
<table>
<thead>
<tr>
<th>Type</th>
<th>Force</th>
<th>Supply</th>
<th>Motor running time</th>
<th>Control mode</th>
<th>Feedback</th>
<th>Wiring diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>ExRun - 5.10</td>
<td>0.5 kN / 1.0 kN</td>
<td>24..240 VAC/DC</td>
<td>2 / 3 / 6 / 9 / 12 s/mm</td>
<td>On-Off, 3-Pos</td>
<td>-</td>
<td>SB 1.0</td>
</tr>
<tr>
<td>ExRun - 25.50</td>
<td>2.5 kN / 5.0 kN</td>
<td>24..240 VAC/DC</td>
<td>2 / 3 / 6 / 9 / 12 s/mm</td>
<td>On-Off, 3-Pos</td>
<td>-</td>
<td>SB 1.0</td>
</tr>
<tr>
<td>ExRun - 75.100</td>
<td>7.5 kN / 10.0 kN</td>
<td>24..240 VAC/DC</td>
<td>4 / 6 / 9 / 12 / 15 s/mm</td>
<td>On-Off, 3-Pos</td>
<td>-</td>
<td>SB 1.0</td>
</tr>
<tr>
<td>ExRun - ... - X</td>
<td>Type as above but without possibility to assemble external aux. switches (ExSwitch)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>SB 1.0</td>
</tr>
<tr>
<td>ExRun - ... - P</td>
<td>Type as above but with additional feedback potentiometer</td>
<td>-</td>
<td>-</td>
<td>On-Off, 3-Pos</td>
<td>Potentiometer 1000 Ohm</td>
<td>SB 4.0</td>
</tr>
<tr>
<td>ExRun - ... - U</td>
<td>Type as above but with additional feedback 0.10 V / 4.20 mA</td>
<td>-</td>
<td>-</td>
<td>On-Off, 3-Pos</td>
<td>0..10 V / 4..20 mA</td>
<td>SB 5.0</td>
</tr>
<tr>
<td>ExRun - ... - S</td>
<td>Type as above but with additional 2 integrated potential free aux. switches (fix set points), max.24 V/1 A, 24 V/0,25 A</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>SB 3.5</td>
</tr>
<tr>
<td>ExRun - ... - CTS</td>
<td>Type as above but with amercoat painting, outside parts in stainless steel, cable glands nickel-plated</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Product views/Application**

- **Side view**
- **Back view with terminal box**
- **Front view**
- **Actuator mounted on valve**
- **Compact body**

**Description size S**

The new ExRun valve actuators are a revolution for safety, control valve and other motorized applications for HVAC systems, in chemical, pharmaceutical, industrial and Offshore-Onshore plants, for use in Ex-areas zone 1, 2 (gas) and zone 21, 22 (dust).

Highest protection class (ATEX) and IP66 protection, small dimensions, only 7 kg weight, universal functions and technical data, an integrated heater guarantee safe operation even under difficult environmental conditions. High quality brushless motors guarantee long life.

All actuators are programmable and adjustable on site. Special tools or equipment are not required. 5 motor running times and 2 forces, according to the actuator type, are selectable or adjustable on site. The integrated universal power supply is self adaptable to input voltages in the range of 24 to 240 VAC/DC.

The actuators are 100% overload protected and self locking.

The modular concept offers the possibility to mount adjustable end switches for signalization (except version ExRun -... - X).

ExRun -... - P actuators are additionally equipped with a feedback potentiometer. ExRun -... - U is a 3-pos. actuator but additionally equipped with an analogue output 0..10 V / 4..20 mA.

The ExRun -... - S has integrated aux. switches (fix positions).

**Highlights**

- For all type of gas, mixtures, vapours and dust for use in zone 1, 2, 21 and 22
- Universal supply unit from 24 to 240 VAC/DC
- Selectable forces (0,5 - 1,0 kN) (2,5 - 5 kN) (7,5 - 10 kN), acc. to type
- Selectable motor running times (2-3-6-9-12 s/mm), (4-6-9-12-15 s/mm)
- Control : On-Off, 3-Pos, 3-Pos with feedback potentiometer, 3-Pos-U with 0-10V / 4-20mA feedback
- 0,5 - 1,0 - 2,5 - 5,0 - 7,5 - 10 kN actuator in only one housing (size S)
- 100 % overload protected, self locking
- Mechanical stroke limitation, 5…60 mm adjustable
- Adjustable feedback gear unit for strokes 10 / 20 / 30 / 60 mm
- integrated Ex-e junction box
- Compact design and small dimension (L × W × H = 298 × 208 × 115 mm)
- Robust aluminium housing (optional marine painting “Option CT”)
- IP66 protection
- Manual override included
- Only 7 kg weight
- Integral safety temperature sensor
- Status indication by LED

