

## Frese 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.

### 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

### 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
- Voltage and Current analog inputs



### Features - Failsafe Actuators Type MO

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

### Approval

- Conforms to:
  - EMC directive 2004/108/EC
  - Low voltage directive 2006/95/EC



## Frese OPTIMA Compact Failsafe & Feedback Actuators DN10-DN32

### Technical data - Feedback Actuator Type M0

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



### Operation Data

Item no.	Valve Dim.	Control signal	Running time (50 Hz)	Supply voltage	Power Consumption	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

### Technical data - Failsafe Actuator Type M0

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

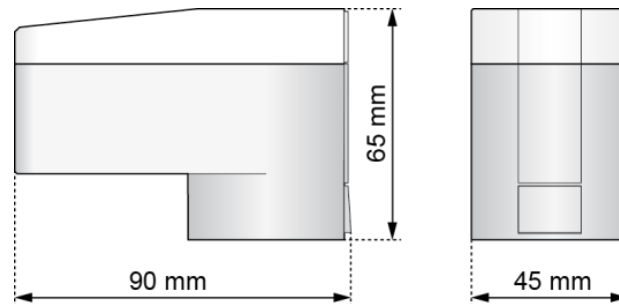


### Operation Data

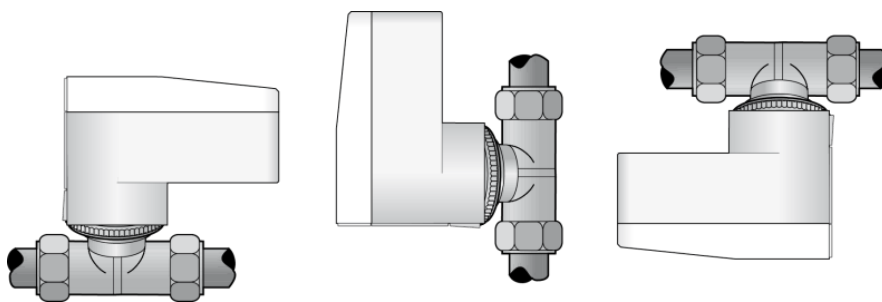
Item no.	Valve Dim.	Control signal Function	Running time (50 Hz)	Supply voltage	Power Consumption	Feedback signal
53-1980	DN10-DN32	DC 0-10V Fail Safe Open	15 s/mm	24V AC -10% /+20% 24V DC +/- 20%	1.4W (2.6 VA) 2.6W / 3.8 VA (Temporary)	0-10V
53-1981	DN10-DN32	DC 0-10V Fail Safe Close	15 s/mm	24V AC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

