses a ceramic-slide technology design. The compressed air can be dry or lubricated. They are operated by one or two pilot valves.

Possible configurations:

Double-acting actuators

- 4/2 directional control valve, monostable
- 4/2 directional control valve, bistable
- 4/3 directional control valve, closed when under pressure

With:

Fail-safe position: 'Fail Close' in the event of a power failure  
 Fail-safe position: 'Fail Open' in the event of a power failure  
 'Fail-in-last' position when de-energised (4/3 directional control valve)

Single-acting actuators

- 4/2 directional control valve, monostable
- 4/3 directional control valve, closed when under pressure

With:

Fail-safe position: 'Fail Close' in the event of a power failure  
 Fail-safe position: 'Fail Open' in the event of a power failure  
 'Fail-in-last' position (4/3 directional control valve), fail-safe position being Fail Open or Fail Close in the event of compressed air supply failure (single-acting actuator)

**Table for compressed air supply function**

For ACTAIR double-acting actuators

| Configuration                            | Case 1a         | Case 1b         | Case 2                  |
|--|-----------------|-----------------|-------------------------|
| Fail-safe position, power supply failure | Fail Open       | Fail Close      | Fail Close or Fail Open |
| Directional control valve                | 4/2, monostable | 4/2, monostable | 4/2, bistable           |
| Pilot valve                              | 1 PV 3/2 NC     | 1 PV 3/2 NC     | 2 PV 3/2 NC             |

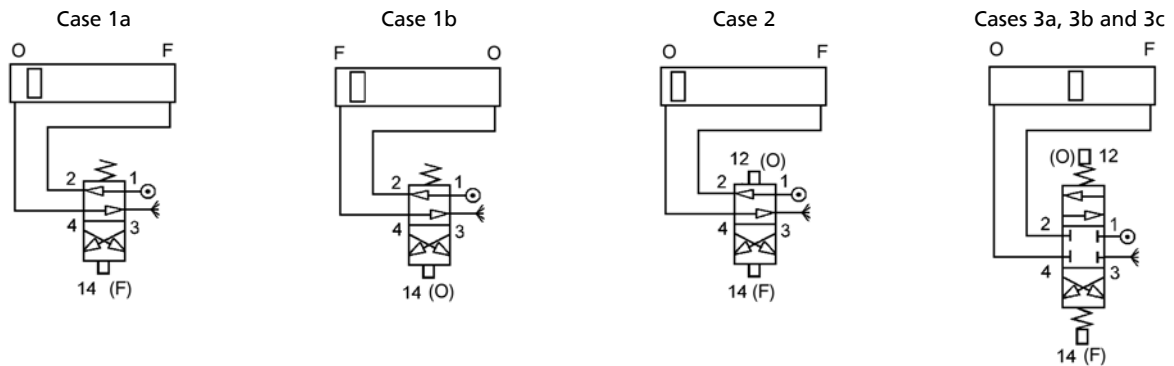
| Configuration                            | Case 3a  | Case 3b  | Case 3c  |
|--|--|--|--|
| Fail-safe position, power supply failure | Fail-in-last                                       | Fail Open  | Fail Close   |
| Directional control valve                | 4/3, closed in centre position when under pressure | 4/3, closed in centre position when under pressure | 4/3, closed in centre position when under pressure |
| Pilot valve                              | 2 PV 3/2 NC  | 1 PV 3/2 NO<br>1 PV 3/2 NC                         | 1 PV 3/2 NO<br>1 PV 3/2 NC                         |

