

Frese OPTIMA Compact actuators DN10-DN32

Application

Proportional 0-10V or 3-position modulating or On/Off 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.

Features motoric actuators

- Nominal stroke on proportional 0-10V actuator up to 5.5 mm. Presetting from factory 2.5 or 5.5 mm
- 3-position or 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 cable
- Auto zero detection
- IP 43 protection
- Voltage and Current analog inputs



Features thermic actuators

- Self calibrating stroke on proportional 0-10V actuator
- On/Off or 0..10 V DC control signal
- Simple snap-on installation
- Small outer dimensions
- Cable included
- First-Open function
- IP 54 protection
- Power consumption 1 - 2 W

Approval

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



Frese OPTIMA Compact actuators DN10-DN32

Technical data motoric actuators

Supply voltage:	See "Types and Operation data
Protection class:	IP 43 acc. EN60529
Frequency:	50/60 Hz
Input impedance:	> 100 k Ohm (DC 0...10v)
Force:	>120N
Stroke:	2.5 - 5.0 - 5.5mm (Dip switches)
Ambient conditions:	Temperature 0°C...50°C Humidity 10-90% r.F.
Cable length:	1.5 m
Weight:	215 g



Types and Operation Data

Types	Valve Dim.	Control signal	Running time (50 Hz)	Supply voltage	Power Consumption	Parallel operation No. of actuator
53-1180	DN10-DN32	DC 0..10 V 5.5mm	8 s/mm	AC/DC 24 V +/- 15%	2.5 VA	Max. 4
53-1181	DN10-DN32	3 - position/On/Off	13 s/mm	AC 24 V +/- 15%	2.5 VA	Max. 4
53-1182	DN10-DN32	3 - position/On/Off	13 s/mm	AC 230 V +/- 10%	6.5 VA	Max. 4
53-1183	DN10-DN32	DC 0..10 V 2.5 mm	8 s/mm	AC/DC 24 V +/- 15%	2.5 VA	Max. 4

Technical data thermic actuators

Characteristics:	Thermic actuators, NC
Protection class:	IP 54 to EN 60529
Frequency:	50/60 Hz
Control signal:	0-10V DC or On/Off
Force:	100 N
Stroke:	2.5 - 5.0 - 5.5 mm
Running time:	120 s 0-10V/180 s On/Off
Ambient conditions:	0°C...60°C
Cable length:	1.0 m
Weight:	100 g

