

RH3F50A-80U29

HIGHLIGHTS

- Suitable for the control of hot and chilled water (0...+130°C) in HVAC systems control of heating plants
- Suitable for water with antifreeze compounds down to -10°C ^α
- Tight shut-off in the closed position
- Microprocessor controlled
- Automatic self-calibration on start up

DESCRIPTION

The motorized 2- or 3-way cast iron control valves, type RH, are suitable for the control of hot and chilled water (0...+130°C) in HVAC systems control of heating plants, with up to 50% max. antifreeze compounds like for example glycol.

The RH3F.. control valves are used as a mixing valve, and are made up of a valve and a motor set.

The selection of the motor set is depending on the valve size, power supply, control signal and differential pressure allowed.

(^α) When used in applications with water (with antifreeze compounds) down to -10°C, an additional stem heater must be ordered separately (T-HH-ZV13-..). Attention ! This stem heater cannot be combined with 45.. type actuators.

TECHNICAL SPECIFICATIONS	RH2F..	RH3F..
Form	Two-way	Three-way
Diameter nominal	DN 15 – DN 100	DN 15 – DN 100
Pressure rating	PN 16	PN 16
Flow characteristic	A→AB equal %	A→AB equal % B→AB linear
Stroke	14mm (DN 15 – DN 50) 20mm (DN 65) 30mm (DN 65 – DN 100)	14mm (DN 15 – DN 50) 20mm (DN 65) 30mm (DN 65 – DN 100)
Rangeability	≥ 40:1	≥ 40:1
Function	two-way valve	mixing or on-off valve
Connection type	Flanges acc. EN 1092-2 type 21	
Face to face dimension	Acc. EN 558-1 basic series 1	
Leakage rate	EN 1349 – seat-leakage VI G 1 (tight sealing)	
Material		
Body	Cast iron GG-25 (EN-JL1040)	
Plug	Brass CW614N	
Stem	CrNi-steel 1.4571	
Stem sealing	O-rings EPDM	

Valve alternatives and accessories

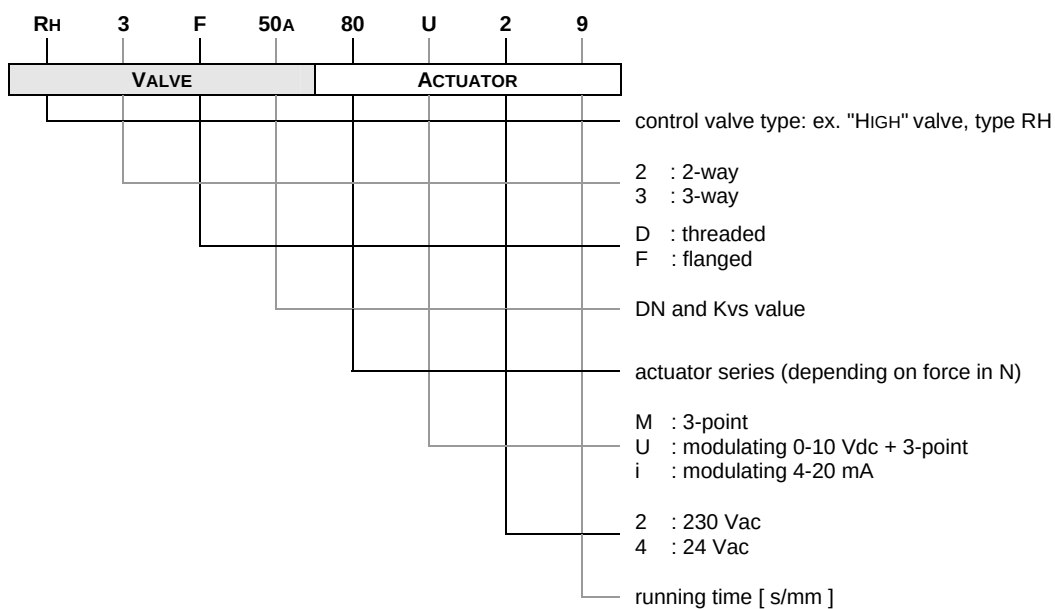
- Plug made of CrNi-steel 1.4305
- Suitable for water with antifreeze compounds down to -10°C 24 VAC, 50/60 Hz (not available for the actuator series 45.. !)
 DN 15 – DN 50 Power consumption: P_{max.} ≈ 200 VA P_N ≈ 45 VA
 DN 65 – DN 100 Power consumption: P ≈ 60 VA
- Epoxy resin special varnish as a corrosion resistant in case of condensed water, max. 80°C
- Usable for media based on mineral oil basis (stem sealing made of FKM)
- Technical silicon free version



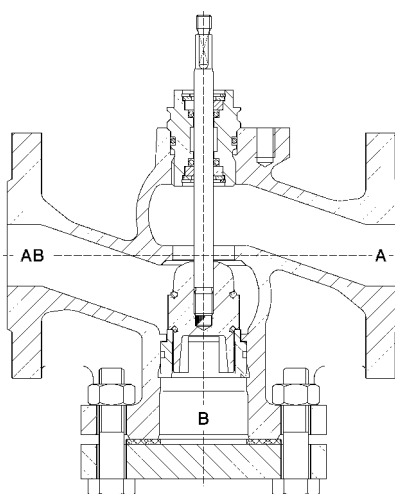
PRODUCT KEY

The product identification key contains all essential data defining the unique features of the valve / actuator combination.

