OPTIMA Compact Failsafe & Feedback Actuators

DN10-DN32

Application

Proportional 0-10V modulating control of Frese OPTIMA Compact valves in heating, ventilating and air conditioning systems.

The actuator can be mounted on the valve by hand and without the need of a specific tool.

Due to the compact design of the actuator, it is particularly suitable for installations where space is limited.

0-10V feedback signal for indication of stem position of the PICV.

Actuator Type MO

Actuator Type FRS

Features - Feedback Actuators type MO

- Feedback signal 0-10V
- Self calibrating stroke
- Simple snap-on installation
- LC-Display for status indication (position, control voltage and error-code)
- Manual operation for maintenance and installation
- EQ% characterization
- The actuator is short-circuit-proof and protected against polarity reversal
- Plug-in cable for supply voltage and control signal
- Small outer dimensions
- Removable halogen free cable
- IP 54 protection
- Noise level < 30 db(A)

Features - Feedback Actuators type FRS

- Feedback signal 0-10V
- Self calibrating stroke
- 0..10 V DC control signal. Other control signals can be selected by use of dip switches
- Direct assembly with union nut to the neck of the valve. No tools required
- Bi-color LED for status and diagnostic
- Linear or EQ% characterization available on the same actuator
- The actuator is short-circuit-proof and protected against polarity reversal
- Plug-in cable for supply voltage and control signal
- Small outer dimensions
- Removable halogen free cable
- Auto zero detection
- IP 54 protection
- Noise level < 30 db(A)
- Voltage and Current analog inputs

Features - Failsafe Actuators Type MO

- Same features as feedback actuators Type MO with additional:
  - Failsafe system (Rechargeable battery)
  - Failsafe function to open or close the valve upon power failure
  - Failsafe running time is 15 sec/mm

Approvals

Conforms to:

- 2014/30/EU Electromagnetic Compatibility (EMC) Directive.
- 2014/35/EU Low Voltage Directive (LVD)

CE

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Feedback Actuator Type MO

Technical data

Supply voltage: 24V AC/DC
Protection class: IP 54 acc. EN60529
Frequency: 50/60 Hz AC or DC
Control signal: 0-10V DC
Input impedance: >100 k Ohm (DC 0-10V)
Force: >125N (200 N on request)
Stroke: Auto calibration
Ambient conditions: Temperature 0°C - 50°C
Humidity 5-95% r.F.
Audible noise rating: < 30 db(A)
Cable length: 1.0 m, Halogen free
Weight: 0.15 kg

Operation Data

Item no.	Valve Dim.	Control signal	Running time (50 Hz)	Supply voltage	Power Consumtion	Feedback signal
53-1979	DN10-DN32	DC 0-10V	15 s/mm	24V AC -10% /+20% 24V DC +/- 20%	1.4W (2.6 VA)	0-10V

Failsafe Actuator Type MO

Technical data

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Frequency: 50/60 Hz or DC
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Humidity 5-95% r.F.
Audible noise rating: < 30 db(A)
Cable length: 1.0 m, Halogen free
Weight: 0.15 kg

Operation Data

Item no.	Valve Dim.	Control signal Function	Running time (50 Hz)	Supply voltage	Power Consumtion	Feedback signal
53-1980	DN10-DN32	DC 0-10V Fail Safe Open	15 s/mm	24V AC -10% /+20% 24V DC +/- 20%	1.4W (2.6 VA) 2.6W / 3.8 VA (Temporary)	0-10V
53-1981	DN10-DN32	DC 0-10V Fail Safe Close	15 s/mm	24V AC -10% /+20% 24V DC +/- 20%	1.4W (2.6 VA) 2.6W / 3.8 VA (Temporary)	0-10V