D.E.R-01.04-S-en-3P
3-Apr-2013

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www.schischek.com

1/4
## Technical data

<table>
<thead>
<tr>
<th></th>
<th>ExRun-5.10 (basic type)</th>
<th>ExRun-25.50 (basic type)</th>
<th>ExRun-75.100 (basic type)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Force (nominal)</td>
<td>0.5 / 1.0 kN selectable</td>
<td>2.5 / 5.0 kN selectable</td>
<td>7.5 / 10 kN selectable</td>
</tr>
<tr>
<td>Force (blockade)</td>
<td>0.8 / 1.5 kN</td>
<td>4.0 / 7.5 kN</td>
<td>12 / 16 kN</td>
</tr>
<tr>
<td>Dimension of external force</td>
<td>0.4 / 0.8 kN</td>
<td>2.0 / 4.0 kN</td>
<td>6.0 / 8.0 kN</td>
</tr>
<tr>
<td>Supply voltage/Frequency</td>
<td>24...240 VAC/DC ± 10 %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power consumption</td>
<td>max. starting currents see table &quot;EL&quot; (in acc. with voltage, I start &gt;&gt; I rated), 2 A inrush current!</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heater consumption</td>
<td>approx. 16 W, (motor is not running in this moment)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stroke</td>
<td>5...60 mm adjustable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor running time</td>
<td>2 / 3 / 6 / 9 / 12 s / m selectable</td>
<td>2 / 3 / 6 / 9 / 12 s / m selectable</td>
<td>4 / 6 / 9 / 12 / 15 s / m selectable</td>
</tr>
<tr>
<td>Motor</td>
<td>Brushless DC Motor</td>
<td>Brushless DC Motor</td>
<td>Brushless DC Motor</td>
</tr>
<tr>
<td>Control mode</td>
<td>On-Off and 3 Pos.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical connection</td>
<td>Junction box Ex-e incl. terminals 0,14...4 mm²</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cable gland</td>
<td>M20 x 1,5 mm I2GD Ex-e approved, cable diameter Ø 6...13 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manual override</td>
<td>Change from auto to hand mode with sidewise (red) switch and turn with the Allen key top side, max. 5 Nm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housing material</td>
<td>Aluminium die cast housing, painted (optional marine coating type...-CTS)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td>L x W x H = 298 x 208 x 115 mm, for diagram see extra information „ME-R“</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>ca. 7 kg Standard version without adaption</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>-20...+ 40°C at T6 / -20...+ 50°C at T5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient temperature -30°C</td>
<td>-30...+ 40°C at T6 / -30...+ 50°C at T5, reduced force approx. 80% of rated value e.g. 5 kN = 3 kN (max.) avoid icing!</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-40...+ 70°C,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Humidity</td>
<td>0...90 %RH non condensing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operation mode</td>
<td>S3/50 % ED = duty cycle (max. 300 operating cycles / h)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accuracy mechanically</td>
<td>&lt; 1 mm stroke (hysteresis)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accuracy electrically</td>
<td>approx. 200 steps acc. to adjusted stroke</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parameter at delivery</td>
<td>500 N, 6 s / m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delivery</td>
<td>Actuator with integrated Ex-e junction box, Allen key for manual override</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wiring diagrams</td>
<td>SB 1.0</td>
<td>SB 1.0</td>
<td>SB 1.0</td>
</tr>
</tbody>
</table>

## Deviate Data

### ExRun-5.10-X
- Actuator ExRun-....X as basic type, but without possibility to assemble external aux. switches
- Wiring diagrams (SB) SB 1.0

### ExRun-5.10-S
- Actuator ExRun-....S as basic type, but incl. two fix adjusted aux. switch switch points at 0 - 10 - 20 - 30 - 60 mm acc. to gear belt setting
- Max values aux. switches 24 V / 1 A 240 VAC / 0,25 A (min. 10 mA)
- Wiring diagrams (SB) SB 3.5 aux. switch setting acc. to stroke, note page 4

### ExRun-5.10-P
- Actuator ExRun-....P as basic type, but incl. feedback potentiometer by gear belt, adjustable for max. resolution at 10 - 20 - 30 - 60 mm
- Potentiometer 1 kOhm 1 kOhm 1 kOhm
- Wiring diagrams (SB) SB 4.0 feedback signal potentiometer acc. to stroke setting, note page 4