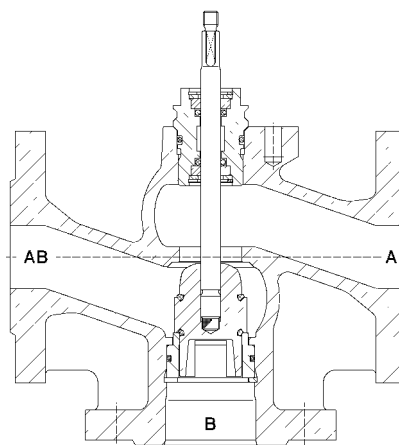
Example : type RH3F50A-80U29



VALVE CONSTRUCTION



RH2F..



RH3F..



VALVE ACTUATOR RANGE FOR RH.. CONTROL VALVES

	ACTUATOR SERIES					
	45..	60..	80..	160..	250..	500..
FORCE [N]	450	600	800	1600	2500	5000

Note • for the mounting of a 45.. type valve actuator on the RH.. valve body the mounting accessory T-HH-ZA74 must be ordered separately !

TECHNICAL DATA MOTORIZED VALVES RH2F.. AND RH3F..

		DN	15	20	25	32	40	50	65		80	100
kvs-value m³/h		A	4	6.3	10	16	25	40	63		100	160
		B	2.5	5	8	12.5	20	31.5	50		80	125
		C	1.6									
		D	1.25									
		E	0.63									
Stroke		mm	14						20	30	30	
45M45 45M25 45U45 45i45	Actuating time ¹⁾	s	125									
			70*									
	Closing pressure	kPa	900	800	550	300	150	100				
	60U49 60U29 60i49 60i29	Actuating time ¹⁾	s	170								
125*												
55												
27												
Closing pressure		kPa	1250	1250	750	400	250	150				
80U49 80U29 80i49 80i29	Actuating time ¹⁾	s	170						240			
			125*						180*			
			55						80			
			27						38			
	Closing pressure	kPa	1600	1600	1100	600	400	200	100			
160U44 160U24 160i44 160i24	Actuating time ¹⁾	s				95						
						55*						180*
	Closing pressure	kPa				1500	950					600
250U42 250i42 250U22 250i22	Actuating time ¹⁾	s						150				
						75*						
	Closing pressure	kPa				550	350	250				
500U42 500i42 500U22 500i22	Actuating time ¹⁾	s						150				
						75*						
	Closing pressure	kPa				1500	800	500				

100 kPa = 1 bar = 10 mWS

¹⁾ Actuating time freely adjustable, factory presetting is marked with *



TECHNICAL DATA VALVE ACTUATOR SERIES 45..



ACTUATOR TYPE		45M45	45M25	45U45	45i45
Actuating time at 50 Hz ¹⁾	s/mm	9 · 5*	9 · 5*	9 · 5*	9 · 5*
Actuating thrust	kN	0.45	0.45	0.45	0.45
Stroke	mm	max. 15	max. 15	max. 15	max. 15
Power supply	VAC	24 ±10%	230 +6% -10%	24 ±10%	24 ±10%
Frequency	Hz	50/60 ±5%	50/60 ±5%	50/60 ±5%	50/60 ±5%
Power consumption	VA	3	7	3	3
Input signal ²⁾		3-point	3-point	0(2)...10 VDC 70 kOhm	0(4)...20 mA 0.5 kOhm
Output signal ²⁾		0...10 VDC max. 8 mA min. 1200 Ohm	0...10 VDC max. 8 mA min. 1200 Ohm	0...10 VDC max. 8 mA min. 1200 Ohm	0...10 VDC max. 8 mA min. 1200 Ohm
Hysteresis	V	0.3	0.3	0.3	0.3

Enclosure protection	IP 54 in automatic operation IP 30 in manual operation	
Resolution	45U45 and 45i45 electric ≤ 0.04 VDC mechanical ≤ 0.06 mm	
Mains connection	24 VAC 230 VAC	1.5 m flexible cable, 0.5mm ² , with wire end ferrule Actuator with terminal
Operating mode	S3-50% ED c/h 1200	EN 60034-1
End position switch-off	load-dependent	
Ambient temperature	0...+50°C	
Weight	0.75 kg	

Actuator alternatives and accessories

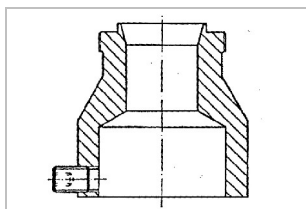
- Voltage: 24 VDC ³⁾ or 115 VAC

¹⁾ Actuating time freely adjustable, presetting is marked with *

²⁾ Invertible input and output signal

³⁾ Please state when ordering, which kind of direct-current

1. smooth direct current or
2. rectified alternating voltage



Note

For the mounting of a standard 45.. type valve actuator on the RH.. valve body the mounting accessory T-HH-ZA74 is required.
This accessory is included when ordering a complete assembly : valve + actuator.

However when ordering the actuator separately, in addition 1 pc. **T-HH-ZA74** must be ordered separately !



TECHNICAL DATA VALVE ACTUATOR SERIES 60..



ACTUATOR TYPE		60U49	60U29	60i49	60i29
Actuating time at 50 Hz ¹⁾	s/mm	12 · 9* · 4 · 1.9	12 · 9* · 4 · 1.9	12 · 9* · 4 · 1.9	12 · 9* · 4 · 1.9
Actuating thrust	kN	0.6	0.6	0.6	0.6
Stroke	mm	max. 20	max. 20	max. 20	max. 20
Power supply	VAC	24 ±10%	230 +6% -10%	24 ±10%	230 +6% -10%
Power supply ²⁾	VDC	24 ±10%	-	24 ±10%	-
Frequency	Hz	50/60 ±5%	50/60 ±5%	50/60 ±5%	50/60 ±5%
Power consumption	VA	6	12	6	12
Input signal ³⁾		• 3-point, or • 0(2)...10 VDC (77 kOhm)		0(4)...20 mA (0.5 kOhm)	
Output signal ³⁾		0...10 VDC max. 8 mA min.1200 Ohm	0...10 VDC max. 8 mA min.1200 Ohm	0...10 VDC max. 8 mA min.1200 Ohm	0...10 VDC max. 8 mA min.1200 Ohm
Hysteresis ⁴⁾	V	0.15* · 0.5	0.15* · 0.5	0.15* · 0.5	0.15* · 0.5

