

Centra VRM-N

Rotary Actuator, 0-10 V or 3-Point Control

Application

The Resideo Centra VRM-N actuators are designed to provide proportional 0(2)-10 V, 3-Point (floating) or 2-Point control in heating and air conditioning systems. High control performance and a robust design are standard for this actuator.

In combination with the valves, DR/DRG/ZR/DRU/DRR and ZRK, it is possible to control very exactly heating and cooling water temperatures.

The actuators can be combined also with V6001 butterfly valves.

The mechanical interface between actuator and valve is designed for reliable operation.

The actuator is available as:

- VRM10N, VRM20N, VRM30N, VRM40N

Approvals

- CE

Special Features

- Maintenance-free electrical actuator for rotary valves
- Direct mounting on Centra rotary valves
- High torque for reliable operation
- Protected against overload and blocking which results in long lifetime
- Clear position indicator
- Manual operation possible
- Pluggable terminal for easy electrical installation
- LED status indication
- Control signal selector protected by cover



Technical Data

Specifications			
Power supply:	24 V DC ($\pm 10\%$) 24 V AC ($+15\%$ / -20%) 50/60 Hz		
Power consumption: in operation		W	VA
	10 Nm	1.0	2.4
	20 Nm	1.5	3.3
	30 Nm	2.0	4.3
	40 Nm	2.5	5.2
	In idle mode	All models	0.25 0.7
Connection:	Terminals under cover		
Control signal:	0(2)...10 V, 3-Point, 2-Point		
Protection standard:	IP 54 per EN 60529		
Angle of rotation:	90 °		
Running time:	120 s		
Insulation class:	III per EN 60730		
Ambient operating temperature:	0 to 60 °C		
Water temperature in valve:	1 to 120 °C		
Max. relative air humidity:	5 % to 95 % R.H. non-condensing		
Weight:	1.35 kg		

Transportation and Storage

Keep parts in their original packaging and unpack them shortly before use.

The following parameters apply during transportation and storage:

Parameter	Value
Environment:	clean, dry and dust free
Min. ambient temperature:	-35 °C
Max. ambient temperature:	70 °C
Min. ambient relative humidity:	5 % *
Max. ambient relative humidity:	95 % *

*non condensing

Method of Operation

The actuator is powered by a DC-motor. The spindle of the actuator rotates 90°. The position is controlled by internal electronics.

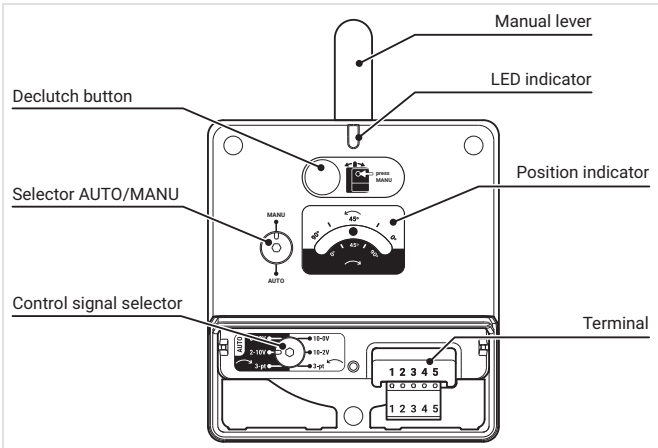


Fig. 1 Main features

The spindle can also be rotated manually. The MANU position at the Selector AUTO/MANU has to be chosen, and by pressing the MANU declutch button the gear is disengaged. In this configuration the manual lever can be used.

As soon the actuator is powered, the valve is driven by the actuator again.

An electrical overload circuit protects the actuator. If the rated torque is exceeded, the actuator is switched OFF automatically.

The actuator is maintenance-free.

Commissioning

The type of the control signal and the direction of rotation has to be chosen by the round control signal selector.

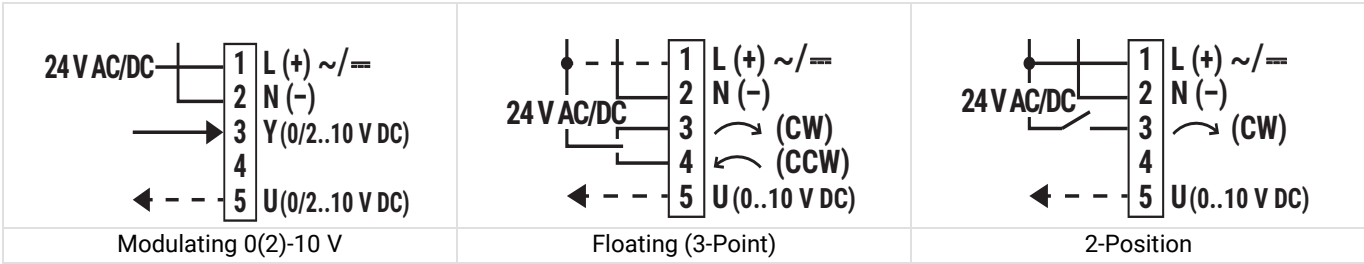
A 4 mm hexagon key has to be used with the round control signal selector.

