

MZ20A



Zone Actuator - Modulating Control

MZ20A is a zone actuator designed to provide modulating control together with VZ*19* zone valves.

The M20A actuator is used in fan-coil-units, induction units, small reheaters and recoolers, and for zone control applications.

Actuators are available in two modulating versions:

- MZ20A with a selectable command range
- MZ20A-R 0-10 V only

Reliable longtime operation is ensured from no mechanical feedback potentiometer and no mechanical endswitches. Automatic synchronization function provides self adjusting close off.

Based on a full stroke running time of 100 s, valve positioning and flow adjustment is very exact.

Manual override available on all versions.

SPECIFICATIONS

Power consumption..... 1.1 W (1.2 VA)
 Supply voltage..... 21.6 to 26.4 Vac (50/60 Hz)
 Speed18 s/mm (50 Hz) - 15 s/mm (60 Hz)
 working temperature-5 to 55°C
 storage temperature-25 to 65 °C
 Humidity Max 95% non condensing
 Stem force200 N
 Max stroke..... 6,5 mm
 Connection cable 3 wire 1,5 m
 Protection class IP 43 (vertical mounting)
 IP 41 (horizontal mounting)
 Suitable valves..... see table on page 3
 Manual override 3mm hex key
 Sound level35dBA
 Weight162 gr.

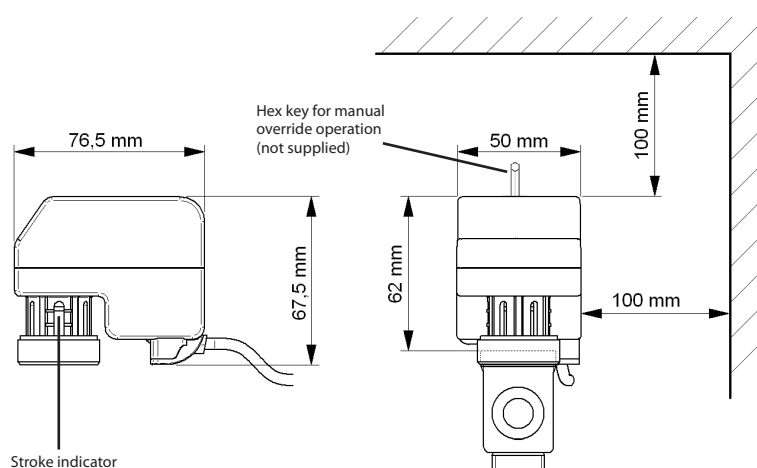
Product conforms, for CE marking, to the following directives:

- EMC 2004/108/CE according to the EN 61326-1 standard.
- LVD 2006/95/CE according to the EN 61010-1 standard for the products powered 230 V.

ORDERING TABLE

Part number	Description	Control signal
845-5051-000	MZ20A	0-10V, 2-10V, 1-5V, 6-10V, 6-9V, 4-7, 8-11V
845-5052-000	MZ20A-R	0-10V

DIMENSIONS mm



FUNCTION

MZ20A actuators are electric modulating. The valve stem movement is produced by rotation of a screw spindle connected, through a gear train, to a synchronous bidirectional motor.

An internal magnetic hysteresis coupling limits the torque on the valve stem, avoiding the use of microswitches and protecting the actuator from overload at each stroke end point.

The assembly of the actuator on to the valve is quick and trouble free due to the M30 knurled ring nut, this connection allows the actuator to be mounted by hand at any angle on the valve for optimum cable positioning. The cable is a 3 wire electrical connection 1.5m long.

All MZ20 actuators have stroke indication.

A micro-processor is used to accurately position the actuator based on control input signal. The close off position is synchronised, self adjusted, when the actuator is initially energised and at each point when the stem reaches 0% and 100% of travel.

All MZ20 actuators allow manual override by means of a 3mm hex socket. The manual override must not be operated with power tools . e.g. an electric screwdriver.



It is necessary to disconnect power to the actuator before operating the manual override.