For DYNACTAIR single-acting actuators

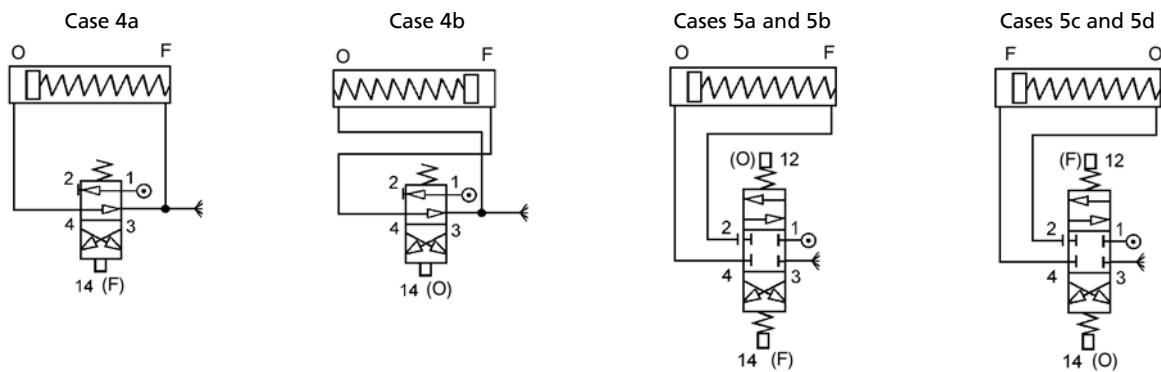
| Configuration                            | Case 4a         | Case 4b         | Case 5a  | Case 5b  | Case 5c  | Case 5d  |
|--|-----------------|-----------------|--|--|--|--|
| Fail-safe position, power supply failure | Fail Open       | Fail Close      | Fail-in-last                                       | Fail Close   | Fail-in-last                                       | Fail Open  |
| Directional control valve                | 4/2, monostable | 4/2, monostable | 4/3, closed in centre position when under pressure | 4/3, closed in centre position when under pressure | 4/3, closed in centre position when under pressure | 4/3, closed in centre position when under pressure |
| Pilot valve                              | 1 PV 3/2 NC     | 1 PV 3/2 NC     | 2 PV 3/2 NC  | 1 PV 3/2 NO<br>1 PV 3/2 NC                         | 2 PV 3/2 NC  | 1 PV 3/2 NO<br>1 PV 3/2 NC                         |

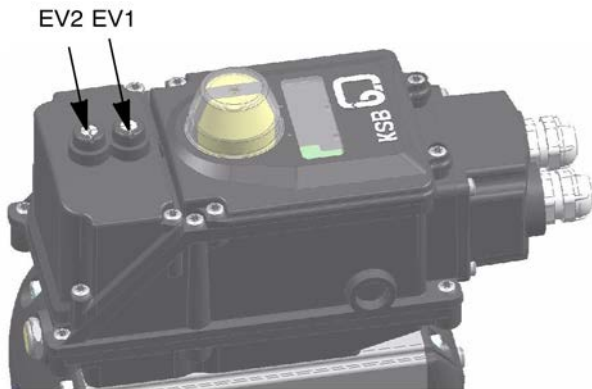
**Schematic for compressed air supply function**

For ACTAIR double-acting actuators

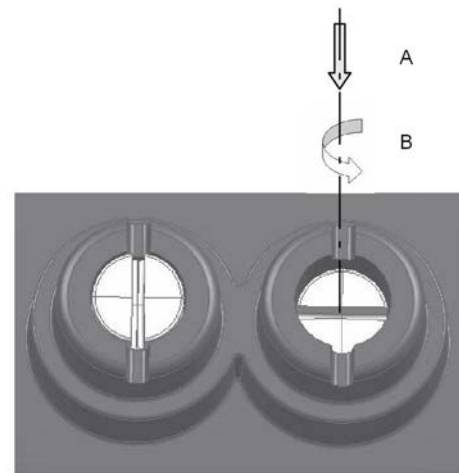


For DYNACTAIR single-acting actuators



**Manual override of directional control valve**


The pilot valves can be manually controlled via the buttons accessible from outside.



EV2 = 0

EV1 = 1

The manual override buttons can be locked.

How to use the manual override

A - Press the manual override button

B - Lock it in this position by turning it 90°

To avoid any interference with the pilot valves' electrical commands, it is recommended that the manual override only be used when the control unit is not energised.

**Position signalling function**

Two position signalling options are available for AMTRONIC:

- Via mechanical limit switches, Crouzet
- Via proximity sensors, IFM

A special feature of the AMTRONIC is that it can be fitted with limit switches or proximity sensors from other manufacturers according to the customer's specification.

Thanks to 20 years of experience in valve automation, a wide range of partner products is available from IFM, P&F, Télémécanique, etc.

Should customer processes require other limit switches or proximity sensors, please consult us.