Enclosure protection	IP 54
Characteristic ⁴⁾	linear or exponential
Resolution	electric ≤ 0.04 VDC mechanical ≤ 0.095 mm
Operating mode	S3-50% ED c/h 1200 EN 60034-1
End position switch-off	load-dependent
Ambient temperature	0...+50°C
Weight	1.9 kg

Actuator alternatives and accessories

- Voltage: 115 VAC
- Position switch unit ⁵⁾: 2 switches, potential free, infinitely adjustable
Rated load: 8 A / 250 VAC
8 A / 30 VDC
Turn-on voltage: max. 400 VAC
max. 125 VDC
- Enclosure protection: IP 65
- Output signal ⁵⁾: X=0(4)...20 mA
- EEx protected actuator available on request

¹⁾ Actuating time freely adjustable, presetting is marked with *

²⁾ Please state when ordering, which kind of direct-current

1. smooth direct current or
2. rectified alternating voltage

³⁾ Invertible input and output signal

⁴⁾ Freely adjustable

⁵⁾ Position switch unit and output signal not in combination



TECHNICAL DATA VALVE ACTUATOR SERIES 80..



ACTUATOR TYPE		80U49	80U29	80i49	80i29
Actuating time at 50 Hz ¹⁾	s/mm	12 · 9* · 4 · 1.9	12 · 9* · 4 · 1.9	12 · 9* · 4 · 1.9	12 · 9* · 4 · 1.9
Actuating thrust	kN	0,8	0,8	0,8	0,8
Stroke	mm	max. 20	max. 20	max. 20	max. 20
Power supply	VAC	24 ±10%	230 +6% -10%	24 ±10%	230 +6% -10%
Power supply ²⁾	VDC	24 ±10%	-	24 ±10%	-
Frequency	Hz	50/60 ±5%	50/60 ±5%	50/60 ±5%	50/60 ±5%
Power consumption	VA	6	12	6	12
Input signal ³⁾		• 3-point, or • 0(2)...10 VDC (77 kOhm)		0(4)...20 mA (0.5 kOhm)	
Output signal ³⁾		0...10 VDC max. 8 mA min.1200 Ohm	0...10 VDC max. 8 mA min.1200 Ohm	0...10 VDC max. 8 mA min.1200 Ohm	0...10 VDC max. 8 mA min.1200 Ohm
Hysteresis ⁴⁾	V	0.15* · 0.5	0.15* · 0.5	0.15* · 0.5	0.15* · 0.5

Enclosure protection	IP 54
Characteristic ⁴⁾	linear or exponential
Resolution	electric ≤ 0.04 VDC mechanical ≤ 0.095 mm
Operating mode	S3-50% ED c/h 1200 EN 60034-1
End position switch-off	load-dependent
Ambient temperature	0...+50°C
Weight	1.9 kg

Actuator alternatives and accessories

- Voltage: 115 VAC
- Position switch unit ⁵⁾: 2 switches, potential free, infinitely adjustable
- Rated load: 8 A / 250 VAC
8 A / 30 VDC
- Turn-on voltage: max. 400 VAC
max. 125 VDC
- Enclosure protection: IP 65
- Output signal ⁵⁾: X=0(4)...20 mA
- EEx protected actuator available on request

¹⁾ Actuating time freely adjustable, presetting is marked with *

²⁾ Please state when ordering, which kind of direct-current

1. smooth direct current or

2. rectified alternating voltage

³⁾ Invertible input and output signal

⁴⁾ Freely adjustable

⁵⁾ Position switch unit and output signal not in combination


TECHNICAL DATA VALVE ACTUATOR SERIES 160..


ACTUATOR TYPE		160U44	160U24	160i44	160i24
Actuating time at 50 Hz ¹⁾	s/mm	6 · 4*	6 · 4*	6 · 4*	6 · 4*
Actuating thrust	kN	1.6	1.6	1.6	1.6
Stroke	mm	max. 30	max. 30	max. 30	max. 30
Power supply	VAC	24 ±10%	230 +6% -10%	24 ±10%	230 +6% -10%
Power supply ²⁾	VDC	24 ±10%	-	24 ±10%	-
Frequency	Hz	50/60 ±5%	50/60 ±5%	50/60 ±5%	50/60 ±5%
Power consumption	VA	6	12	6	12
Input signal ³⁾		• 3-point, or • 0(2)...10 VDC (77 kOhm)		0(4)...20 mA (0.5 kOhm)	
Output signal ³⁾		0...10 VDC max. 8 mA min.1200 Ohm	0...10 VDC max. 8 mA min.1200 Ohm	0...10 VDC max. 8 mA min.1200 Ohm	0...10 VDC max. 8 mA min.1200 Ohm
Hysteresis ⁴⁾	V	0.15* · 0.5	0.15* · 0.5	0.15* · 0.5	0.15* · 0.5

Enclosure protection	IP 54
Resolution	electric mechanical
Operating mode	S3-50% ED c/h 1200
End position switch-off	load-dependent
Ambient temperature	0...+50°C
Weight	3.2 kg

Actuator alternatives and accessories

- Voltage: 115 VAC
- Position switch unit ⁵⁾: 2 switches, potential free, infinitely adjustable
 Rated load: 8 A / 250 VAC
 8 A / 30 VDC
 Turn-on voltage: max. 400 VAC
 max. 125 VDC
- Enclosure protection: IP 65
- Output signal ⁵⁾: X=0(4)...20 mA
- Distance pillars, traverse and all screws located on exterior made of stainless steel
- EEx protected actuator available on request

¹⁾ Actuating time freely adjustable, presetting is marked with *

²⁾ Please state when ordering, which kind of direct-current

³⁾ Invertible input and output signal
⁴⁾ Freely adjustable

⁵⁾ Position switch unit and output signal not in combination


TECHNICAL DATA VALVE ACTUATOR SERIES 250..


