

Frese OPTIMA Compact Actuators incl. Spring Return · DN150-DN300

Application

Actuator, proportional 0-10 V, 4-20 mA or 3-point floating modulating control of Frese OPTIMA Compact valves in heating, ventilating and air conditioning systems.

Due to the self adaption of stroke length, the actuator provides full utilization of the OPTIMA Compact valve modulation.

Can be supplied for Frese OPTIMA Compact PICV valves (DN150-DN300)



Features

- Spring return function, stem up or stem down version.
- Self calibrating.
- 3-point floating, 4-20 mA or 0..10 V modulating control within the same actuator.
- Linear or EQ% characterization available on the same actuator.
- Auto zero detection.
- Feedback signal.
- IP 66 protection EN60529.
- Direct mounting with automatic spindle connection.
- Manual operation by use of handle.

Approvals

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

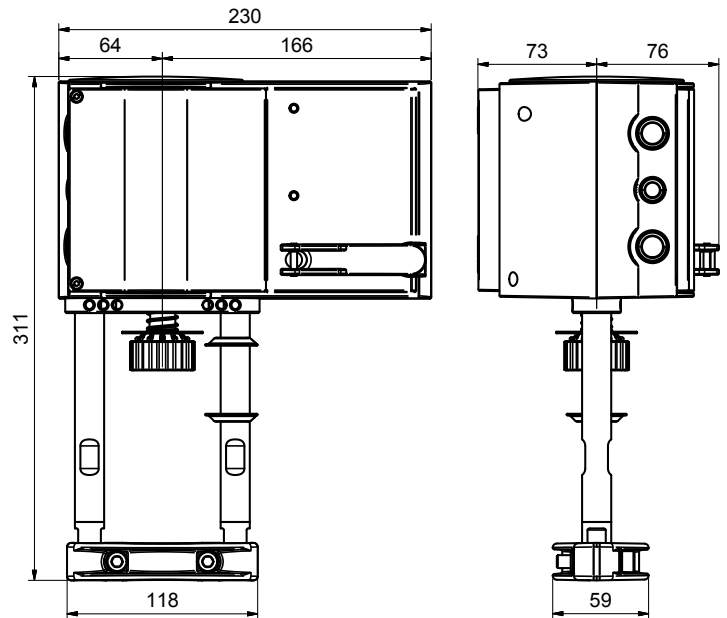


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Technical Data

Characteristics:	Motoric, modulating
Variant:	Spring Return
Protection class:	IP 66 to EN 60529
Frequency:	50/60 Hz
Supply voltage	24V AC/DC
Control signal:	0-10V DC, 4-20 mA DC or 3-point/2point floating
Control signal impedance:	Min. 100 kΩ (0-10V)
Actuating force:	2500 N Standard 2000N Spring Return
Stroke max:	48mm
Running time:	288 sec (Factory setting)
Ambient operating conditions:	0°C to 55°C
Manual operation:	Handle
Cable:	Not included
Weight:	4.20 kg Standard 5.90 kg Spring Return

Dimensions




Types and Operation Data

Type [Item no.]	Valve Dimension	Function	Supply voltage	Power Consumption
Type-10 [53-1299] Standard	DN150-DN300*	0-10 V/4-20 mA 3-point /2point	24 V AC +20% 24 V DC +15%	10 W/ (18 VA**)
Type-11 [53-1956] Spring Return-Stem up	DN150-DN300	0-10 V/4-20 mA 3-point /2point	24 V AC +20% 24 V DC +15%	10 W/ (20 VA**)
Type-12 [53-1957] Spring Return-Stem down	DN150-DN300	0-10 V/4-20 mA 3-point /2point	24 V AC +20% 24 V DC +15%	10 W/ (20 VA**)

*) Actuator type-03 is recommended for valves DN150-DN200. For more details on the type-03 actuator please refer to the dedicated technote.

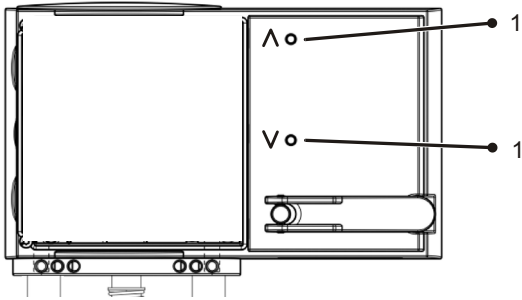
***) Design transformer for this value

Accessory

	Type	Frese no.
	230V transformer	07-2925

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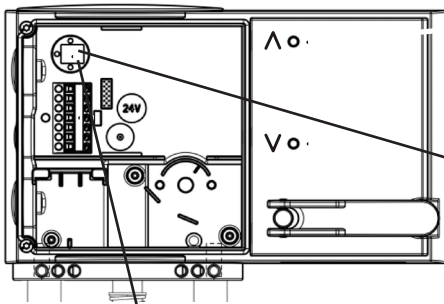
LED Indication Actuators