### ExRun-5.10-U
- Actuator ExRun-....U as basic type, but incl. feedback signal U by gear belt, adjustable for max. resolution at 10 - 20 - 30 - 60 mm
- Feedback signal U 0...10 VDC, 4...20 mA acc. on wiring selectable on site, Uu 0...10 VDC @ 1.000...∞ Ω, Ui 4...20 mA @ 0...800 Ω
- Wiring diagrams (SB) SB 5.0 feedback signal V / mA acc. to stroke setting, note page 4

## Approvals

- PTB-tested PTB 09 ATEX 1016X
- In acc. with ATEX RL 94/9/EC (ATEX)
- Approval for gas II2[1/2]G Ex de [ia] T C6/T5 Zone 1, 2
- Approval for dust II2[1/2]D Ex d[ia] A21 IP66 T80°C Zone 21, 22
- CE-Mark CE Nr. 0158
- EMC RL 2004/108/EC
- Low voltage RL 2006/95/EC
- Protection class Protection class I (grounded)
- IP-Protection IP 66, in acc. with EN 60529

## Accessories or special solutions

- ExSwitch-R-L external auxiliary switch with 2 adjustable contacts, mounting on spindle of ExRun-....
- ExSwitch-R external auxiliary switch with 2 adjustable contacts, mounting on top of the ExRun-.... housing
- ExBox-SW Ex-e junction box for aux. switches ExSwitch zone 1, 2, 21, 22
- MKK-S mounting bracket in VA for terminal boxes type ExBox-... direct on actuator
- GMB-1 rubber bellow
- Adoptions for fittings and manufacturer on request

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**Electrical connection**

All actuators are equipped with a universal supply unit working at a voltage from 24 to 240 V AC/DC. The supply unit is self adjustable to the connected voltage! Device must be fuse protected max. 5 A T. Note current consumption acc. to running time and applied voltage. Do not open the junction box when circuit alive. When controlled by relays equipped these with protective components eg RC elements.

**Parameter, Adjustment – Failure indication**

Switch – Push button – Lamp for adjustment, behind the blanking plug

- 10-position switch (S)
- Push button (T)
- 3-colour LED

**Parameter selection**

Example: SB 3.5

<table>
<thead>
<tr>
<th>Type</th>
<th>Forces</th>
<th>Forces</th>
</tr>
</thead>
<tbody>
<tr>
<td>ExRun-25.50</td>
<td>500 N</td>
<td>1,000 N</td>
</tr>
<tr>
<td>ExRun-75.10</td>
<td>2,500 N</td>
<td>5,000 N</td>
</tr>
<tr>
<td>ExRun-75.10</td>
<td>7,500 N</td>
<td>10,000 N</td>
</tr>
</tbody>
</table>

Running times Pos. of switch Running times Pos. of switch

- 2 s/mm | 00 | 00
- 3 s/mm | 01 | 01
- 4 s/mm | 02 | 02
- 6 s/mm | 03 | 03
- 9 s/mm | 04 | 04
- 12 s/mm | 05 | 05

Result:

- switch position (S) 07

Function, adjustment and parameter

A) Self adjustment:

Push button T for min. 3 seconds. The actuator will drive into both end positions to be adjusted. LED indicates green blinking. The adjustment drive could be applied in any switch position (S).

B) Selection of running time and force:

Put 10 position switch (S) into the correct/selected position in acc. to above table. The selected parameter will work at next operation of the actuator. Adjustment can be done even without supply voltage. If supply voltage is available turn switch off only if actuator is not running.

C) Additional information for 3-pos operation:

- a closed, b open = rod goes IN
- b closed, a open = rod goes OUT
- a and b closed = Motor doesn't work, No function
- a and b opened = Motor doesn't work, No function

D) Force in blocking position:

- The force in end position could be much more than the nominal force. Generally the valve is to check together with actuator and construed accordingly.