ACTUATOR TYPE		250U42	250U22	250i42	250i22
Actuating time ¹⁾	s/mm	5 · 2.5*	5 · 2.5*	5 · 2.5*	5 · 2.5*
Actuating thrust	kN	2.5	2.5	2.5	2.5
Stroke	mm	max. 60	max. 60	max. 60	max. 60
Power supply	VAC	24 ±10%	230 +6% -10%	24 ±10%	230 +6% -10%
Power supply ²⁾	VDC	24 ±10%	-	24 ±10%	-
Frequency	Hz	50/60 ±5%	50/60 ±5%	50/60 ±5%	50/60 ±5%
Power consumption	VA	max. 40	max. 50	max. 40	max. 50
Input signal ³⁾		• 3-point, or • 0(2)...10 VDC (77 kOhm)		0(4)...20 mA (0.5 kOhm)	
Output signal ³⁾		0...10 VDC max. 8 Ma min. 1200 Ohm	0...10 VDC max. 8 mA min. 1200 Ohm	0...10 VDC max. 8 mA min. 1200 Ohm	0...10 VDC max. 8 mA min. 1200 Ohm
Hysteresis ⁴⁾	V	0.05 · 0.15* · 0.3 · 0.5	0.05 · 0.15* · 0.3 · 0.5	0.05 · 0.15* · 0.3 · 0.5	0.05 · 0.15* · 0.3 · 0.5

Enclosure protection	IP 54	
Resolution	electric	≤ 0.04 VDC
	mechanical	≤ 0.04 mm
Operating mode	S3-50% ED c/h 1200	EN 60034-1
End position switch-off	load-dependent	
Ambient temperature	0...+50°C	
Weight	250.. (24V)	7.0 kg
	250.. (230V)	8.2 kg

Actuator variant and accessories

- Voltage: 115 VAC
- Position switch unit: 2 switches (WE1/WE2), potential free, infinitely adjustable
 Rated load: 8 A / 250 VAC
 8 A / 30 VDC
 Turn-on voltage: max. 400 VAC
 max. 125 VDC
- Enclosure protection: IP 65
- Output signal: X=0(4)...20 mA
- Distance pillars, traverse and all screws located on exterior made of stainless steel

¹⁾ Actuating time freely adjustable, presetting is marked with *

²⁾ Please state when ordering, which kind of direct-current

1. smooth direct current or

2. ratified alternating voltage

³⁾ Invertible input and output signal

⁴⁾ Freely adjustable


TECHNICAL DATA VALVE ACTUATOR SERIES 500..


ACTUATOR TYPE		500U42	500U22	500i42	500i22
Actuating time ¹⁾	s/mm	5 · 2.5*	5 · 2.5*	5 · 2.5*	5 · 2.5*
Actuating thrust	kN	5.0	5.0	5.0	5.0
Stroke	mm	max. 60	max. 60	max. 60	max. 60
Power supply	VAC	24 ±10%	230 +6% -10%	24 ±10%	230 +6% -10%
Power supply ²⁾	VDC	24 ±10%	-	24 ±10%	-
Frequency	Hz	50/60 ±5%	50/60 ±5%	50/60 ±5%	50/60 ±5%
Power consumption	VA	max. 40	max. 50	max. 40	max. 50
Input signal ³⁾		• 3-point, or • 0(2)...10 VDC (77 kOhm)		0(4)...20 mA (0.5 kOhm)	
Output signal ³⁾		0...10 VDC max. 8 Ma min. 1200 Ohm	0...10 VDC max. 8 mA min. 1200 Ohm	0...10 VDC max. 8 mA min. 1200 Ohm	0...10 VDC max. 8 mA min. 1200 Ohm
Hysteresis ⁴⁾	V	0.05 · 0.15* · 0.3 · 0.5	0.05 · 0.15* · 0.3 · 0.5	0.05 · 0.15* · 0.3 · 0.5	0.05 · 0.15* · 0.3 · 0.5

Enclosure protection	IP 54
Resolution	electric mechanical
Operating mode	S3-50% ED c/h 1200
End position switch-off	load-dependent
Ambient temperature	0...+50°C
Weight	500.. (24V) 7.0 kg 500.. (230V) 8.2 kg

Actuator variant and accessories

- Voltage: 115 VAC
- Position switch unit: 2 switches (WE1/WE2), potential free, infinitely adjustable
 Rated load: 8 A / 250 VAC
 8 A / 30 VDC
 Turn-on voltage: max. 400 VAC
 max. 125 VDC
- Enclosure protection: IP 65
- Output signal: X=0(4)...20 mA
- Distance pillars, traverse and all screws located on exterior made of stainless steel