1 Status and acting direction indication (LED)

- The display consists of two dual-colour LEDs (red / green).
- Both LEDs flashing red: Initialisation procedure
- Upper LED lit red: Upper limit stop or "OPEN" position reached
- Lower LED lit red: Lower limit stop or "CLOSED" position reached
- Upper LED flashing green: drive running, moving towards "OPEN" position
- Upper LED lit green: drive stationary, last direction of running "OPEN"
- Lower LED flashing green: drive running, moving towards "CLOSED" position
- Lower LED lit green: drive stationary, last direction of running "CLOSED"
- No LED lit: No voltage supply (terminal 2b)
- Both LEDs are flashing red and green: drive is in manual mode

Actuator Settings



= factory setting

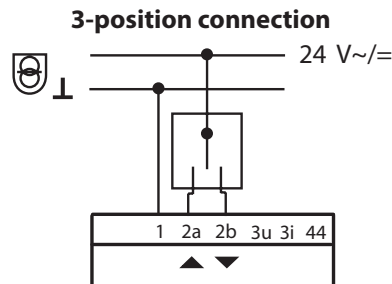
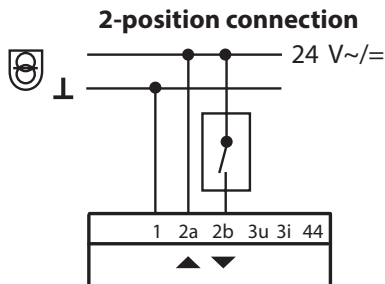
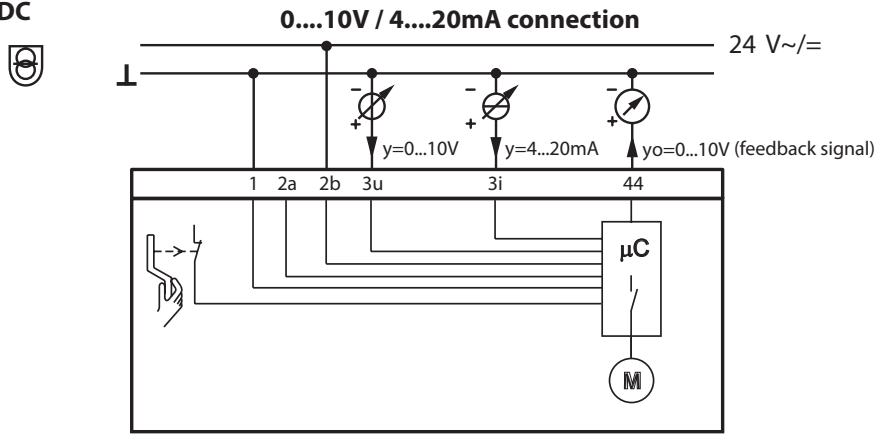
Run time per mm	Switch coding	Run time for 48 mm stroke								
2s	<table border="1"> <tr><td>1</td><td>2</td><td>3</td><td>4</td></tr> <tr><td>On</td><td>On</td><td>Off</td><td>Off</td></tr> </table>	1	2	3	4	On	On	Off	Off	96s ± 2
1	2	3	4							
On	On	Off	Off							
4s	<table border="1"> <tr><td>1</td><td>2</td><td>3</td><td>4</td></tr> <tr><td>On</td><td>Off</td><td>Off</td><td>Off</td></tr> </table>	1	2	3	4	On	Off	Off	Off	192s ±
1	2	3	4							
On	Off	Off	Off							
6s	<table border="1"> <tr><td>1</td><td>2</td><td>3</td><td>4</td></tr> <tr><td>On</td><td>Off</td><td>Off</td><td></td></tr> </table>	1	2	3	4	On	Off	Off		288s ± 8
	1	2	3	4						
On	Off	Off								
<table border="1"> <tr><td>1</td><td>2</td><td>3</td><td>4</td></tr> <tr><td>On</td><td>Off</td><td>Off</td><td>Off</td></tr> </table>	1	2	3	4	On	Off	Off	Off		
1	2	3	4							
On	Off	Off	Off							

Desired character. curve	Switch coding	Characteristic curve for valve	Characteristic curve for drive	Effective on valve								
Equal percentage	<table border="1"> <tr><td>1</td><td>2</td><td>3</td><td>4</td></tr> <tr><td>Off</td><td>On</td><td>On</td><td>Off</td></tr> </table>	1	2	3	4	Off	On	On	Off			
1	2	3	4									
Off	On	On	Off									
Linear	<table border="1"> <tr><td>1</td><td>2</td><td>3</td><td>4</td></tr> <tr><td>Off</td><td>Off</td><td>On</td><td>On</td></tr> </table>	1	2	3	4	Off	Off	On	On			
1	2	3	4									
Off	Off	On	On									

