



NV4D15A.BA4005

4-WAY TERMINAL CONTROL VALVES, TYPE NV4D..

- Diverting 4-way control valves for terminal control
- Valve body : brass
- Nominal pressure : PN16
- Size : DN15 or DN20
- Wide range of K_{vs} values (0,4 .. 2,5 m³/h)
- Medium : water +2°C ... +100°C
- Valve body : with outside thread ISO 228/1 (flat sealing)
- Valve + actuator combination : normally closed

PN16



DN15 / DN20

DESCRIPTION

The 4-way terminal control valves, type NV4D.. , have been developed for the terminal regulation of hot/cold water circuits in a temperature range of +2°C .. +100°C (medium temperature) and closed circuits with nominal pressure up to 16 bars (PN16).

Typical applications are : zone control, induction units, VAV-boxes, climate- or cooled ceilings, fan-coil units, chilled beams, etc. with two-pipe or four-pipe systems.

A wide range of K_{vs} values is available in order to optimize valve selection for each application. Each valve is selected accordingly in order to realize optimal valve authority.

Without actuator the regulating port is normally open (NO). When the valve stem is pushed down, the regulating port is closed and the by-pass port is opened. The integrated spring moves the valve stem back to its NO position, once the push force is removed from the stem.

When combined with the BA.. type actuator, the combination (valve+actuator) is a normally closed (NC) valve. Without power supply (or when the control signal Y: 0Vdc) the flow through port is closed off.

The NV4D.. valves for terminal control can be combined with different types of Belparts thermoelectric actuators (series BA..). These actuators are available for on/off control, puls width modulation (PWM) signals or modulating control signal Y: 0..10 Vdc, etc. The maximum differential close-off pressure Δp_{max} achieved depends on the actuator chosen.

The valve body is realized in brass, whereas alternatively nickel plated brass can be delivered (on request). Mounting of these series of valves, NV4D.., are with outside thread ISO 228/1.

The standard delivery includes : the valve body, the thermoelectric actuator with connection cable and valve adapter (VA10). Valve connection parts are not included.

CONSTRUCTION



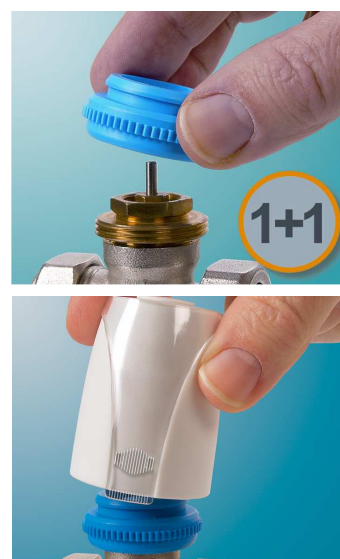
NOMENCLATURE

The article numbering contains all required parameters to define the basic characteristics of the valve + actuator combination.

Example: type NV4D15A.BA4005

NV	4	D	15A	BA	4005	
VALVE BODY			ACTUATOR			
						Terminal control valve, series NV..
						4 : 4-way valve, series NV.. with outside thread (flat sealing)
						D : threaded valve ISO 228/1
						DN (diameter) and K _{vs} value
						Thermoelectric Belparts actuator, series BA..
						Power supply :
						2005 : AC 230 Volt (version NC)
						4005 : AC 24 Volt (version NC)
						6135 : AC 24 Volt, Y : 0..10 Vdc (version NC)
						00 : without cable
						- : with cable, length 1m (standard)
						02 : with cable, length 2m
						special functions / special versions

MOUNTING



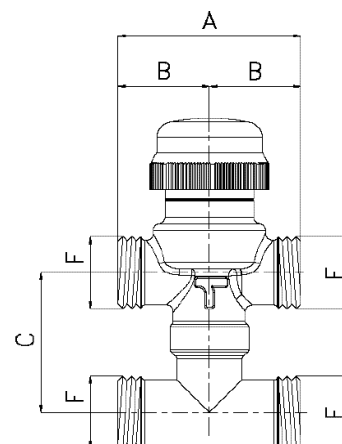
TECHNICAL DATA			TYPE
			NV4D..
Construction	4 way valve, diverting		
Size	DN 15, DN20		
Nominal pressure	PN 16 (16 bars)		
Medium	water (treatment according VDI 2035)		
Medium temperature	+2 .. +100°C		
Valve stroke	2,5 mm		
Valve adapter	type VA10		
K _{vs} values	see table below		
Connection	valve body with external thread according to ISO 228/1, flat connection		
Material	valve body	brass CW617N	
	insert	brass CW617N	
	stem	stainless steel	
	spring	stainless steel	
	sealing	O-ring EPDM	