¹⁾ Actuating time freely adjustable, presetting is marked with *

²⁾ Please state when ordering, which kind of direct-current

1. smooth direct current or

2. ratified alternating voltage

³⁾ Invertible input and output signal

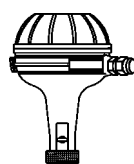
⁴⁾ Freely adjustable



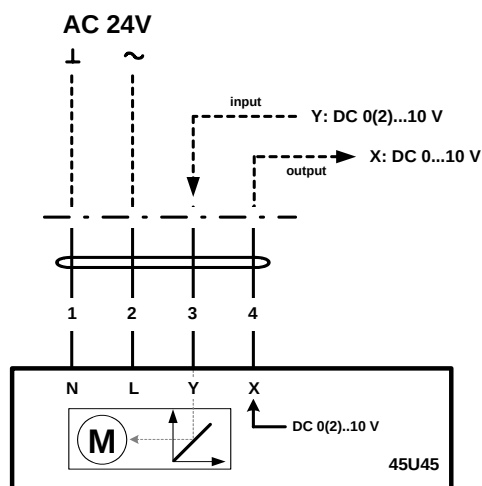
ELECTRICAL WIRING

AC 24 V / MODULATING 0-10VDC

TYPE : 45U45



45U45

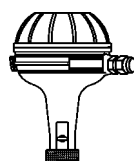


			Default
	Y: 10 V		
	Y: 0 V		
JP4			

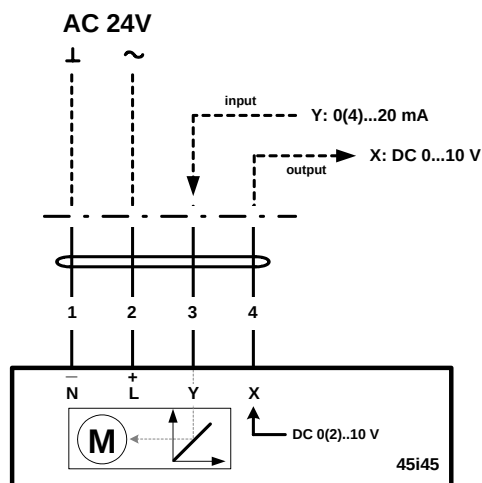
- 1 = N = Blauw - Bleu - Blau - Blue
 2 = L = Bruin - Brun - Braun - Brown
 3 = Y = Zwart - Noir - Schwarz - Black
 4 = X = Rood - Rouge - Rot - Red

AC 24 V / MODULATING 4-20 mA

TYPE : 45i45



45i45



			Default
	Y: 10 V		
	Y: 0 V		
JP4			

- 1 = N = Blauw - Bleu - Blau - Blue
 2 = L = Bruin - Brun - Braun - Brown
 3 = Y = Zwart - Noir - Schwarz - Black
 4 = X = Rood - Rouge - Rot - Red

----- limit of delivery

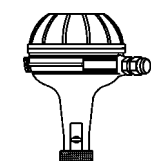
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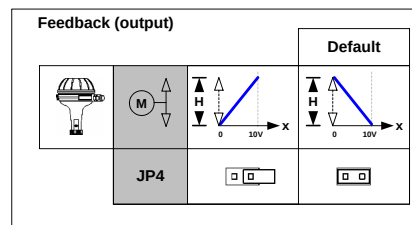
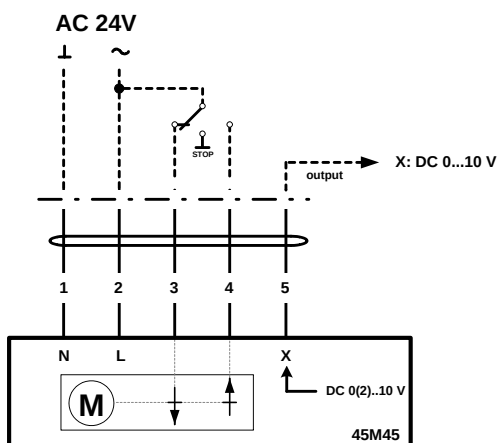
ELECTRICAL WIRING

AC 24 V / 3 POINT CONTROL

TYPE : 45M45



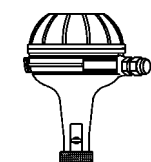
45M45



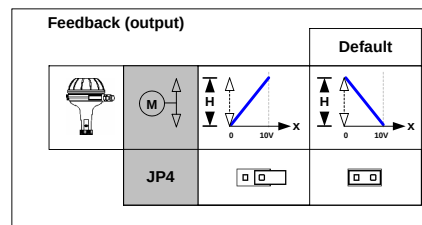
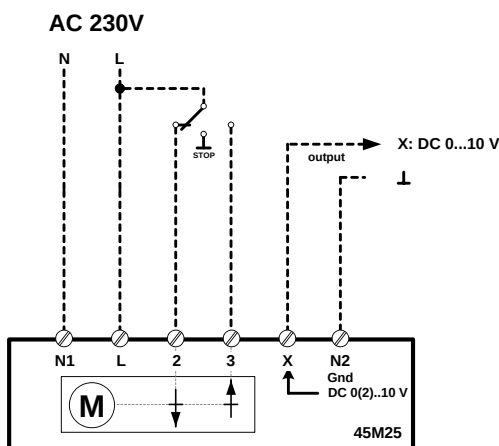
- 1 N Blauw - Bleu - Blau - Blue
2 L Bruin - Brun - Braun - Brown
3 Zwart - Noir - Schwarz - Black
4 Wit - Blanc - Weiss - White
5 X Rood - Rouge - Rot - Red