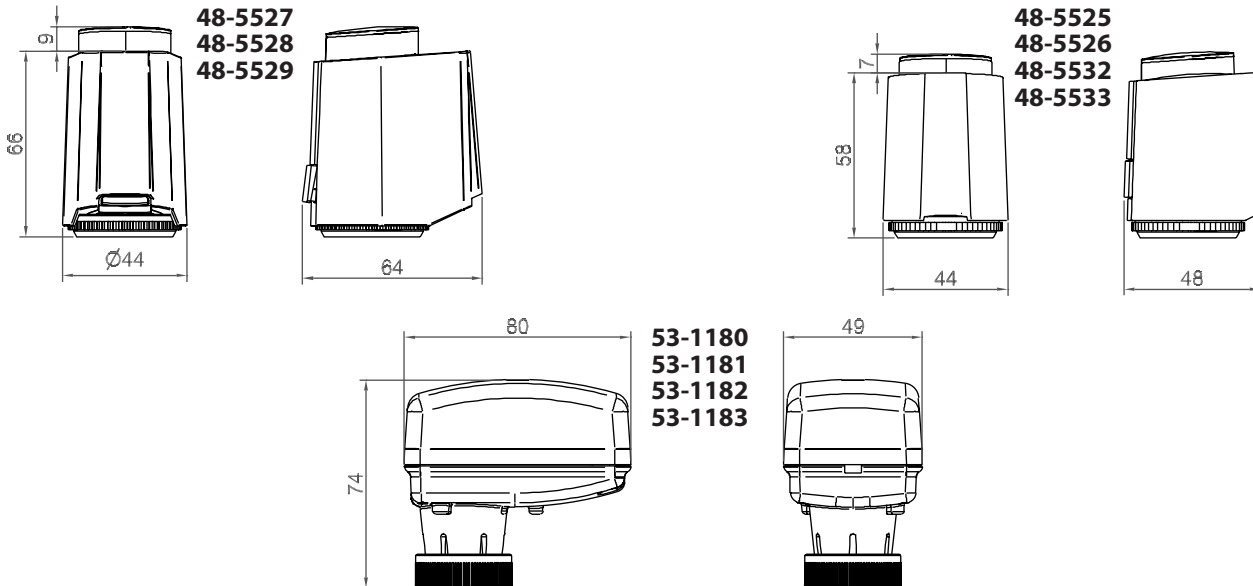


Types and Operation Data

Types	Valve Dim.	Control signal	Running time (50 Hz)	Supply voltage	Power Consumption	For valve stroke
48-5525	DN10-DN20	On/Off	180 s	AC/DC 24 V	1 W	2.5 mm
48-5526	DN10-DN20	On/Off	180 s	AC 230 V	1 W	2.5 mm
48-5527	DN10-DN32	On/Off	180 s	AC/DC 24 V	1.2 W	5.0-5.5 mm
48-5528	DN10-DN32	On/Off	180 s	AC 230 V	1.2 W	5.0-5.5 mm
48-5529	DN10-DN32	DC 0..10 V	30 s/mm	AC 24 V	1.2 W	2.5-5.0-5.5 mm
48-5532	DN10-DN20	On/Off	180 s	AC/DC 24 V	2 W	2.5 mm
48-5533	DN10-DN20	On/Off	180 s	AC 230 V	2 W	2.5 mm

Frese OPTIMA Compact actuators DN10-DN32

Dimensions [mm]



Combination matrix: Frese OPTIMA Compact DN10-15-20-25-32 / Actuators

Frese OPTIMA Compact can be combined with both thermic actuators and motoric actuators.

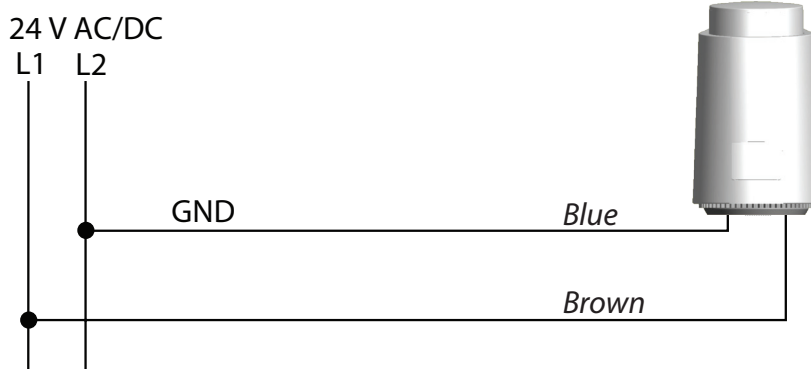
The design of the valve, combined with the Frese actuator, produces a perfect control characteristic that utilises the full control range of the system.

					Thermic Actuators				Motoric Actuators				
					On/Off		0....10V		0....10V		3-pos		
Male/Male ISO 228	Type	Stroke mm	Flow l/h	Dim	24V 2.5mm	230V 2.5mm	24V 5.0 - 5.5mm	230V 5.0 - 5.5mm	24V 2.5 - 5.0 - 5.5 mm	24V 2.5 mm	24V 5.0 - 5.5mm	24V	230V
	DN10 M/M LOW 2.5	2.5	30-200	DN10	•	•			•	•		•	•
	DN10 M/M LOW 5.0	5.0	65-370	DN10			•	•	•		•	•	•
	DN15 M/M LOW 2.5	2.5	30-200	DN15	•	•			•	•		•	•
	DN15 M/M LOW 5.0	5.0	65-370	DN15			•	•	•		•	•	•
	DN15 M/M HIGH 2.5	2.5	100-575	DN15	•	•			•	•		•	•
	DN20 M/M HIGH 2.5	2.5	100-575	DN20	•	•			•	•		•	•
	DN20 M/M HIGH 5.0	5.0	220-1330	DN20			•	•	•		•	•	•
	DN25 M/M 5.5	5.5	600-3609	DN25			•	•	•		•	•	•
DN32 M/M 5.5	5.5	550-4001	DN32			•	•	•		•	•	•	
	DN15 F/F LOW 2.5	2.5	30-200	DN15	•	•			•	•		•	•
	DN15 F/F LOW 5.0	5.0	65-370	DN15			•	•	•		•	•	•
	DN15 F/F HIGH 2.5	2.5	100-575	DN15	•	•			•	•		•	•
	DN20 F/F HIGH 2.5	2.5	100-575	DN20	•	•			•	•		•	•
	DN20 F/F HIGH 5.0	5.0	220-1330	DN20			•	•	•		•	•	•
	DN25 F/F 5.5	5.5	600-3609	DN25			•	•	•		•	•	•
	DN32 F/F 5.5	5.5	550-4001	DN32			•	•	•		•	•	•