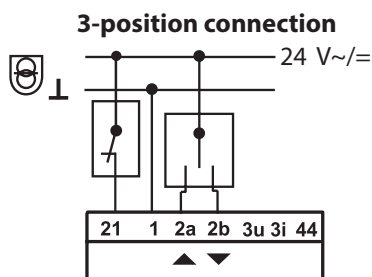
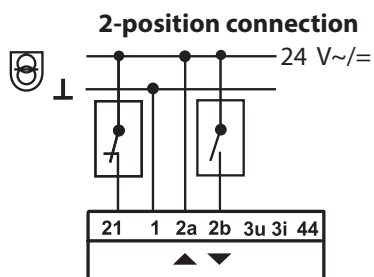
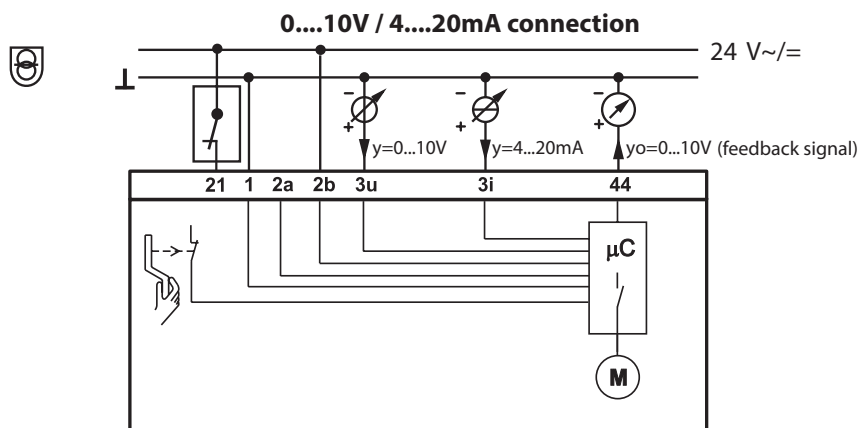
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Connection Diagrams · Standard Actuator

24V AC/DC

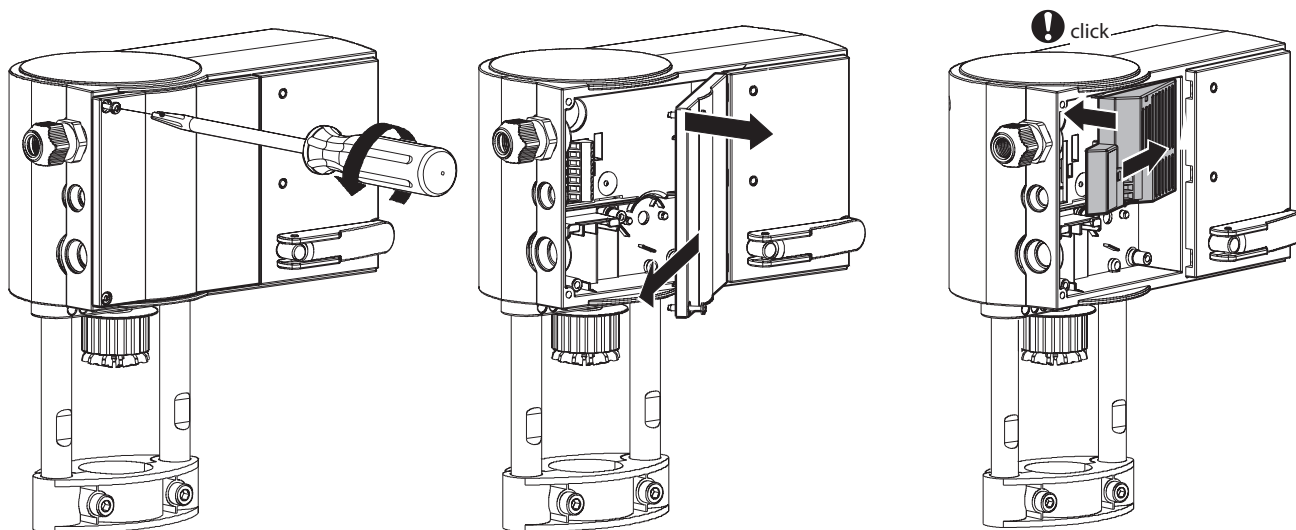


Connection Diagrams · Spring Return Actuator



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Mounting of 230V Transformer



Removing of 230V Transformer