**Mechanical limit switches: technical data**

| Mechanical limit switches, Crouzet |   |                                      |                                      |
|------------------------------------|---|--------------------------------------|--------------------------------------|
| Supplier:                          | Crouzet   |                                      |                                      |
| Material:                          | Housing   | Polyester UL94V0                     |                                      |
|                                    | Button  | Polyester                            |                                      |
|                                    | Switching contact                               | Ag/Ni gold plated                    |                                      |
|                                    | Membrane  | Silicone                             |                                      |
| Switching capacity:                | Breaking capacity 6 A at 24 V DC and 250 V AC   |                                      |                                      |
| Life expectancy:                   | Electrical                                      | at I = 5 A                           | 7 x 10 <sup>4</sup> operating cycles |
|                                    |   | at I = 1 A                           | 3 x 10 <sup>5</sup> operating cycles |
|                                    |   | at I = 0,2 A                         | 10 <sup>6</sup> operating cycles     |
|                                    | Mechanical                                      | 2 x 10 <sup>6</sup> operating cycles |                                      |
| Vibration fatigue limit:           | IEC 60068-2-6 / 3 axes / 50 g from 10 to 500 Hz |                                      |                                      |
| EMC:                               | EN 50081-2, EN 50082-2                          |                                      |                                      |
| Electrical connection:             | Soldered on printed circuit board               |                                      |                                      |
| Enclosure:                         | IP 67   |                                      |                                      |

**Proximity sensors: technical data**

| Proximity sensors, IFM XC035 |   |
|------------------------------|---|
| Supplier:                    | IFM   |
| Housing material:            | IEC 60068-2-6 / 3 axes / 50 g from 10 to 500 Hz |
| Max. current rating:         |   |
| - Peak:                      | 200 mA  |
| - Maximum:                   | 200 mA  |

| Proximity sensors, IFM XC035 |               |
|------------------------------|---------------|
| Min. current rating:         | 4 mA          |
| Max. voltage drop:           | $\leq 4,6$ V  |
| Leakage current:             | $\leq 0.8$ mA |
| Max. switching frequency:    | 2 kHz         |
| Operating status indication: | Yellow LED    |

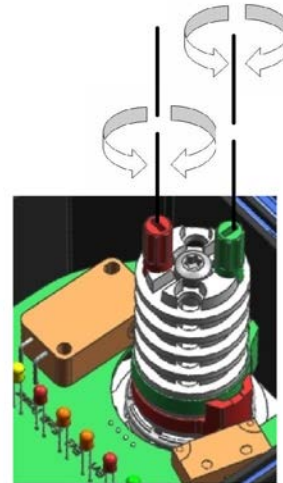
It is possible to add a third limit switch or proximity sensor for intermediate position signalling.

### Setting the cams for position signalling

The cams are pre-set in the factory.

This setting can however be changed if the actuator's mechanical end stops are changed.

The limit switches or proximity sensors can be set independently of one another on the cams along the entire valve travel. (See Operating manual, ref. No. 8514.8371).



### Option: actual-position feedback

Technical data of the passive actual-position feedback (4-20 mA signal/2-wire system)

| Parameter   | Minimum | Nominal    | Maximum    | Unit |
|---|---------|------------|------------|------|
| Power supply  | 7.5     | 21.5       | 36         | V DC |
| Output signal   | 3.6     | /          | 28         | mA   |
| Resistance $[(U_{\text{Supply}} - 7.5 \text{ V}) / 0.02 \text{ A}]$ | 0       | 700        | 1425       | Ohm  |
| Zero adjustment (4 mA)  | 2       | 4          | 11         | mA   |
| Span adjustment (20 mA)   | 16      | 20         | 26         | mA   |
| Temperature range   | -20     | /          | +70        | °C   |
| Temperature influence (from -20 to +70 °C)                          |         | $\pm 0.12$ | $\pm 0.28$ | % FS |
| Hysteresis and dead band  |         | $\pm 0.05$ | $\pm 0.2$  | % FS |
| Linearity   |         | $\pm 0.05$ | $\pm 0.2$  | % FS |

### Field bus communication version

Field bus communication is ensured by simply integrating an electronic printed circuit board.

A field bus system makes the wiring of control units for open/close applications straightforward and helps to reduce installation costs.

The AMTRONIC is compatible with the Profibus DP and AS-i field bus systems.



**AMTRONIC AS-i**

The AS-i (Actuator Sensor Interface) field bus is primarily used for sensors and actuators in open/close applications. The field bus is a master/slave bus system: The PLC as the master receives the open- and closed-loop control information from the AMTRONIC's slave components. This field bus is of a simple and robust design and can be easily installed. A two-wire cable is all that is required for power supply and transmission of digitalised information. 62 AS-i slave components can be connected to an AS-i field bus over a distance of 100 metres. Extensions are possible using repeaters. AMTRONIC has an AS-i interface with 2 inputs and 2 outputs. S-B.A.E and S-3.O profiles are available. The commands from the electro-pneumatic pilot valves are transmitted via the two outputs while the information from the limit switches (1 for Open and 1 for Closed) is provided via the two inputs. KSB recommends the use of the SMARTRONIC AS-i digital positioner for positioning applications using AS-i field bus.