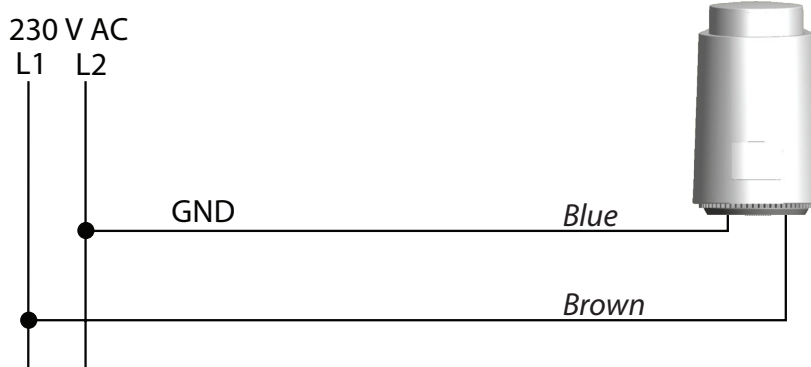
Frese OPTIMA Compact actuators DN10-DN32

Connection diagrams thermic actuators

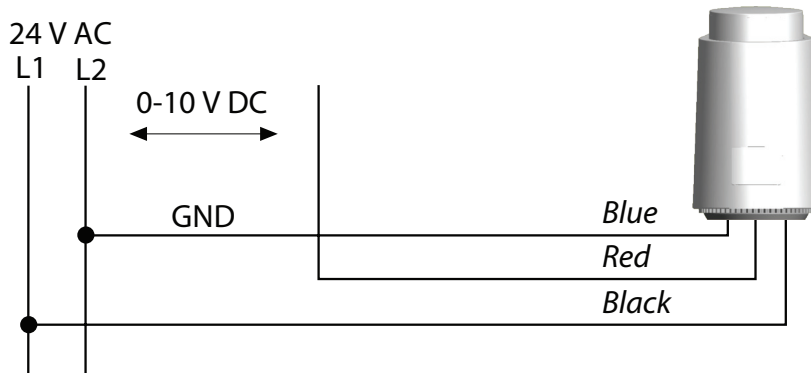
48-5525
48-5527
48-5532
On/Off 24V



48-5526
48-5528
48-5533
On/Off 230V



48-5529
0-10V 24V

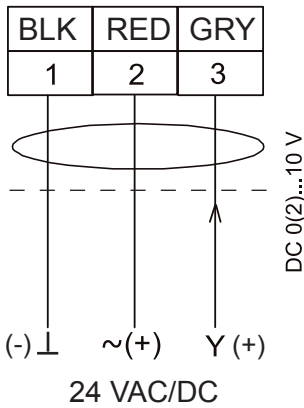


Frese OPTIMA Compact actuators DN10-DN32

Connection diagrams motoric actuators

53-1180

0-10V, 24V, 5.5 mm



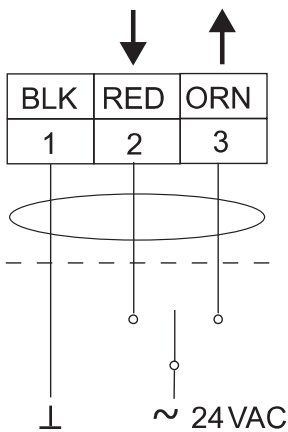
53-1183

0-10V, 24V, 2.5 mm



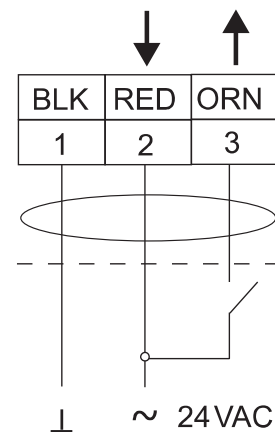
53-1181

3-position 24V



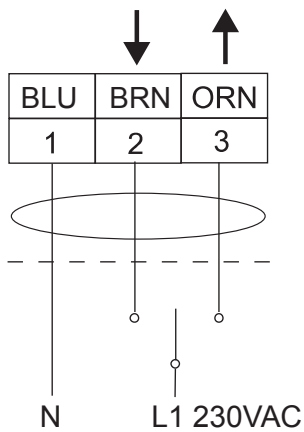
53-1181

On/Off 24V



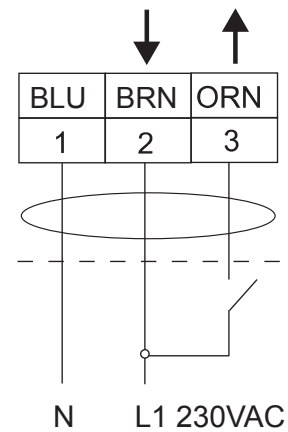
53-1182

3-position 230V



53-1182

On/Off 230V



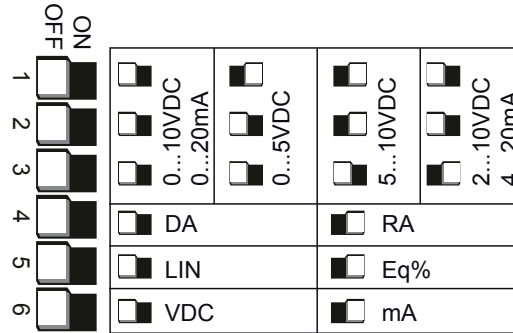
Frese OPTIMA Compact actuators DN10-DN32

Configuration motoric actuators

53-1180 & 53-1183

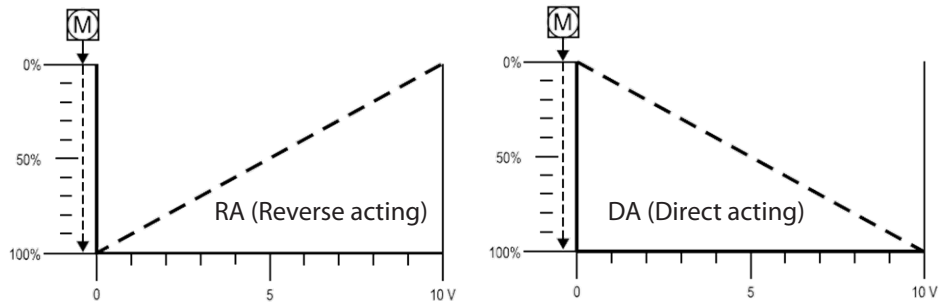
Dip switch 1-2-3

Control signal range
