

Documentation

about
4 - 250 V AC/DC mechanical limit switch boxes
 with
Crouzet limit switches
 for
pneumatic rotary- and linear actuators

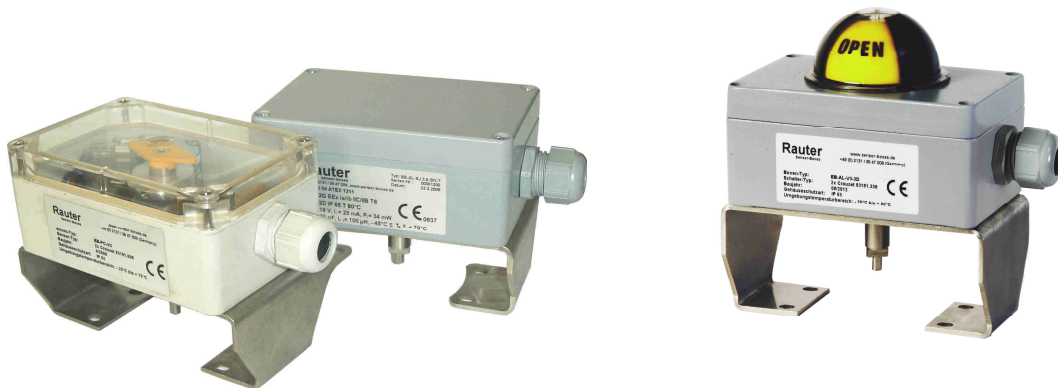


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1. Objectives and practical use

The positions of industrial valves represent an important piece of information for the course of action of a production. These valves are actuated with rotary and linear actuators which the end position of the valve like open/closed is reported back to a control system. This is done via a mounted a limit switch box which is placed on/at the actuator, see images 1-5.

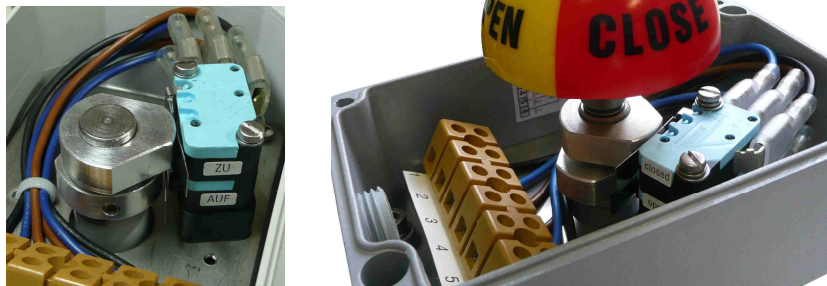
The application of the limit switch boxes are in not explosion-threatened areas.



images 1+2: limit switch boxes in polyamide and aluminium housing, left: with transparent top, right: with 3D-indicator, size: 120x80x55mm / 125x80x57, mounted with stainless steel brackets for rotary actuators acc. to VDI/VDE 3845.



image 3: limit switch box, aluminium housing for linear actuators with mounting set acc. to NAMUR IEC 534, size: 125x80x57mm



images 4+5: 2x mechanical Crouzet limit switches with adjustable switching contacts

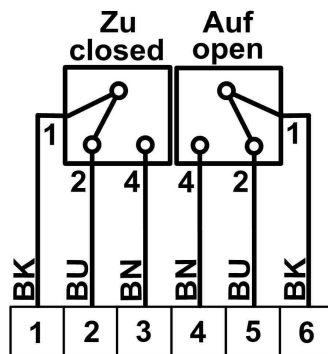


image 6: wiring diagram

2. Technical specifications

- aluminium and polyamide housing, 125x80x57mm / 120x80x55mm, F05-slot, with 3D-indicator, transparent and closed top
- 2x mechanical Crouzet switches type 83161.338, changer, with silver coated contacts, nominal ratings 0,1 A to 20 A / 250 V AC, more details see page 6
- Option: 2x mechn. Crouzet-Endschalter with gold coated contacts, type.: 83161.806, changer, $U_{max} = 30 \text{ V AC}$, $I_{max} = 5 \text{ A AC}$, $U_{max} = 4 \text{ V DC}$, $I_{min} = 1 \text{ mA DC}$, more details see on page 6
- Option: 3D-indicator with OPEN / CLOSE in the aluminium top
- 6-pole clamp, wiring diagramm
- plastic cable gland M20x1,5mm, Ø13-8mm or M16x1,5mm, Ø10-4,5mm
- 2x adjustable aluminium switching contacts, 0° - 360°
- 1.4305-steam with sealing, Ø12mm, 1.4301-ground plate 1mm
- stainless steel brackets for actuators acc. to VDI/VDE 3845, steam high 20,30 or 50mm, hole spacing 80x30mm or 130x30mm
- stainless steel and aluminium mounting set for linear actuators acc. to NAMUR IEC 534
- housing protection class: IP 65
- temperature range limit switch box: $- 20^{\circ}\text{C} < T_a < + 70^{\circ}\text{C}$

3. Connection the limit switches and adjusting the switching contacts

During the cable glands M20x1,5mm, witch are tightened with 4 Nm, the limit switches will be connected. Acc. image 6 the limit switches will be connected. The wiring diagram is always fixed in the housing.