AC 230 V / 3 POINT CONTROL

TYPE : 45M25



45M25



----- limit of delivery

..... not included in our delivery

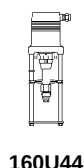


ELECTRICAL WIRING

AC 24 V / MODULATING 0-10VDC

TYPE : 60U49 - 80U49 - 160U44

60U49 / 80U49

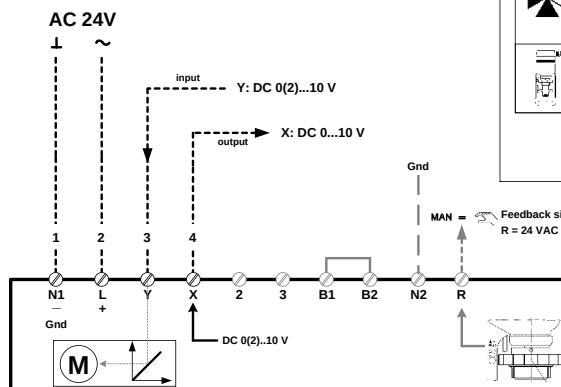


160U44



250U42 / 500U42

Modulating control signal 0-10Vdc



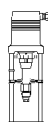
Control signal (input)		Default	
	Y: 10 V		
	Y: 0 V		
	S2	OFF	ON

B1/B2 connexion d'une entrée digitale (DI)

AC 24 V / MODULATING 4-20 mA

TYPE : 60i49 - 80i49 - 160i44

60i49 / 80i49

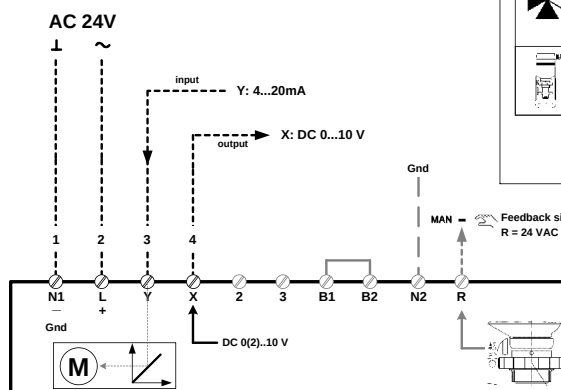


160i44



250i42 / 500i42

Modulating control signal 4-20mA



Control signal (input)		Default	
	Y: 10 V		
	Y: 0 V		
	S2	OFF	ON

B1/B2 connexion d'une entrée digitale (DI)

N2 is the zero potential for the „X“, „Y“ and „R“ signals.

- 24 VAC(DC) : it is recommended to connect N2 in case of actuators in 24 VAC(DC) design.

----- not included in our delivery

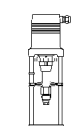


ELECTRICAL WIRING

AC 24 V / 3 POINT CONTROL

TYPE : 60U49 - 80U49 - 160U44 - 250U42 - 500U42

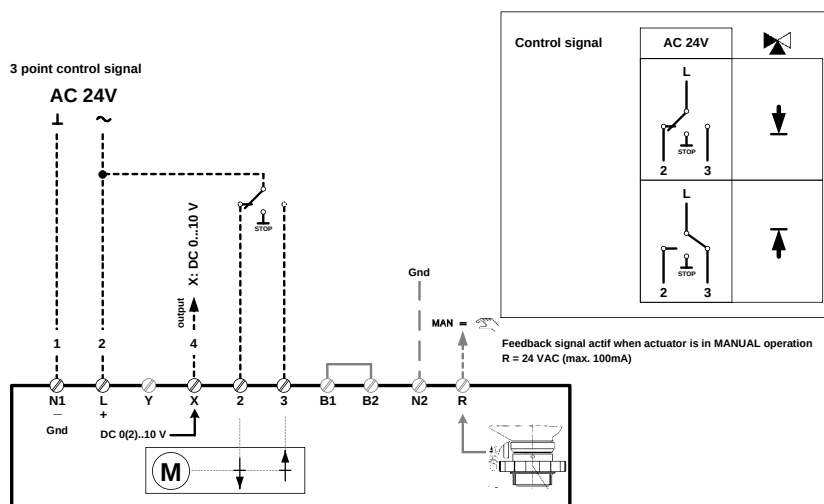
60U49 / 80U49



160U44



250U42 / 500U42

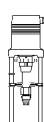


B1/B2 connexion d'une entrée digitale (DI)

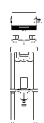
AC 230 V / 3 POINT CONTROL

TYPE : 60U29 - 80U29 - 160U24 - 250U22 - 500U22

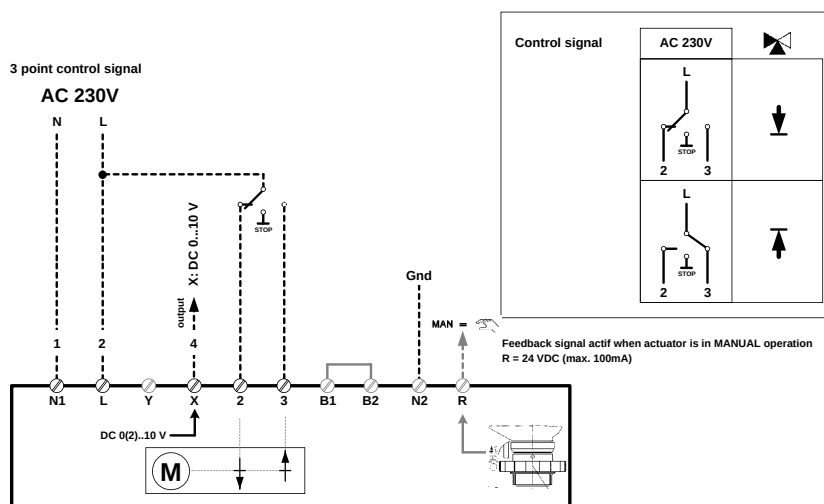
60U29 / 80U29



160U24



250U22 / 500U22



B1/B2 connexion d'une entrée digitale (DI)

N2 is the zero potential for the „X“, „Y“ and „R“ signals.

