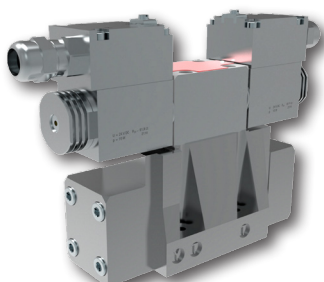


Explosion Proof, 4/2 and 4/3 Directional Control Valve, Pilot Operated

RNEXH1-10

Size 10 (D05) • Q_{max} 150 l/min (40 GPM) • p_{max} 320 bar (4600 PSI) / 420 bar (6100 PSI)



Technical Features

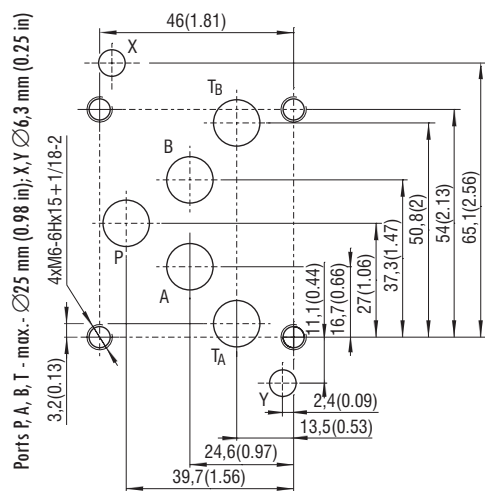
- › Directional control valve internally or externally pilot operated with standard mounting interface CETOP 4.2-4 P05-320, optional interface acc. to ISO 4401-05-05-0-05
- › Driven by an ISO 4401-03 (CETOP 03) solenoid operated directional valve
- › High pressure version of main stage 420 bar (6090 PSI) available
- › High transmitted hydraulic power, optimized design to minimize the pressure drop
- › Flexibly changed from internal pilot or drain to external by inserting or removing threaded plugs in the main control valve body
- › Wide range of interchangeable spools and valve controls available
- › Soft-shift, spool speed, main stroke limiter control options
- › In the standard version, the valve housing is zinc-coated for 520 h protection acc. to ISO 9227

ATEX/IECEx Classification

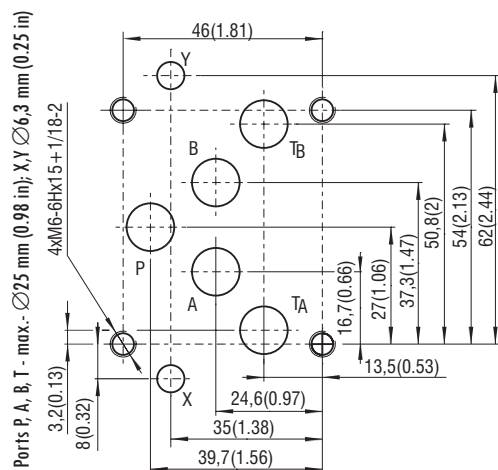
The valves equipped with explosion proof solenoids are available with following certifications and protection modes:

	EPS14ATEX1744 X	IECEx EPS14.0064 X
AC	I M2 Ex mb I Mb	Ex mb I Mb
	II 2G Ex mb IIC T4, T5, T6 Gb	Ex mb IIC T4, T5, T6 Gb
	II 2D Ex mb IIC T135°C, T100°C, T85°C Db	Ex mb IIC T135°C, T100°C, T85°C Db
DC	I M2 Ex e mb I Mb	Ex e mb I Mb
	II 2G Ex e mb IIC T4, T5, T6 Gb	Ex e mb IIC T4, T5, T6 Gb
	II 2D Ex tb IIC T135°C, T100°C, T85°C Db	Ex tb IIC T135°C, T100°C, T85°C Db