Both aluminium switching contacts are adjustable. With the hexagon socket screw M4, SW 2mm in the switching contacts tighten.

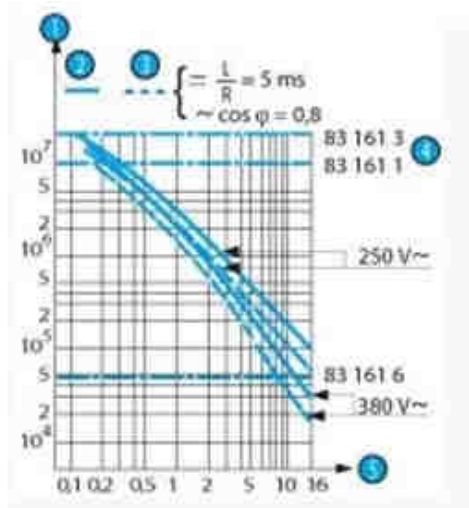
4. Components and parts list

Table: Components and parts list of limit switch boxes with Crouzet limit switches

Term/Identifier	Article-No.	Material	Comments
Polyamide empty housing: Consisting of a lower part with F05-slot, shaft bushing Ø 12mm, tap hole M20x1,5 mm, transparent cover, closed cover and cover with window as well as 4 pieces	PA-L	PC/PA	120x80x55 mm, white/black, Z.-No.: 0018 and 0018a
Aluminium empty housing: Consisting of a lower part with F05-slot, shaft bushing Ø 12mm, tap hole M20x1,5 mm, closed cover and cover with window as well as 4 pieces of cover screws	AL-L	AL-Si 12	125x80x55 mm, grey or black, Z.-No.: 0018
Cable glands, white, grey or black	KL	PA	M20x1,5 mm, Ø13-8mm, M16x1,5mm, Ø10-4,5mm
6-pole clamps, 1-6	V	Gemin (KrG)	2,5 mm ² , brown
Ground plate for limit switches	PL	A2	93x69x1 mm, Z.-No.: 0015
Screws for ground plate, 4x	B-Sch	A2	M3x4 mm for PC box and M4x5 mm for AL box
Shaft for housing without 2D-indicator	WO	A2	Ø12x77 mm, Z.-No.: 0016
Shaft for housing with 2D-indicator	WS	A2	Ø12x77 mm, Z.-No.: 0016a
O-ring for shaft	O	NBR 70	9x1,5 mm
2D-indicator, yellow	Si	PVC	40x18x3 mm, Z.-No.: 0019
Shaft for housing with 3D-indicator	WS-3D	A2	Ø12 mm, Z.-No.: 0016b
3D-indicator, yellow / red / black	3D	PVC	
Washer for shaft, 2x	U	POM	Ø18/Ø12x1,2 mm
Stop washer for shaft, 2x	S	A2	DIN 6799-9
2x adjustable switching cams for shaft	Sch	AL	Z.-No.: 0017 or 0017a
Fastening parts/screws 2x	B	PA/V2A	17x29x9,5 mm, 2xM3x32 mm
Cable binder, 2x	K	Neylon	99x2,5 mm
6x cable or 4x cable	Ka	Cu, PVC	H05V-K1 x 0,75 mm ²
Wiring diagram and switch label	Sch-S	Plastic	30x30 mm u. 2x 8x4 mm
Data plate	Type	3M7872EC	70x32 mm
Mechanical Crouzet limit switches with silver coated contacts, changer	83161.338	Housing, PA	16x28x10 mm
Mechanical Crouzet limit switch with gold coated contacts, changer	83161.806	Housing, PA	16x28x10 mm
Brackets	MB	A2	70x130x45/55 mm, for actuators acc. to VDI/VDE 3845
Mounting set	AB	A2, AL and PA	mounting set for actuators acc. to NAMUR IEC 534

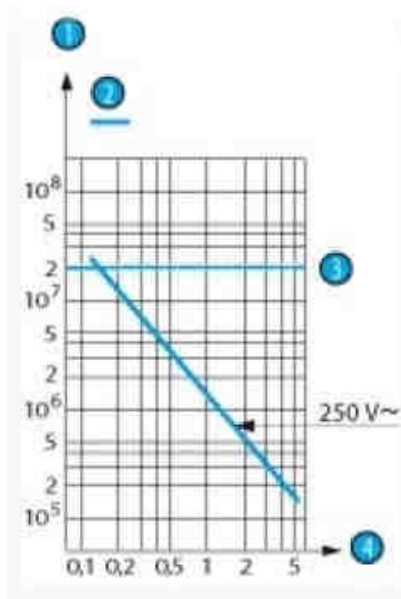
5. Operating curves limit switches

Operating curve switch type 83161.338



Legend: 1 = Number of cycles
2 = Resistive circuit
3 = Inductive circuit
4 = Mechanical life limit
5 = Current in Amps

Operating curve switch type 83161.806



Legend: 1 = Number of cycles
2 = Resistive circuit
3 = Mechanical life limit
4 = Current in Amps