The MZ20 actuator is maintenance free.

MOUNTING

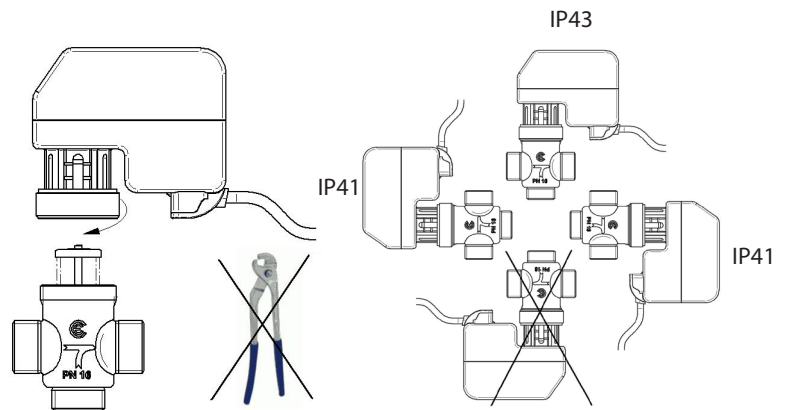
Before mounting to the valve, make sure pipes are clean, free from weld slag, perfectly aligned with the valve body and not subjected to vibrations.

The protection degree declared (IP44) is granted only if the valve is mounted with the actuator upwards.

The actuator is able to operate in any mounting position, but it is advisable not to install it upside down.

The actuator is assembled onto the valve by screwing the M30 x 1.5 knurled ring. No tools are necessary to mount the actuator onto the valve and damage may occur to the actuator or valve if tools are used.

MOUNTING



MZ20A-R accepts a 0-10V control signal only.

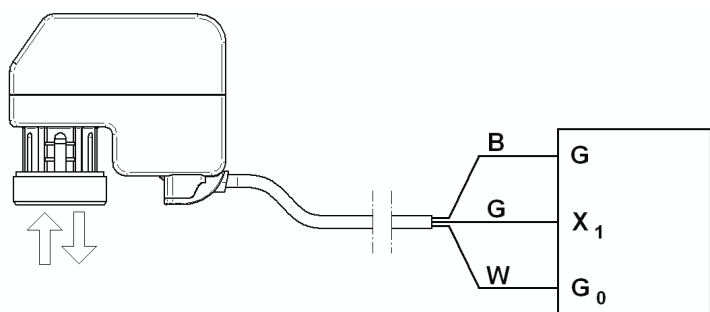
MZ20A has 7 different control signals in addition to the selection of direct or reverse action. The actuator is configured using an embedded micro-switch.

CONTROL RANGE AND DIRECT/INVERSE ACTION, MZ20A

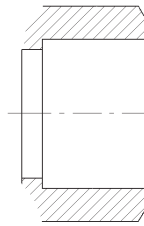
	ON	OFF	N. DIP.
	100% 0%	0% 100%	1
OFF	0..10 V	—	2
	6..9 V	—	3
	1..5 V	—	4
	2..10 V	—	5
	4..7 V	—	6
	6..10 V	—	7
	8..11 V	—	8

All VZ*19* Valves are stem up closed

ELECTRICAL CONNECTIONS



PART NUMBER ORDERING - EXTERNALLY THREADED VALVES



Two-way valves, VZ219E

Size	Connection	Kvs		External threads, Flat face sealing		Max. Close-off MZ20 actuator
		A-AB		Part Number	Type Designation	
DN 15	G1/2A	0.25		VZ219E-15BP01	VZ219E-15BP 0.25E SU 00	350 kPa
		0.4		VZ219E-15BP02	VZ219E-15BP 0.4E SU 00	
		0.6		VZ219E-15BP03	VZ219E-15BP 0.6E SU 00	
		1		VZ219E-15BP04	VZ219E-15BP 1.0E SU 00	
		1.6		VZ219E-15BP05	VZ219E-15BP 1.6E SU 00	
		2		VZ219E-15BP06	VZ219E-15BP 2.0E SU 00	250 kPa
DN20	G3/4A	2.5		VZ219E-20BP07	VZ219E-20BP 2.5E SU 00	
		4		VZ219E-20BP08	VZ219E-20BP 4.0E SU 00	
		6		VZ219E-20BP09	VZ219E-20BP 6.0E SU 00	150 kPa