TYPE	COLOR CAP	F	K _{vs} [m³/h]	Δp _{max} ²⁾ [kPa]	DIMENSIONS [mm]		
					A	B	C
NV4D15A	White	G½"	1,60	150	52	26	40
NV4D15B	White	G½"	1,0	150			
NV4D15C	White	G½"	0,63	150			
NV4D15D	White	G½"	0,4	150			
NV4D20A	White	G¾"	2,50	150	52	26	50

¹⁾ The valve adapter, type VA10, is used for the mounting the thermoelectric Belparts actuator, series BA.. (included in the standard delivery)

²⁾ The Δp_{max} corresponds to the maximum differential pressure which allows closing the valve with the thermoelectric actuators Belparts, type BA..

For comfort reasons (noise, etc.), the pressure difference over the valve Δp should be limited to approximately 30kPa.



The 4-way valves, type NV4D.., can be motorised with Belparts thermoelectric actuators included in the tabel below:

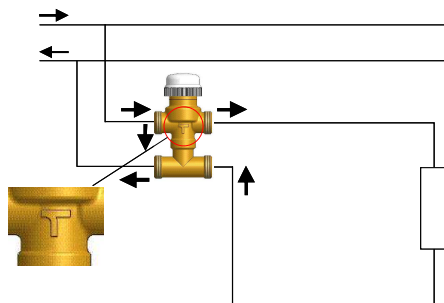
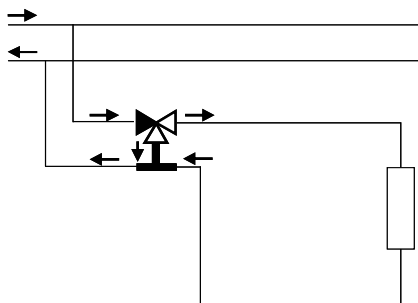
SERIE	VERSION	FORCE	CONTROL SIGNAL	SHEET
BA2005..	AC 230 Volt	100 N	on/off or PWM	6.111
BA4005..	AC 24 Volt	100 N	on/off or PWM	6.112
BA6135..	AC 24 Volt	100 N	modulating 0..10Vdc	6.121

The electrical connection is made by a removable cable with length 1m or 2m , other lenghts are available on demand.

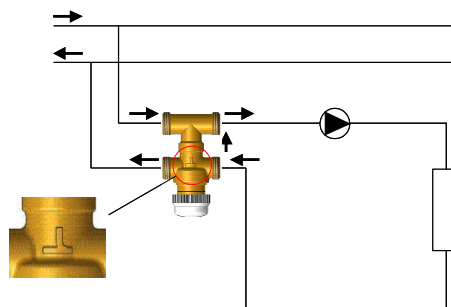
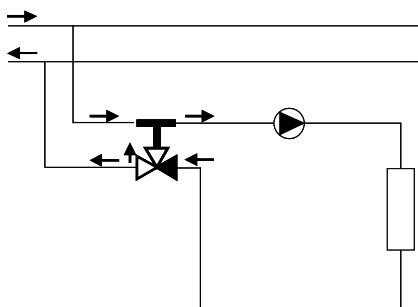
100 kPa ≈ 1 bar ≈ 10 mH₂O

APPLICATION EXAMPLES

DIVERTING CIRCUIT WITH DIVERTING VALVE



MIXING CIRCUIT WITH DIVERTING VALVE



MOUNTING



When isolation material is used on installation parts in the direct environment of the valve + actuator combination (for example Armaflex on pipes, etc.) it is recommended to use ammonia-free isolation material. By using ammonia-free material irreparable damage by corrosion (like stress corrosion, etc.) can be avoided.