- 24 VAC(DC) : it is recommended to connect N2 in case of actuators in 24 VAC(DC) design.
- 230 VAC : if the actuators in 230 VAC design are to be triggered on the „continuous“ mode of operation, i.e. by analogue signal „Y“, the connection of N2 (zero potential of the controller) is absolutely necessary. For actuators in 230 VAC design the connection N2 in the „3-position“ mode of operation is only necessary if „X“ and/or „R“ are to be used by the actuator. If the zero potentials of the signals X, Y and R are identical with the zero potential of the supply voltage, a bridge can be laid between N1 and N2 in order to save an additional lead to N2

----- not included in our delivery

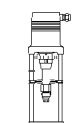


ELECTRICAL WIRING

AC 230 V / MODULATING 0-10Vdc

TYPE : 60U29 - 80U29 - 160U24 - 250U22 - 500U22

60U29 / 80U29

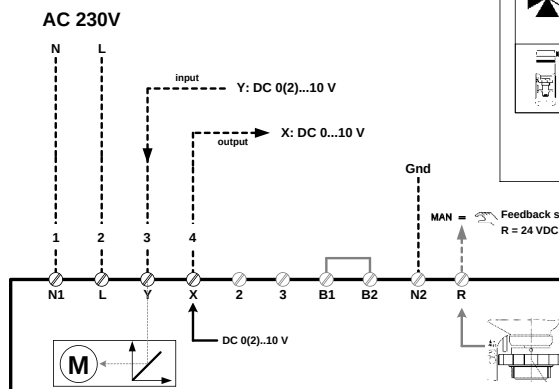


160U24



250U22 / 500U22

Modulating control signal 0-10Vdc



Control signal (input)		Default	
	Y: 10 V		
	Y: 0 V		
	S2	OFF	ON

B1/B2 connexion d'une entrée digitale (DI)

AC 230 V / MODULATING 4-20mA

TYPE : 60i29 - 80i29 - 160i24 - 250i22 - 500i22

60i29 / 80i29

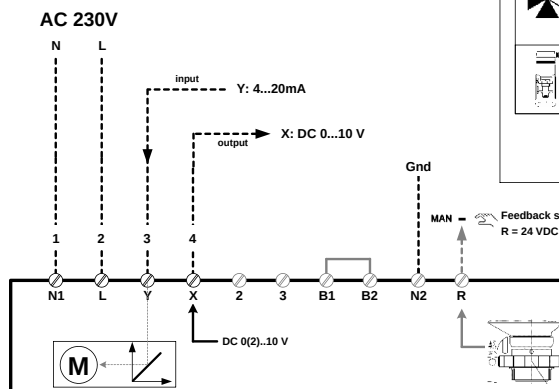


160i24



250i22 / 500i22

Modulating control signal 4-20mA



Control signal (input)		Default	
	Y: 10 V		
	Y: 0 V		
	S2	OFF	ON

B1/B2 connexion d'une entrée digitale (DI)

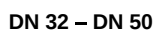
N2 is the zero potential for the „X“, „Y“ and „R“ signals.

- 230 VAC : if the actuators in 230 VAC design are to be triggered on the „continuous“ mode of operation, i.e. by analogue signal „Y“, the connection of N2 (zero potential of the controller) is absolutely necessary. For actuators in 230 VAC design the connection N2 in the „3-position“ mode of operation is only necessary if „X“ and/or „R“ are to be use by the actuator. If the zero potentials of the signals X, Y and R are identical with the zero potential of the supply voltage, a bridge can be laid between N1 and N2 in order to save an additional lead to N2.

..... not included in our delivery



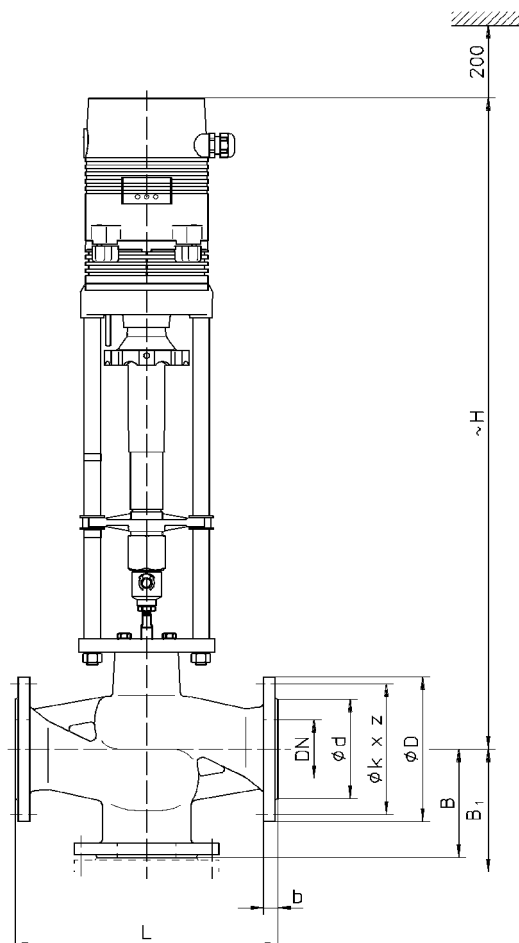
DRAWING



RH2F../RH3F.. with series 160..



DRAWING



RH2F../RH3F.. with series 250.. or 500..