CETOP 4.2-4 P05-320 STANDARD PATTERN



ISO 4401-05-05-0-05 CETOP 4.2-4 R05-320



Technical Data

Valve type		RNEX*1-10	RNEX*1H-10
Valve size		10 (D05)	
Max. flow		l/min (GPM) 150 (37)	
Max. operating pressure at port P, A, B		320 (4640)	420 (6090)
- at port T (external drain)		210 (3050)	350 (5080)
- at port T (internal drain)		210 (3050)	
Minimum pilot pressure		bar (PSI) 12 (174)	
Maximum pilot pressure		bar (PSI) 210 (3050)*	350 (5080)*
Fluid temperature range (NBR)		°C (°F) -30 ... +70 (-22 ... +158)	
Ambient temperature range			
Temperature class / Nominal input power	T4-10 W/18 W	°C (°F) -30 ... +70/60 (-22 ... +158/140)	
	T5-10 W	-30 ... +55 (-22 ... +131)	
	T6-10 W	-30 ... +45 (-22 ... +113)	
Supply voltage fluctuations		U _N ± 10 %	
Max. switching frequency		1/h 10 000	
Enclosure type acc.to EN 60529		IP66 / IP68***	
Switching time at v=32 mm ² /s (156 SUS)	ON	ms AC: 45 ... 60** DC: 55 ... 75**	
	OFF	AC: 60 ... 90** DC: 60 ... 90**	
Weight	RNEXH1-102	kg (lbs) 7.3 (16.1)	
	RNEXH1-103	8.8 (19.4)	
Data Sheet		Type	
General information		GL_0060	Products and operating conditions
Operating Instructions		4090	
Mounting interface		SMT_0019	Size 10
Spare parts		SP_8010	

*For higher system pressure use option „Z“

**The values indicated refer to a solenoid valve working with a pilot pressure of 100 bar (mineral oil, temperature = 50 °C, viscosity = 36 mm²/s, P - A and B - T connected).

***Test procedure IP68: Pressure 1 m under water, test duration 24 h. The indicated IP protection level is only achieved if the cable is properly mounted.

Ordering Code

RNEXH [] - [] [] [] / [] [] [] / [] [] [] [] - B []

Explosion proof
4/2 and 4/3
directional control valve,
internally and externally
pilot operated

Design series
standard 320 bar
high pressure 420 bar
(not available for C11 spools)

Valve size
standard size
ISO 4401-05-05-0-05

Number of valve positions
two positions
three positions

Spool symbols
see the table „Spool Symbols“

Control options
without additional features
main spool stroke limiter
main spool shifting speed control
shifting speed control, with orifice (0.8 mm)
in port P of solenoid pilot valve

Piloting
internal
internal with installed pressure reducing valve,
fixed 30 bar setting
external

Drain
external
internal

1
1H

10
10R

2
3

No designation
C
D
PF

No designation
Z
E

No designation
I

Certifications of valve
No designation ATEX, IECEx
A IECEx for Australia and New Zealand
E EAC for EAEU* States

Surface treatment
zinc-coated (ZnNi),
ISO 9227 (520 h)

No designation
Seals
NBR

Manual override on pilot valve
No designation standard
N7 detent assembly
N9 without manual override

Cable length
No designation (only for DC) without cable
3 (AC and DC version) 3 m
8 (AC and DC version for request) 8 m

Temperature class - nominal input power of coil
A4 class T4 - 10 W
A6 class T6 (T5) - 10 W
B4 class T4 - 18 W**

**Coil B4 (18 W) available only in combination with spools J17 and J27

01200
02400
04800
11000

DC voltage
connection box + cable gland
12 V DC / 0.75 A
24 V DC / 0.39 A
48 V DC / 0.19 A
110 V DC / 0.094 A

11050
23050

AC voltage 50/60 Hz
fix installed cable
110 V AC / 0.112 A
230 V AC / 0.052 A

*EAEU= Eurasian Economic Union, certificate according to TR TS 012/2011 valid for the Russian Federation, Belarus, Armenia, Kazakhstan and Kyrgyzstan.

Installation Note:

- It is necessary to ensure minimum pilot pressure, therefore external piloting must be used for spools which have connection between P and T ports (H11, C11, R52, X52, J27).
- Attention: spools J17, J27 may assume an undefined position without energy supply.
- Other special versions are available. Consult our technical department.

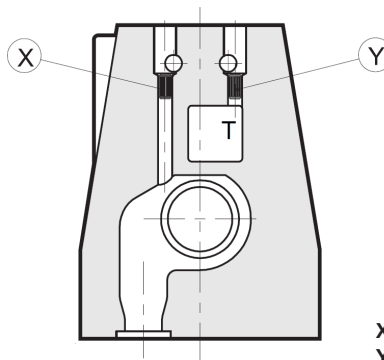
Spool Symbols

Three positions with centering spring		Two positions with return spring	
Z11		R51	
H11		R52	
Y11		X51	
C11		X52	
P11		Two positions with mechanical detent on pilot valve	
		J17	
		J27	

Pilot and Drain

The RNEXH valves are available with pilot and drain, both internal and external.