**AMTRONIC Profibus DP**

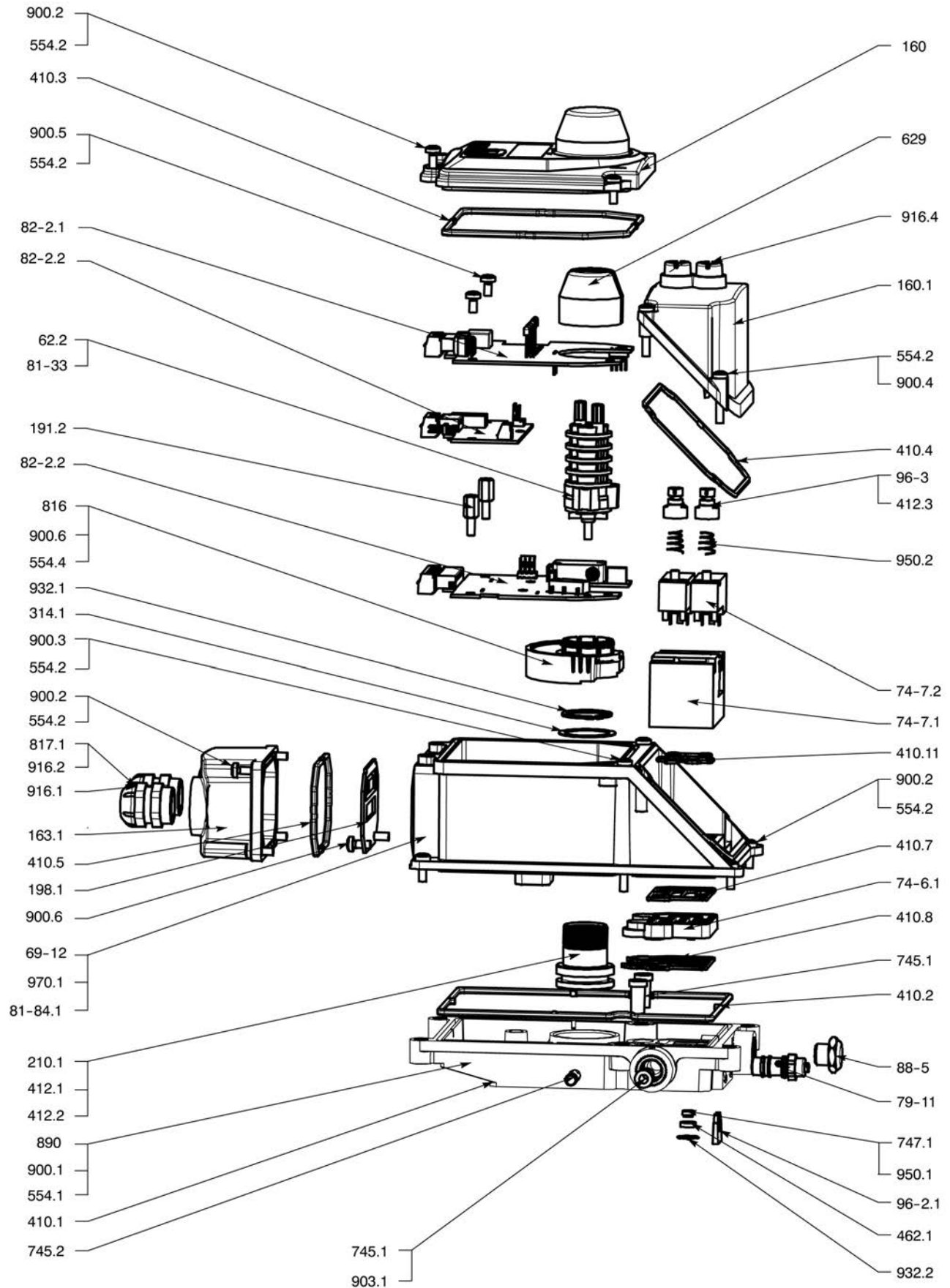
A slave interface is integrated in the AMTRONIC for Profibus DP (Decentralized Periphery) which allows the transmission of information to the PLC (master) via a twisted-pair, shielded cable. This interface ensures that up to 126 slave components can be connected over a distance of 1200 metres (up to 10 km when using repeaters with a speed of 1.5 Mbit/s). AMTRONIC Profibus DP processes information for two outputs for pilot valve control and two inputs for the limit switches' signals. The slave components are connected by a shielded cable (twisted pair) which transmits both the Profibus DP field bus information and the electrical voltage (24 V DC). KSB recommends the use of the SMARTRONIC PC Profibus DP intelligent positioner for positioning applications via Profibus DP.