Three-way valves, VZ319E

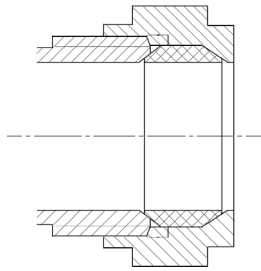
Size	Connection	Kvs		External threads, Flat face sealing		Max. Close-off MZ20 actuator
		A-AB	B-AB	Part Number	Type Designation	
DN 15	G1/2A	0.25	0.25	VZ319E-15BP01	VZ319E-15BP 0.25E SU 00	350 kPa
		0.4	0.25	VZ319E-15BP02	VZ319E-15BP 0.4E SU 00	
		0.6	0.4	VZ319E-15BP03	VZ319E-15BP 0.6E SU 00	
		1	0.6	VZ319E-15BP04	VZ319E-15BP 1.0E SU 00	
		1.6	1	VZ319E-15BP05	VZ319E-15BP 1.6E SU 00	
		2	1.6	VZ319E-15BP06	VZ319E-15BP 2.0E SU 00	250 kPa
DN20	G3/4A	2.5	1.6	VZ319E-20BP07	VZ319E-20BP 2.5E SU 00	
		4	2.5	VZ319E-20BP08	VZ319E-20BP 4.0E SU 00	
		6	4	VZ319E-20BP09	VZ319E-20BP 6.0E SU 00	

Three-way valves with integral by-pass (4 ports), VZ419E

Size	Connection	Kvs		External threads, Flat face sealing		Max. Close-off MZ20 actuator
		A-AB	B-AB	Part Number	Type Designation	
DN 15	G1/2A	0.25	0.25	VZ419E-15BP01	VZ419E-15BP 0.25E SU 00	350 kPa
		0.4	0.25	VZ419E-15BP02	VZ419E-15BP 0.4E SU 00	
		0.6	0.4	VZ419E-15BP03	VZ419E-15BP 0.6E SU 00	
		1	0.6	VZ419E-15BP04	VZ419E-15BP 1.0E SU 00	
		1.6	1	VZ419E-15BP05	VZ419E-15BP 1.6E SU 00	
		2	1.6	VZ419E-15BP06	VZ419E-15BP 2.0E SU 00	250 kPa
DN20	G3/4A	2,5	1.6	VZ419E-20BP07	VZ419E-20BP 2.5E SU 00	
		4	2.5	VZ419E-20BP08	VZ419E-20BP 4.0E SU 00	
		6	4	VZ419E-20BP09	VZ419E-20BP 6.0E SU 00	

Close-off = Max differential pressure allowed across the valve seat for reliable operation.

PART NUMBER ORDERING



Two-way valves VZ219C

Size	End Connection	Kvs		Single Pack - with nuts olives and adj. Caps		5 Multipacks - no nuts olives and adj. Caps		Max. Close-off
		A-AB	B-AB	Part Number	Type Designation	Part number	Type Designation	
DN 15	15 mm O/D	0.25		VZ219C-15BP01	VZ219C-15BP 0.25E SU 00	VZ219C-15BP51	VZ219C-15BP 0.25E SU M5	350 kPa
		0.4		VZ219C-15BP02	VZ219C-15BP 0.4E SU 00	VZ219C-15BP52	VZ219C-15BP 0.4E SU M5	
		0.6		VZ219C-15BP03	VZ219C-15BP 0.6E SU 00	VZ219C-15BP53	VZ219C-15BP 0.6E SU M5	
		1		VZ219C-15BP04	VZ219C-15BP 1.0E SU 00	VZ219C-15BP54	VZ219C-15BP 1.0E SU M5	
		1.6		VZ219C-15BP05	VZ219C-15BP 1.6E SU 00	VZ219C-15BP55	VZ219C-15BP 1.6E SU M5	
		2		VZ219C-15BP06	VZ219C-15BP 2.0E SU 00	VZ219C-15BP56	VZ219C-15BP 2.0E SU M5	
DN20	22 mm O/D	2.5		VZ219C-20BP07	VZ219C-20BP 2.5E SU 00	VZ219C-20BP57	VZ219C-20BP 2.5E SU M5	250 kPa