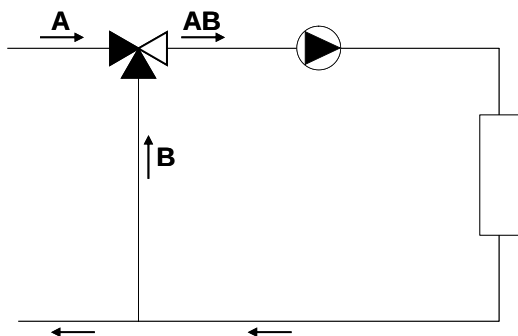
DIMENSIONS / WEIGHTS

DN		15	20	25	32	40	50	65	80	100
L	mm	130	150	160	180	200	230	290	310	350
B	mm	65	70	75	95	100	100	120	130	150
B ₁	mm	89	96	101	123	128	130	150	162	182
Ø D	mm	95	105	115	140	150	165	185	200	220
Ø k	mm	65	75	85	100	110	125	145	160	180
z	mm	4x Ø14			4x Ø18				8x Ø18	
b	mm	14	16	16	18	18	20	20	22	24
H	45..	24 VAC/230 VAC	mm	253	258	263	263	268	268	
	60..	24 VAC	mm	345	350	355	355	360	360	
		230 VAC	mm	370	375	380	380	385	385	
	80..	24 VAC	mm	345	350	355	355	360	360	410
		230 VAC	mm	370	375	380	380	385	385	435
	160..	24 VAC	mm				431	436	436	486
		230 VAC	mm				456	461	461	511
	250..	24 VAC	mm						725	735
m	500..	230 VAC	mm						725	735
	45..	RH2F..	kg	4.9	6.1	7.4	10.8	12.6	16.1	
		RH3F..	kg	3.9	4.8	5.8	8.4	9.9	12.4	
	60..	RH2F..	kg	6	7.2	8.5	11.9	13.7	17.2	
		RH3F..	kg	5	5.9	6.9	9.5	11	13.5	
	80..	RH2F..	kg	6	7.2	8.5	11.9	13.7	17.2	26.7
		RH3F..	kg	5	5.9	6.9	9.5	11	13.5	21.9
	160..	RH2F..	kg				13.2	15	18.5	28
		RH3F..	kg				10.8	12.3	14.8	23.2
	250..	RH2F..	kg						31.8	36.8
	500..	RH2F..	kg						33.0	38.0
	24 VAC	RH3F..	kg						27.0	31.0
	250..	RH2F..	kg						33.0	38.0
	500..	RH2F..	kg						33.0	38.0
	230 VAC	RH3F..	kg						28.2	32.2
	230 VAC	RH3F..	kg						28.2	32.2

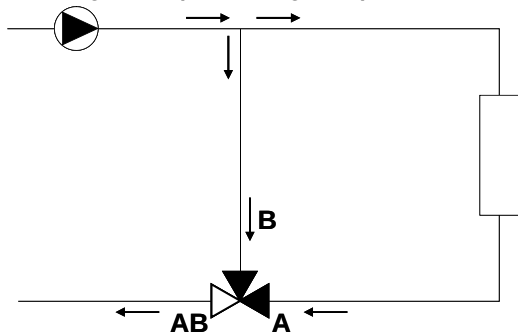


APPLICATION EXAMPLE

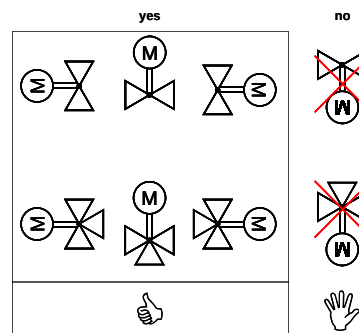
• Mixing circuit



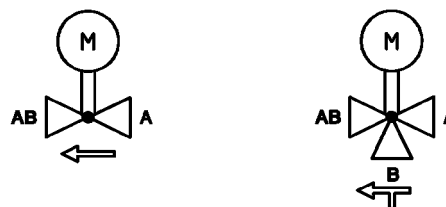
• Diverting circuit (with mixing valve)



INSTALLATION INSTRUCTION



- When mounting in the hydraulic circuit, the flow direction as indicated on the valve body must be respected..



- Valve trim could be damaged by dirt in the pipe system. Therefore we recommend the installation of strainers.

MOUNTING OF 60.. - 80.. - 160.. - 250.. - 500.. ACTUATORS



When the delivery of the actuator has been scheduled as a separate delivery (valve/actuator) it is necessary to (re-) initialize the system (valve+actuator) during the first commissioning or after demounting the actuator (type 60.. , 80.. , 160.. , 250.. or 500..).

The INIT (initialization) key on the PCB board or simultaneous signal on terminals 2 and 3 serves to trigger initialization.

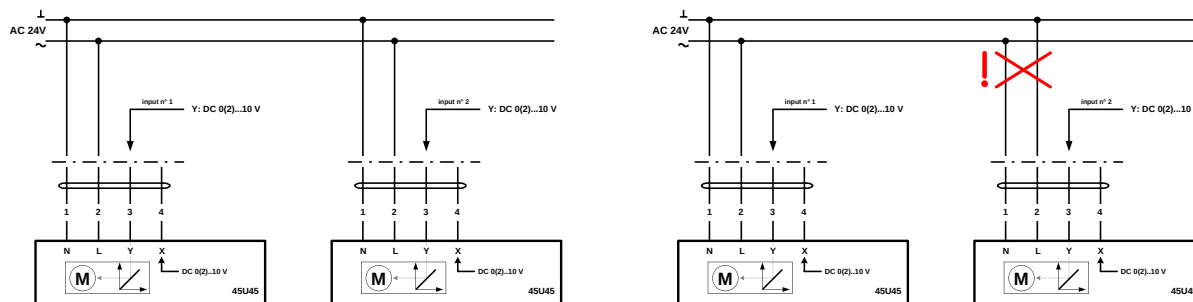
By pressing the INIT key >3s (until the actuator starts running), the exact travel length of the valve is measured and stored in the microcontroller for accurate operation.

When applying simultaneous signal on terminals 2 and 3, the signal must be applied for >3s at least.



APPLICATION EXAMPLE

COMMON MASS CONNECTIONS SHOULD ALWAYS BE RESPECTED !



NOTES



NOTES