Field buses: technical data

|                          | AS-i  | Profibus DP   |                           |                        |
|--------------------------|---|---|---------------------------|------------------------|
| Topology                 | Bus, tree or ring   | Bus, tree with repeaters                                      |                           |                        |
| Medium                   | 2-wire cable/AS-i voltage supply                                      | 4-wire, shielded cable: twisted pair and 24 V DC power supply |                           |                        |
| Network speed and length | Cycle time of 10 msec.<br>Length from 100 to 300 m with repeaters     | Speed (kbits/s)   | Length (without repeater) | Length (with repeater) |
| Profile/Version          | - S-B.A.E (for AS-i V2.11 and higher)<br>- S-3.0 (for all AS-i types) | 9.6   | 1200 m                    | 10 km                  |
|                          |   | 19.2  | 1200 m                    | 10 km                  |
|                          |   | 45.45   | 1200 m                    | 10 km                  |
|                          |   | 93.75   | 1200 m                    | 10 km                  |
|                          |   | 187.5   | 1000 m                    | 6 km                   |
|                          |   | 500   | 400 m                     | 1 km                   |
| Max. number of stations  | - S-B.A.E: 62 slaves<br>- S-3.0: 31 slaves                            | 32 per segment - max. 126                                     |                           |                        |
| Bus access               | Polling   | Polling master/slave: token ring between masters              |                           |                        |
| Addressing               | EEPROM  | Encoders  |                           |                        |
| Power consumption        | 3 W (max)   | 3 W (max)   |                           |                        |
| Power supply             | 26.5 to 31.5 V DC   | 24 V DC + 15%   |                           |                        |

Materials

Exploded view

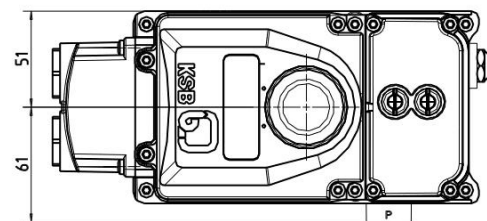
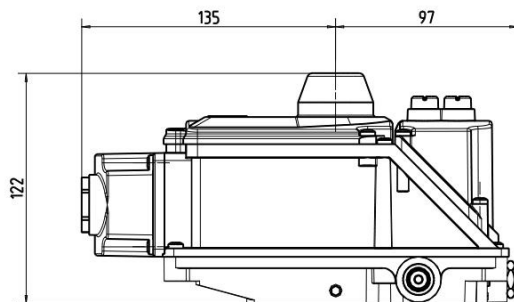


List of components

| Part No. | Description                       | Materials            |
|----------|-----------------------------------|----------------------|
| 69-12    | Housing                           | Polycarbonate SM60/0 |
| 160      | Cover                             | Polycarbonate SM60/0 |
| 160.1    | Cover (directional control valve) | Polycarbonate SM60/0 |
| 163.1    | Cover                             | Polycarbonate SM60/0 |
| 191.2    | Support                           | Nickel-plated brass  |
| 198.1    | Connection plate                  |                      |
| 210.1    | Actuating stem                    | Polycarbonate SM60/0 |
| 314.1    | Stop disc                         | Stainless steel 304L |
| 410.1    | Profile joint                     | NBR70                |
| 410.2    | Profile joint                     | NBR70                |
| 410.3    | Profile joint                     | NBR70                |
| 410.4    | Profile joint                     | NBR70                |
| 410.5    | Profile joint                     | NBR70                |
| 410.7    | Profile joint                     | NBR70                |
| 410.8    | Profile joint                     | NBR70                |
| 410.11   | Profile joint                     | NBR70                |
| 412.1    | O-ring                            | NBR70                |
| 412.2    | O-ring                            | NBR70                |
| 412.3    | O-ring                            | NBR70                |
| 462.1    | Spring washer                     |                      |
| 554.1    | Washer                            | Stainless steel      |
| 554.2    | Washer                            | Stainless steel      |
| 554.4    | Serrated washer                   | Steel                |
| 629      | Visual indicator assembly         |                      |
| 62-2     | Adjustable cams assembly          |                      |
| 629      | Visual indicator assembly         |                      |
| 745.1    | Filter                            |                      |
| 745.2    | Filter                            | Bronze               |