## Frese OPTIMA Compact Failsafe & Feedback Actuators DN10-DN32

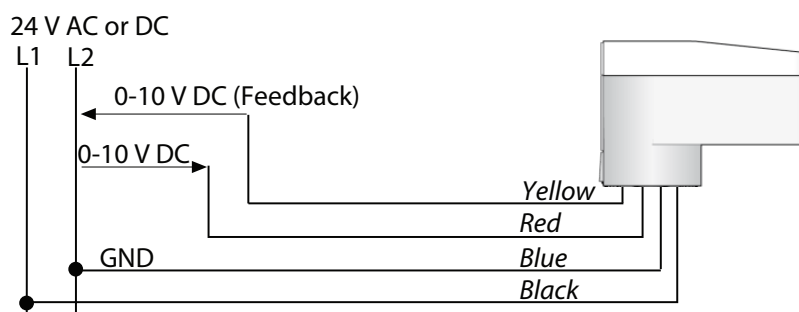
### Dimensions [mm] actuator Type M0



### Installation positions for actuator Type M0 IP54 (All directions)



### Wiring diagram actuator Type M0



## Frese OPTIMA Compact Failsafe & Feedback Actuators DN10-DN32

### Technical data - Feedback Actuator Type FRS

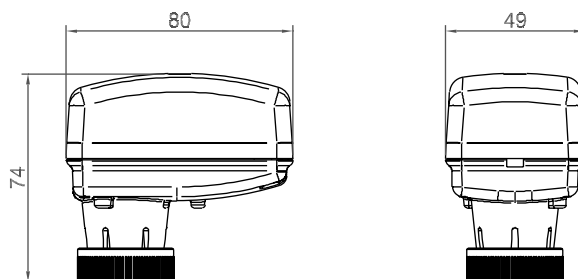
<b>Supply voltage:</b>	24V AC/DC
<b>Protection class:</b>	IP 54 acc. EN60529
<b>Frequency:</b>	50/60 Hz
<b>Input impedance:</b>	> 100 k Ohm (DC 0-10V)
<b>Force:</b>	>160N
<b>Stroke:</b>	Auto calibration
<b>Ambient conditions:</b>	Temperature 0°C-50°C Humidity 10-90% r.F.
<b>Cable length:</b>	2.0 m, Halogen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



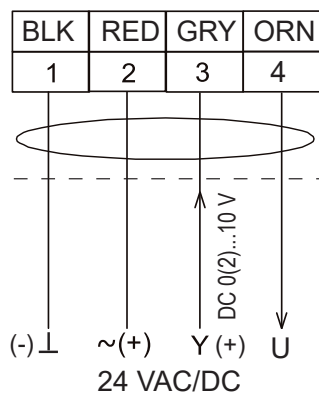
### Operation Data

Types	Valve Dim.	Control signal	Running time (50 Hz)	Supply voltage	Power Consumption	Feedback signal
53-1184	DN10-DN32	DC 0-10V	8 s/mm	AC/DC 24 V +/- 15%	2.5 VA	0-10V

### Dimensions [mm] actuator Type FRS



### Wiring diagram actuator Type FRS

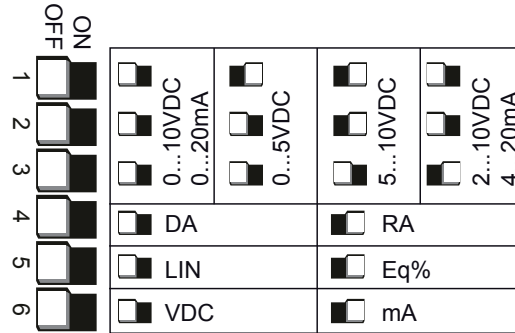


# Frese OPTIMA Compact Failsafe & Feedback Actuators DN10-DN32

## Configuration actuator Type FRS

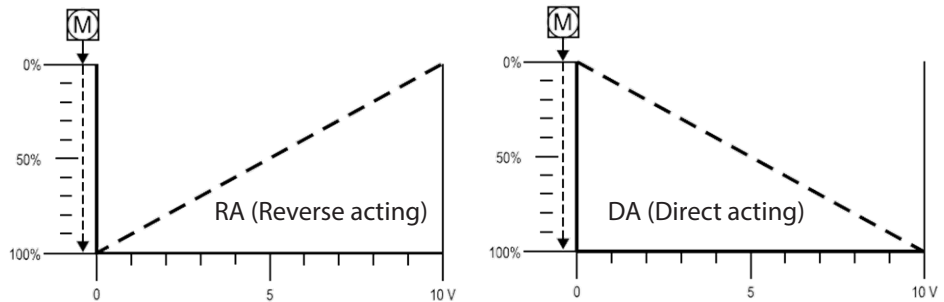
### Dip switch 1-2-3

Control signal range  
Factory setting 0-10V



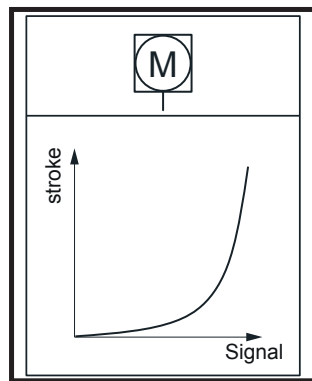
### Dip switch 4

Stem action  
Factory setting RA (Reverse acting)

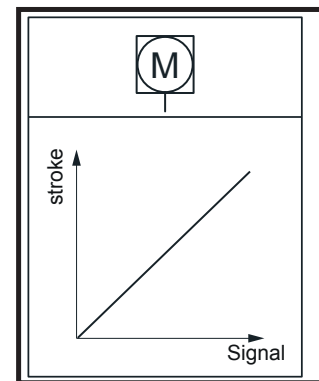


### Dip switch 5

Actuator characterization  
Factory setting EQ%



EQ% characterization



Linear characterization

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