Type of valve		Plug assembly	
		X	Y
RNEXH1-10**/*	internal pilot and external drain	NO	YES
RNEXH1-10**/*I	internal pilot and internal drain	NO	NO
RNEXH1-10**/*E	external pilot and external drain	YES	YES
RNEXH1-10**/*EI	external pilot and internal drain	YES	NO



X: plug M5x6 for external pilot
Y: plug M5x6 for external drain

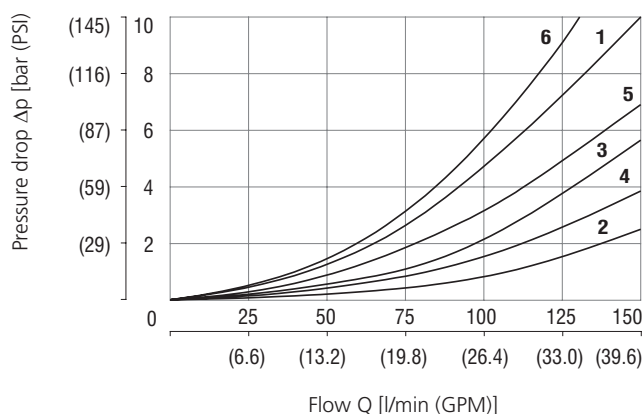
Characteristics measured at $v = 32 \text{ mm}^2/\text{s}$ (156 SUS)

Operating limits

Operating limits for maximum hydraulic power at rated temperature and supplied with voltage equal to 90 % of the nominal value

Maximum flow rates in l/min (GPM)	at pressure	
	210 bar (3050 PSI)	320 bar (4640 PSI)
Spool type C11	500 (133)	450 (119)
All other spools	600 (159)	500 (133)

Pressure drop related to flow rate



	Spool position	P-A	P-B	A-T	B-T	P-T		Spool position	P-A	P-B	A-T	B-T	P-T
Z11	Energized	1	1	2	3		J17, J27	Energized	1	1	4	3	
H11	De-energized					6*	R51, R52, X51, X52	De-energized	1			3	
	Energized	5	5	2	4			Energized		1	4		
Y11	De-energized			1**	1***		P11	De-energized					6***
	Energized	1	1	2	4			Energized	6	6	3	5	
C11	De-energized					6							
	Energized	6	6	3	5								

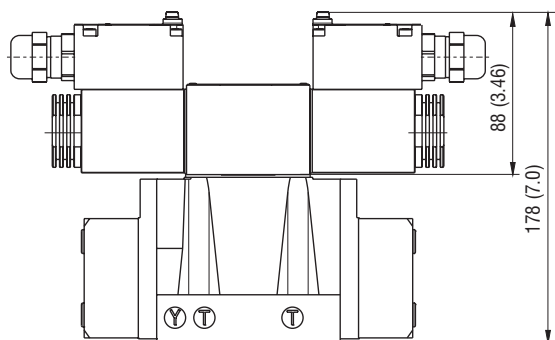
*A-B blocked **B blocked ***A blocked

For detail information on the pilot valve RPEX3-06 refer to data sheet No. 4054.

Actuation in millimeters (inches)

Solenoid control: RNEXH

The valve is supplied with an RPEX3-06 pilot solenoid valve.



The minimum piloting pressure can be as low as 5 bar at low flow rates, but with higher flow rates a pressure of 12 bar is needed.

If the valve operates with higher pressures it is necessary to use the version with external pilot and reduced pressure. Otherwise, the valve with internal pilot and a pressure reducing valve with a 30 bar fixed setting can be ordered.

Control Options - Special Features

Control of the main spool shifting speed: D

By placing a flow control valve between the pilot solenoid valve and the hydropiloted valve, the pilot flow rate can be controlled and therefore the shifting speed adjusted.
Add the letter **D** to the identification code to request this device.