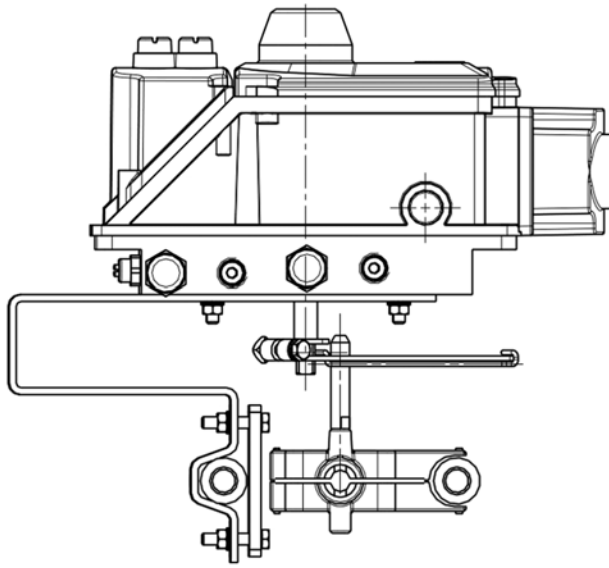
| Part No. | Description               | Materials            |
|----------|---------------------------|----------------------|
| 74-6.1   | Distribution plate        |                      |
| 74-7.1   | Directional control valve |                      |
| 74-7.2   | Pilot valve               |                      |
| 747.1    | Profile joint (valve)     |                      |
| 79-11    | Flow reducer              |                      |
| 816      | Angle sensor assembly     |                      |
| 817.1    | Cable gland               |                      |
| 81-33    | Detection plate           | Steel                |
| 81-84.1  | Wiring diagram            |                      |
| 82-2.1   | Printed circuit board     |                      |
| 82-2.2   | Printed circuit board     |                      |
| 82-2.3   | Actual-position feedback  |                      |
| 88-5     | Silencer                  | Bronze               |
| 890      | Base                      | Polycarbonate SM60/0 |
| 900.1    | Screw                     | A2-70                |
| 900.2    | Socket head cap screw     | A2-70                |
| 900.3    | Socket head cap screw     | A2-70                |
| 900.4    | Socket head cap screw     | A2-70                |
| 900.5    | Socket head cap screw     | A2-70                |
| 900.6    | Sheet metal screw         | A2-80                |
| 903.1    | Plug                      |                      |
| 916.1    | Screw plug                |                      |
| 916.2    | Protective cap            | Rubber               |
| 916.4    | Elastomer string          | NBR HT 70            |
| 932.1    | Circlip                   | Steel                |
| 932.2    | Reinforced circlip        | Steel                |
| 950.1    | Spring                    |                      |
| 96-2.1   | Locking plate             | Polycarbonate SM60/0 |
| 96-3     | Manual override           | Polycarbonate SM60/0 |
| 970.1    | Plate                     | Adhesive polyester   |

Dimensions

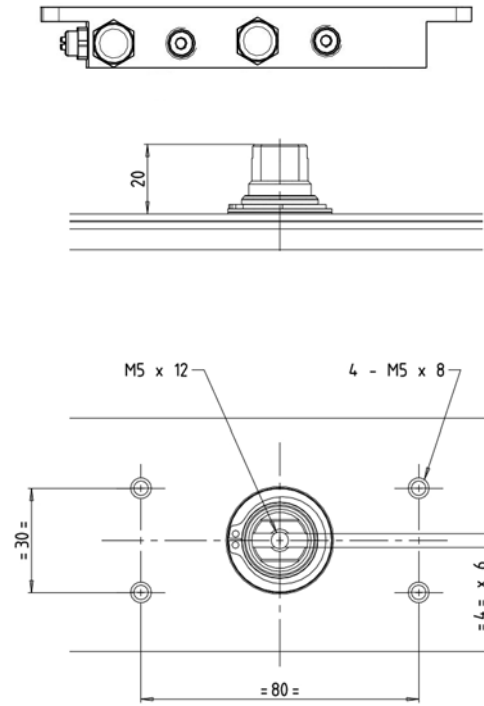


Variants

Mounting to linear actuator NAMUR



Base for actuators with VDI/VE 3845 interface, not applicable to ACTAIR and DYNACTAIR