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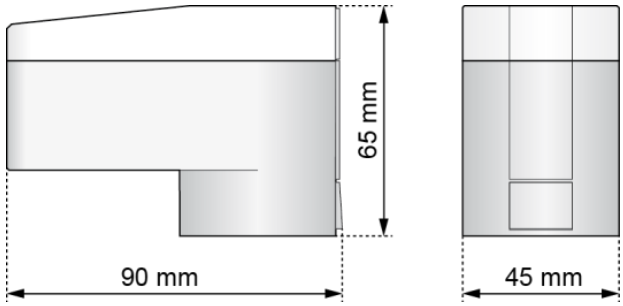
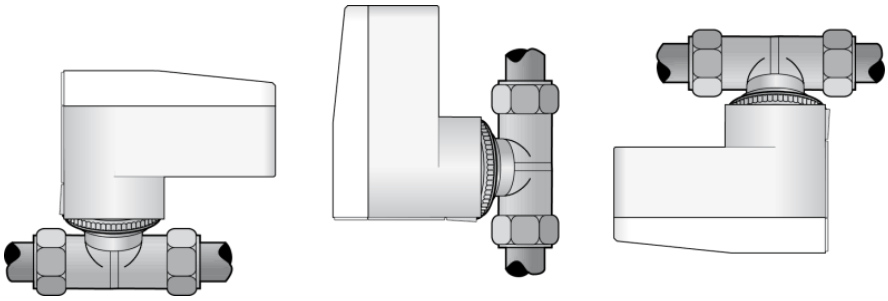
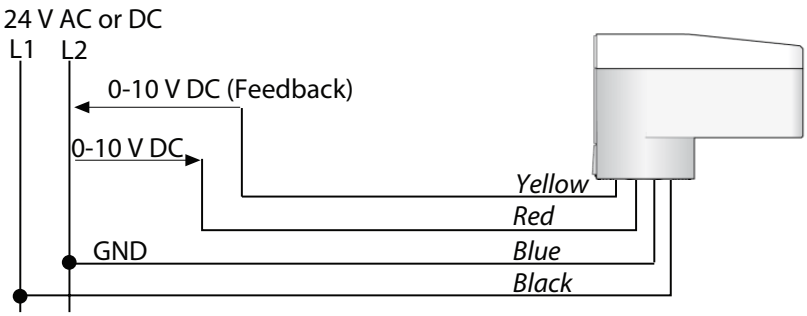
Dimensions actuator Type MO



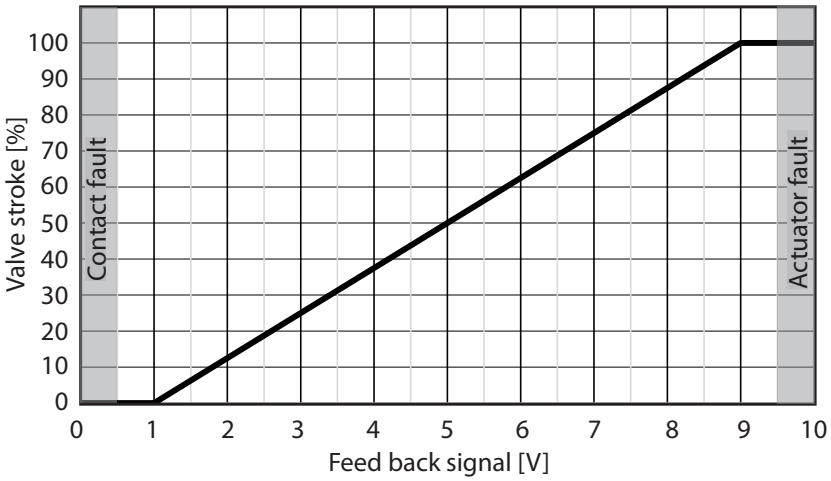
Installation positions for actuator Type MO IP54 (All directions)



Wiring diagram actuator Type MO



Feedback signal actuator Type MO



Feed back signal

Voltage	Description
< 0.5 V	No contact/Lost wire
1 - 9 V	Voltage proportional to valve stroke
1 V	Fully closed valve
9 V	Fully open valve
> 9.5 V	Internal actuator fault