Pilot pressure reducing valve - 30 bar fixed setting: Z

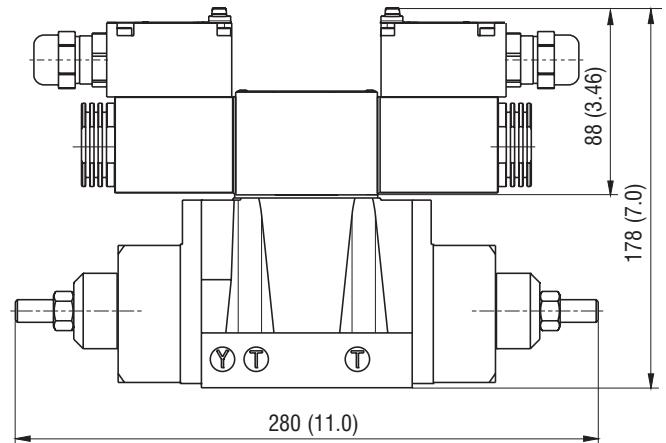
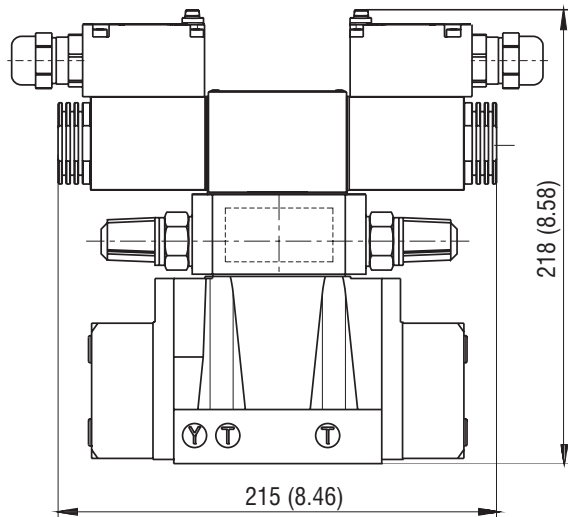
Internal piloting with mounted pressure reducing valve with 30 bar fixed setting.
The option **Z** may be used together with option **D**.

Control of the main spool stroke: C

Using special side plugs, it is possible to introduce stroke control the piloted valve so as to vary the maximum spool opening clearance. This solution allows the control of the flow rate from the pump to the actuator and from the actuator to the outlet, resulting in double adjustable control of the actuator. Add the letter **C** to the identification code to request this device.

Shifting speed control: PF

with an orifice (0.8 mm) in port P of the solenoid pilot valve
Add **PF** to the identification code to request this device

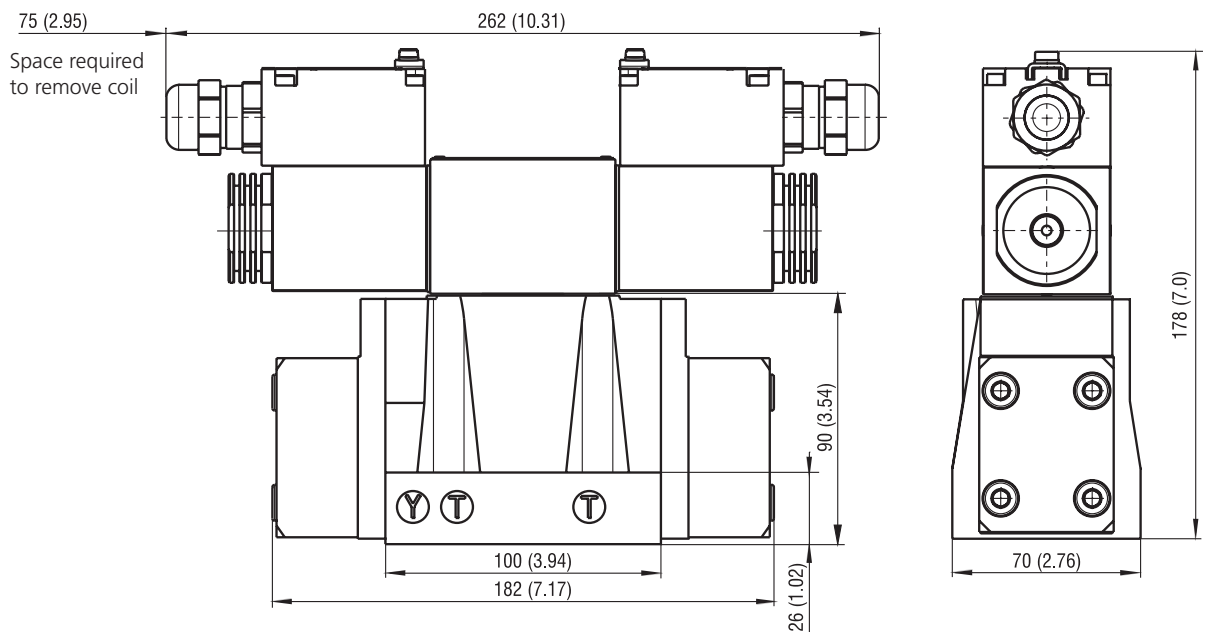


Solenoid operated distributor with pilot valve in the configuration 3H11

It is possible to deliver the solenoid operated distributor with the pilot valve in configuration 3H11 (all the ports at the outlet). This configuration is used with external piloting in order to allow the unloading of the piloting line when the solenoid operated valve is in the rest position. With this option, the piloting is necessarily external.

Dimensions in millimeters (inches)

RNEXH1-103



4x M6x35* (bolts A10.9) 12+1 Nm (8.9+0.7 lbf.ft)

mounting hole threads: M6 x 10

*bolts not supplied