**Purchase order data**
**Code AMTRONIC R1300**

| AMTRONIC  | R001300 | . | . | . | . | . | . | . | . | . | . | . | . | . | 0 | . | . | 6 | 0 | 0 |
|---|---------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| <b>Sensors</b>  |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Limit switch on printed circuit board                         |         | 1 | 0 | 0 | 0 |   |   |   |   |   |   |   |   |   |   |   | 0 |   |   |   |
| Proximity sensor on printed circuit board                     |         | 2 | 0 | 0 | 0 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Limit switch V3 for wires                                     |         | B | 1 | 1 |   |   |   |   |   |   |   |   |   |   |   |   | 0 |   |   |   |
| Limit switch V3 for cables                                    |         | B | 2 | 1 |   |   |   |   |   |   |   |   |   |   |   |   | 0 |   |   |   |
| Limit switch V3 for cable socket 4.8                          |         | B | 3 | 1 |   |   |   |   |   |   |   |   |   |   |   |   | 0 |   |   |   |
| Limit switch V3 for cable socket 6.3                          |         | B | 4 | 1 |   |   |   |   |   |   |   |   |   |   |   |   | 0 |   |   |   |
| Limit switch V3 welding clamp                                 |         | B | 6 | 1 |   |   |   |   |   |   |   |   |   |   |   |   | 0 |   |   |   |
| Proximity sensor V3 PNP for 3-wire cable                      |         | H | 2 | 1 |   |   |   |   |   |   |   |   |   |   |   |   | 0 |   |   |   |
| Proximity sensor V3 PNP for 3-wire cable                      |         | H | 2 | 2 |   |   |   |   |   |   |   |   |   |   |   |   | 0 |   |   |   |
| Proximity sensor V3 AC/DC for 2-wire cable                    |         | H | A | 3 |   |   |   |   |   |   |   |   |   |   |   |   | 0 |   |   |   |
| Proximity sensor V3 NAMUR for 2-wire cable                    |         | H | A | 4 |   |   |   |   |   |   |   |   |   |   |   |   | 0 |   |   |   |
| Proximity sensor V3 PNP for 3 cable sockets 4.8               |         | H | 3 | 1 |   |   |   |   |   |   |   |   |   |   |   |   | 0 |   |   |   |
| Proximity sensor V3 AC/DC for 2 cable sockets 4.8             |         | H | B | 3 |   |   |   |   |   |   |   |   |   |   |   |   | 0 |   |   |   |
| Proximity sensor V3 NAMUR for 2 cable sockets 4.8             |         | H | B | 4 |   |   |   |   |   |   |   |   |   |   |   |   | 0 |   |   |   |
| Proximity sensor V3 PNP for 3 cable sockets 6.3               |         | H | 4 | 1 |   |   |   |   |   |   |   |   |   |   |   |   | 0 |   |   |   |
| Proximity sensor 40x26x12 PNP for 3-wire cable                |         | J | 2 | 1 |   |   |   | 0 |   |   |   |   |   |   |   |   | 0 |   |   |   |
| Proximity sensor 40x26x12 AC/DC for 2-wire cable              |         | J | A | 3 |   |   |   | 0 |   |   |   |   |   |   |   |   | 0 |   |   |   |
| Proximity sensor dia. 6.5 PNP for 3-wire cable                |         | K | 2 | 1 |   |   |   | 0 |   |   |   |   |   |   |   |   | 0 |   |   |   |
| Proximity sensor M8 PNP for 3-wire cable                      |         | L | 2 | 1 |   |   |   | 0 |   |   |   |   |   |   |   |   | 0 |   |   |   |
| Proximity sensor M12 PNP for 3-wire cable                     |         | M | 2 | 1 |   |   |   | 0 |   |   |   |   |   |   |   |   | 0 |   |   |   |
| Proximity sensor M12 AC/DC for 2-wire cable                   |         | M | A | 3 |   |   |   | 0 |   |   |   |   |   |   |   |   | 0 |   |   |   |
| Proximity sensor M12 NAMUR for 2-wire cable                   |         | M | A | 4 |   |   |   | 0 |   |   |   |   |   |   |   |   | 0 |   |   |   |
| Proximity sensor M14 NAMUR for 2-wire cable                   |         | N | A | 4 |   |   |   | 0 |   |   |   |   |   |   |   |   | 0 |   |   |   |
| Proximity sensor M18 PNP for 3-wire cable                     |         | P | 2 | 1 |   |   |   | 0 |   |   |   |   |   |   |   |   | 0 |   |   |   |
| Proximity sensor M18 NPN for 3-wire cable                     |         | P | 2 | 2 |   |   |   | 0 |   |   |   |   |   |   |   |   | 0 |   |   |   |
| Proximity sensor M18 AC/DC for 2-wire cable                   |         | P | A | 3 |   |   |   | 0 |   |   |   |   |   |   |   |   | 0 |   |   |   |
| Proximity sensor M18 NAMUR for 2-wire cable                   |         | P | A | 4 |   |   |   | 0 |   |   |   |   |   |   |   |   | 0 |   |   |   |
| <b>Position signalling</b>                                    |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 1/Open and 1/Closed   |         |   |   |   |   |   |   | 1 |   |   |   |   |   |   |   |   |   |   |   |   |
| 1/Open  |         |   |   |   |   |   |   | 3 |   |   |   |   |   |   |   |   |   |   |   |   |
| 1/Closed  |         |   |   |   |   |   |   | 4 |   |   |   |   |   |   |   |   |   |   |   |   |
| 1/Open and 1/Closed and 1/Intermediate                        |         |   | 0 | 0 | 0 | 6 | 0 |   |   |   |   |   |   |   |   |   | 0 | 0 |   |   |
| <b>Actual-position feedback</b>                               |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| None  |         |   |   |   |   |   |   | 0 |   |   |   |   |   |   |   |   | . | . |   |   |
| With angle sensor 5 kOhm                                      |         |   |   |   |   |   |   | 1 |   |   |   |   |   |   |   |   | 0 | 0 |   |   |
| Actual-position feedback via passive 4-20 mA signal (2 wires) |         |   |   |   |   |   |   | 4 |   |   |   |   |   |   |   |   | 0 | 0 |   |   |
| Actual-position feedback via passive 20-4 mA signal (2 wires) |         |   |   |   |   |   |   | 5 |   |   |   |   |   |   |   |   | 0 | 0 |   |   |
| <b>Electrical connection</b>                                  |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 2 plugs, plastic, M20 IP67                                    |         |   |   |   |   |   |   | 0 |   |   |   |   |   |   |   |   |   |   |   |   |
| 2 cable glands, plastic, M20 IP67 (diameter: 6 to 12)         |         |   |   |   |   |   |   | 1 |   |   |   |   |   |   |   |   |   |   |   |   |
| 2 cable glands, metal, M20 IP67 (diameter: 6 to 12)           |         |   |   |   |   |   |   | 2 |   |   |   |   |   |   |   |   |   |   |   |   |