**Wiring diagram**

**ExRun-...-X**

- Function of switch a and b:
  - a closed, rod goes in
  - b closed, rod goes out

**ExRun-...-P**

- Function of switch a and b:
  - a closed, rod goes in
  - b closed, rod goes out

**ExRun-...-S**

- Function of switch a and b:
  - a closed, rod goes in
  - b closed, rod goes out

**ExRun-...-U**

- Function of switch a and b:
  - a closed, rod goes in
  - b closed, rod goes out

**Potentiometer**

Note gear belt setting 0, 10, 20, 30, 60 mm (see capter gear belt setting)

**Wiring feedback signal V / mA**

Note gear belt setting 0 - 10 - 20 - 30 - 60 mm (see capter gear belt setting)

**Wiring diagram**

**ExRun-...-X**

- Function of switch a and b:
  - a closed, rod goes in
  - b closed, rod goes out

**ExRun-...-P**

- Function of switch a and b:
  - a closed, rod goes in
  - b closed, rod goes out

**ExRun-...-S**

- Function of switch a and b:
  - a closed, rod goes in
  - b closed, rod goes out

**ExRun-...-U**

- Function of switch a and b:
  - a closed, rod goes in
  - b closed, rod goes out

**Junction Box**

- Switch of the power
- Open cover junction box
- Put cable through cable gland into junction box
- Strip wires approx. 7 mm
- Connect wires to wiring diagram and type
- Connect power connector earth PE
- Fix wires, screw terminals
- Close cable entries tighten (IP66)
- Close cover junction box regard gasket

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D.ER-01.04-S-en-3P
3-Apr-2013
Mounting instructions and important information for operation and installation

**Manual Override**

1. Actuator must be in stop position
2. Turn "red" switch from motor to hand mode
3. Turn with allen key to needed stroke (top side)
   - CW = rod OUT
   - CCW = rod IN
4. After finish turn back to motor mode

**Safety notes Ex**

<table>
<thead>
<tr>
<th>Hazardous locations</th>
<th>Safe area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zone 1, 2, 21, 22</td>
<td></td>
</tr>
</tbody>
</table>

- Do not open the cover when circuit alive
- The cable must be installed in a fixed position and protected against mechanical damage
- Connect potential earth
- Avoid temperature transfer from valve to actuator (note max. ambient temperature)
- Ambient temperature -20…+40 °C at T6 / -20...+ 50°C at T5
- Close all openings with min IP66
- Regard all regional standards, rules and regulations.
- Flameproof enclosure is protected against mechanical damages acc. to EN 60079-ff.
- For outdoor installation a protective housing against rain, snow and sun should be applied to the actuator, as well as a constant supply at terminal 1 and 2 for the integral heater.
- Use for wiring the integrated Ex-e junction box
- Actuators are maintenance free

**Extra information „EL-R“ (see additional data sheet)**

- extra technical information, versions of circuit diagrams and failure indication

**Extra information „ME-R“ (see additional data sheet)**

- extra technical information, dimensions, installation instruction and illustration

---

**1. Demounting cover for stroke adjustment / limitation**

Switch off power.

5 × open screw before remove cover.

Note cover gasket must be fit in the groove after remounting.

**2. Adjust stroke**

Stroke can be adjusted by thread nut from min 5 mm to 60 mm.

**3. Open cover bracket feedback gear**

If open cover bracket gear belt is removed from tensions after this choose the right setting acc. to stroke by hand – not use any tools.

Due to repeatedly move of the red bar the setting of the gear belt gear can be changed. The position is corrected by closing the cover and starting a re-adjustment drive.

**4. Gear belt adjustment for internal switches resp. potentiometer**

If open cover bracket gear belt is removed from tensions after this choose the right setting acc. to gear belt setting adjust the switch points lower / higher limit.

**Internal switches**

<table>
<thead>
<tr>
<th>Gear belt setting</th>
<th>Switch points at</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 mm</td>
<td>0-1 mm</td>
</tr>
<tr>
<td>20 mm</td>
<td>0-1 mm</td>
</tr>
<tr>
<td>30 mm</td>
<td>0-1 mm</td>
</tr>
<tr>
<td>60 mm</td>
<td>0-1 mm</td>
</tr>
</tbody>
</table>

Note: there is no possibility to adjust interim values only with ExSwitch (accessory).

**Potentiometer**

<table>
<thead>
<tr>
<th>Stroke</th>
<th>0-10 V / 4…20 mA</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 mm</td>
<td>10-11 mm</td>
</tr>
<tr>
<td>20 mm</td>
<td>19-20 mm</td>
</tr>
<tr>
<td>30 mm</td>
<td>28-30 mm</td>
</tr>
<tr>
<td>60 mm</td>
<td>55-60 mm</td>
</tr>
</tbody>
</table>

**5. Close cover bracket for feedback gear setting**

Note right position of gear belt.

Close bracket thereby the gear belt is automatically tensioned.

**6. Remounting cover**

5 × fix screws tighten.

Note cover gasket must be fit in the groove after remounting.

Switch on power.