Factory setting 0-10V



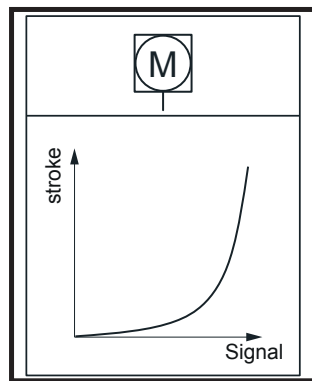
Dip switch 4

Stem action
Factory setting RA (Reverse acting)

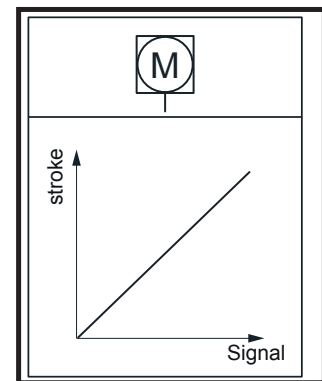


Dip switch 5

Actuator characterization
Factory setting EQ%



EQ% characterization



Linear characterization

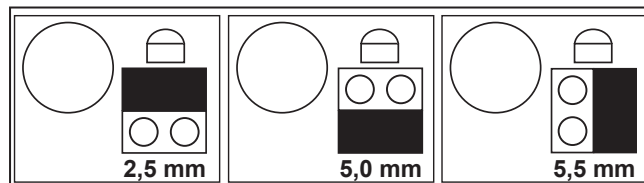
The actuator stroke can be selected via the Jumper and can be set to 2.5mm - 5.0mm or 5.5 mm

53-1180

Factory setting 5.5 mm

53-1183

Factory setting 2.5 mm



Frese A/S assumes no responsibility for errors, if any, in catalogues, brochures, and other printed matter. Frese A/S reserves the right to modify its products without prior notice, including already ordered products, if this does not alter existing specifications. All registered trademarks in this material are the property of Frese A/S. All rights reserved.

Frese A/S
Sorøvej 8
DK- 4200 Slagelse
Tel: +45 58 56 00 00
Fax: +45 58 56 00 91
info@frese.dk