| AMTRONIC  | R001300 | . | . | . | . | . | . | . | . | . | . | . | 0 | . | . | 6 | 0 | 0 |
|---|---------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| <b>Directional control valve</b>                                    |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 4/2 monostable - Open/Closed  |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 4/2 bistable - Open/Closed  |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 4/3 closed in centre position - Position (POS)                      |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| <b>Voltage, directional control valve</b>                           |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 230 V AC 50/60 Hz   |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 115 V AC 50/60 Hz   |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 48 V AC 50/60 Hz  |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 24 V AC 50/60 Hz  |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 24 V DC   |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| <b>Actuator</b>   |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| ACTAIR 3 to 200, stop position: Closed                              |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| ACTAIR 3 to 200, stop position: Open                                |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| ACTAIR 400 to 1600  |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| DYNACTAIR 1.5 to 25, Fail Close in the event of air supply failure  |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| DYNACTAIR 1.5 to 25, Fail Open in the event of air supply failure   |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| DYNACTAIR 50 to 100, Fail Close in the event of air supply failure  |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| DYNACTAIR 50 to 100, Fail Open in the event of air supply failure   |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| DYNACTAIR 200 to 800, Fail Close in the event of air supply failure |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| DYNACTAIR 200 to 800, Fail Open in the event of air supply failure  |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Pneumatic quarter-turn actuator, double-acting                      |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Pneumatic quarter-turn actuator, single-acting                      |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Pneumatic linear actuator, double-acting                            |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Pneumatic linear actuator, single-acting                            |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| <b>Fail-safe position</b>   |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Fail Close in the event of power supply failure                     |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Fail Open in the event of power supply failure                      |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Fail-in-last in the event of power supply failure                   |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Undefined position in the event of power supply failure             |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| <b>Field bus</b>  |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| None  |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Profibus DP   |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| AS-i profile S-B.A.E (62 slaves)                                    |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| AS-i S-3.0 (31 slaves)  |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| <b>Heating resistor</b>   |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| None  |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| With heating resistor 12 to 24 V DC                                 |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| With heating resistor 100 to 240 V AC                               |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| <b>Position indicator</b>   |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 3D sight glass  |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| <b>Configuration</b>  |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| None  |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| <b>Diagnosis</b>  |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| None  |         |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |





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