Application	Position of the control signal selector	Action of the actuator
DR/DRG/DRU/DRR/ZR/ZRK V6001	 AUTO 0-10V 10-0V 2-10V 10-2V 3-pt 3-pt AUTO 0-10V 10-0V 2-10V 10-2V 3-pt 3-pt AUTO 0-10V 10-0V 2-10V 10-2V 3-pt 3-pt	 Y = 10 V
DR/DRG/DRU/DRR/ZR/ZRK V6001	 AUTO 0-10V 10-0V 2-10V 10-2V 3-pt 3-pt AUTO 0-10V 10-0V 2-10V 10-2V 3-pt 3-pt AUTO 0-10V 10-0V 2-10V 10-2V 3-pt 3-pt	 Y = 10 V

Installation Guidelines

Before mounting the actuator, position the rotary valve according to its installation instruction.

Electrical connection

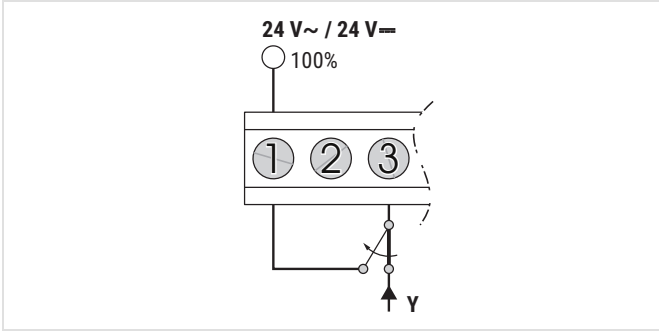


Note: In case of 3-Point electrical connection a combination of VRM40N rotary actuator with V6001 butterfly valve will not provide a full floating control performance.

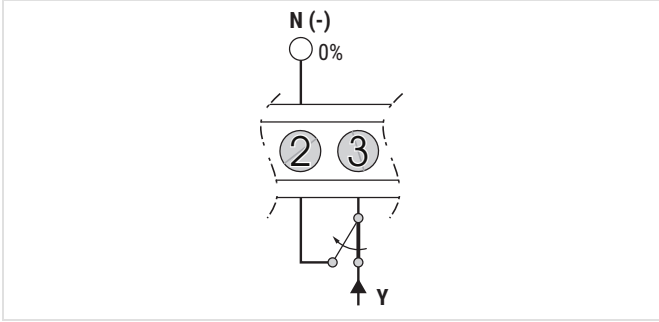
Overriding the input signal

To override the input signal Y, i.e. in order to control the position from an external source, connect to the actuator terminals as follows

- for a signal variable of 100 %, connect terminal 3 to terminal 1



- for a signal variable of 0 %, connect terminal 3 to terminal 2 (system ground or ground wire)