Three-way valves, VZ319C

Size	End Connection	Kvs		Single Pack - with nuts olives and adj. Caps		5 Multipacks - no nuts olives and adj. Caps		Max. Close-off
		A-AB	B-AB	Part Number	Type Designation	Part number	Type Designation	
DN 15	15 mm O/D	0.25	0.25	VZ319C-15BP01	VZ319C-15BP 0.25E SU 00	VZ319C-15BP51	VZ319C-15BP 0.25E SU M5	350 kPa
		0.4	0.25	VZ319C-15BP02	VZ319C-15BP 0.4E SU 00	VZ319C-15BP52	VZ319C-15BP 0.4E SU M5	
		0.6	0.4	VZ319C-15BP03	VZ319C-15BP 0.6E SU 00	VZ319C-15BP53	VZ319C-15BP 0.6E SU M5	
		1	0.6	VZ319C-15BP04	VZ319C-15BP 1.0E SU 00	VZ319C-15BP54	VZ319C-15BP 1.0E SU M5	
		1.6	1	VZ319C-15BP05	VZ319C-15BP 1.6E SU 00	VZ319C-15BP55	VZ319C-15BP 1.6E SU M5	
		2	1.6	VZ319C-15BP06	VZ319C-15BP 2.0E SU 00	VZ319C-15BP56	VZ319C-15BP 2.0E SU M5	
DN20	22 mm O/D	2.5	1.6	VZ319C-20BP07	VZ319C-20BP 2.5E SU 00	VZ319C-20BP57	VZ319C-20BP 2.5E SU M5	250 kPa

Three-way valves with integral by-pass (4 ports), VZ419C

Size	End Connection	Kvs		Single Pack - with nuts olives and adj. Caps		5 Multipacks - no nuts olives and adj. Caps		Max. Close-off
		A-AB	B-AB	Part Number	Type Designation	Part Number	Type Designation	
DN 15	15 mm O/D	0.25	0.25	VZ419C-15BP01	VZ419C-15BP 0.25E SU 00	VZ419C-15BP51	VZ419C-15BP 0.25E SU M5	350 kPa
		0.4	0.25	VZ419C-15BP02	VZ419C-15BP 0.4E SU 00	VZ419C-15BP52	VZ419C-15BP 0.4E SU M5	
		0.6	0.4	VZ419C-15BP03	VZ419C-15BP 0.6E SU 00	VZ419C-15BP53	VZ419C-15BP 0.6E SU M5	
		1	0.6	VZ419C-15BP04	VZ419C-15BP 1.0E SU 00	VZ419C-15BP54	VZ419C-15BP 1.0E SU M5	
		1.6	1	VZ419C-15BP05	VZ419C-15BP 1.6E SU 00	VZ419C-15BP55	VZ419C-15BP 1.6E SU M5	
		2	1.6	VZ419C-15BP06	VZ419C-15BP 2.0E SU 00	VZ419C-15BP56	VZ419C-15BP 2.0E SUM5	
DN20	22 mm O/D	2.5	1.6	VZ419C-20BP07	VZ419C-20BP 2.5E SU 00	VZ419C-20BP57	VZ419C-20BP 2.5E SU M5	250 kPa

Close-off = Max differential pressure allowed across the valve seat for reliable operation.