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Feedback Actuator Type FRS

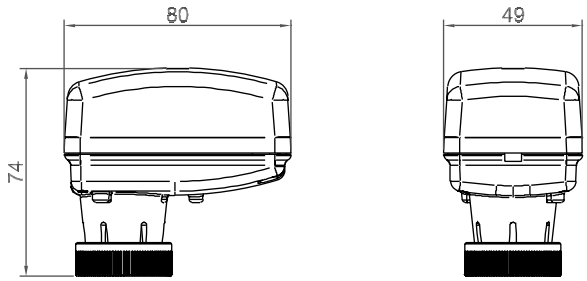
Technical data

Supply voltage: 24V AC/DC
Protection class: IP 54 acc. EN60529
Frequency: 50/60 Hz
Input impedance: > 100 k Ohm (DC 0-10 V)
Force: >160N
Stroke: Auto calibration
Ambient conditions: Temperature 0°C-50°C
Humidity 10-90% r.F.
Audible noise rating: < 30 db(A)
Cable length: 2.0 m, Halogen free
Weight: 215 g

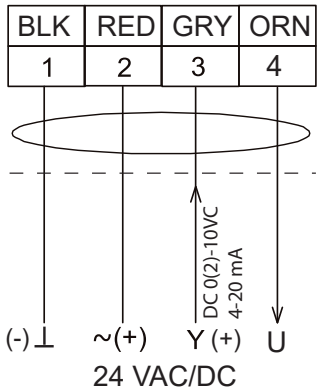
Operation Data

Item no.	Valve Dim.	Control signal	Running time (50 Hz)	Supply voltage	Power Consumtion	Feedback signal
53-1184	DN10-DN32	DC 0-10 V	8 s/mm	AC/DC 24 V +/- 15%	2.5 VA	0-10V

Dimensions [mm] actuator Type FRS



Wiring diagram actuator Type FRS



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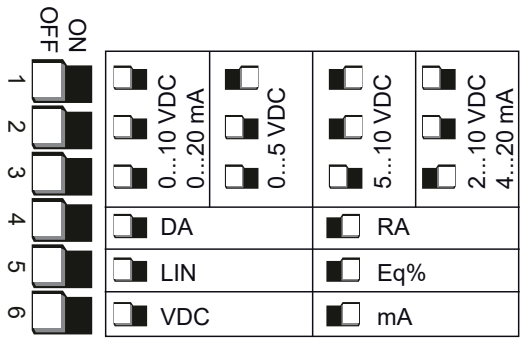
Configuration actuator Type FRS

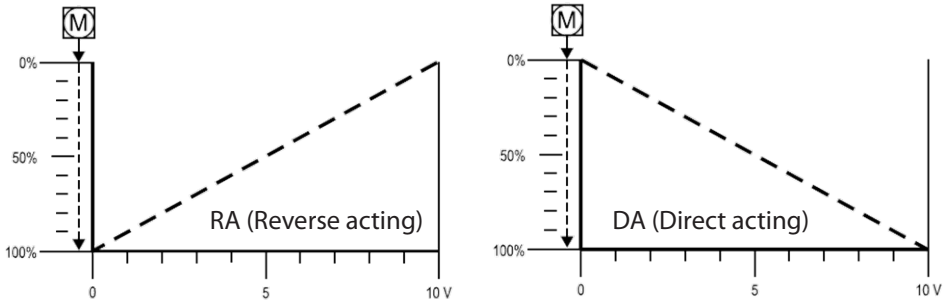
Dip switch 1-2-3

Control signal range
Factory setting 0-10V



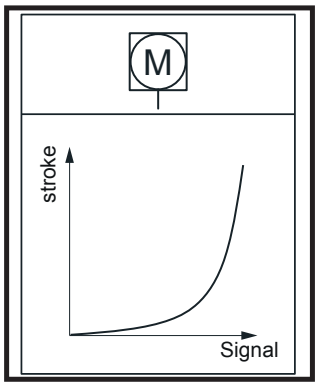
Dip switch 4

Stem action
Factory setting RA (Reverse acting)

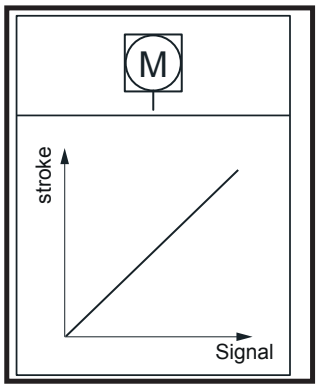


Dip switch 5

Actuator characterization
Factory setting EQ%



EQ% characterization



Linear characterization

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