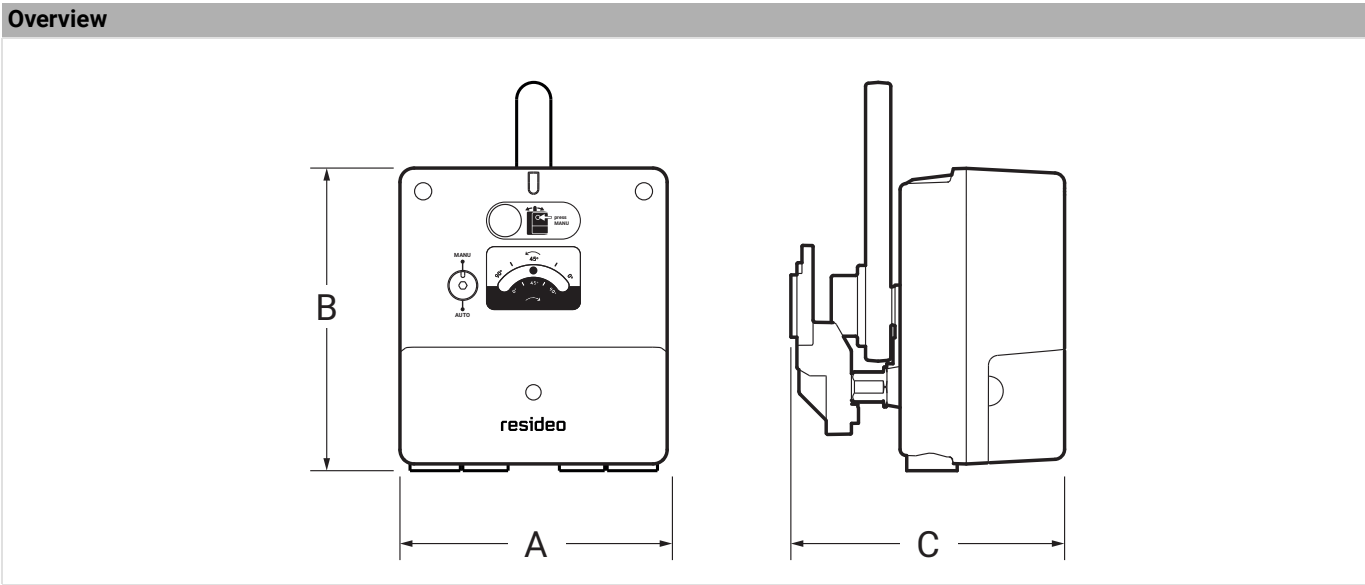
LED indicator

The movement and status of the actuator can be monitored by the LED indicator.

	Status	Indication
	Moving	Green light blinking 1 s ON, 1 s OFF
	Position per control signal reached	Solid green
	Manual mode, AUTO/MANU selector in MANU position	Solid orange
	No power supply	LED off
	Error (actual alert or fault) – loss of signal or supply voltage out of range	Red light blinking 1 s ON, 1 s OFF
	Error (actual alert or fault) – valve clogging detection	Solid red

Tab. 1 LED indicator

Dimensions



A	B	C	Type
133	146	136	VRM-N

Note: All dimensions in mm unless stated otherwise.

Ordering Information

The following tables contain all the information you need to make an order of an item of your choice.

Naming of rotary actuators

VR	M	20	N
Type of actuator	Type of control signal	Torque	Revision
Rotary	M = modulating 0(2) -10 V	20 Nm	N = produced in 2025 and later

Options

Voltage	Nominal torque (Nm)	Description	Item number
24 V AC/DC	10	ROTARY ACTUATOR 10 Nm	VRM10N
24 V AC/DC	20	ROTARY ACTUATOR 20 Nm	VRM20N
24 V AC/DC	30	ROTARY ACTUATOR 30 Nm	VRM30N
24 V AC/DC	40	ROTARY ACTUATOR 40 Nm	VRM40N

Suitable valves

Valve type	Nominal size diameter	Nominal torque (Nm)	Item number
DR	DN 15 - DN 32	10	VRM10N
ZRK*	DN 20 - DN 40	10	VRM10N
DR	DN 40 - DN 65	20	VRM20N
DRR	DN 25	20	VRM20N
DRU	DN 25 - DN 32	20	VRM20N
ZR	DN 15 - DN 65	20	VRM20N
DR	DN 80 - DN 150	30	VRM30N
ZR	DN 80 - DN 150	30	VRM30N
DR	DN 200	40	VRM40N
ZR	DN 200	40	VRM40N
V6001**	DN 40 - DN 100	40	VRM40N

* clutch and manual lever for installation have to be ordered separately (chapter Accessories)

** adapter for installation has to be ordered separately (chapter Accessories)

Accessories

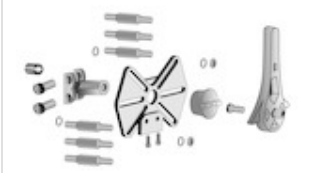
Accessories for installation of VRM10N actuator on ZRK valves

	Description	Dimension	Item No.
	030000525 Clutch		
	with ZRK valves		030000525
	030000517 Manual lever		
	with ZRK valves		030000517

Accessories for installation of VRM40N actuator on V6001 butterfly valves

	Description	Dimension	Item No.
	V6001A Actuator connection adapter		
		DN 40 - DN 65	V6001A01
		DN 80 - DN 100	V6001A02

Universal attachment kit for almost all third-party makes

	Description	Dimension	Item No.
	In some cases rework at the construction site must be accepted, only for actuators VMM and VRM-N.		ATU2040A