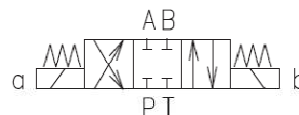


Rozdzielacze suwakowe płytowe		RPE3-06
NG06 / CETOP 3	Pmax 350bar	Qmax-80l/min

- ☐ 4/3-, 4/2- way directional control valves
- ☐ Solenoids can be turned around their axis to any position
- ☐ Four-land spool - reduced functional dependence on fluid viscosity
- ☐ Push button manual override
- ☐ Installation dimensions to DIN 24 340 / ISO 4401 / CETOP RP121-H
- ☐ Subplates see data sheet HA 0002
- ☐ CSA Upon request 



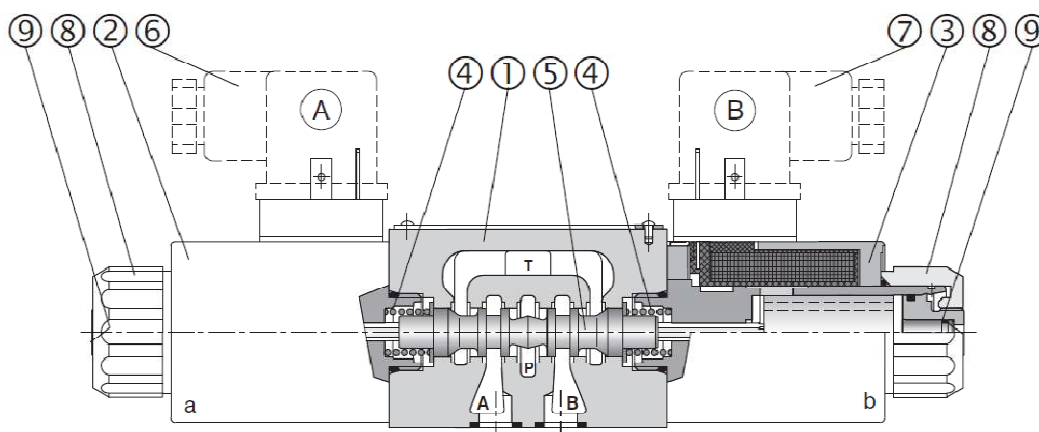
Functional Description

The RPE3 directional control valves consist of housing (1), a control spool (5) with two centering springs (4) and cylindrical operating solenoids (2, 3).

The three-position directional control valves are fitted with two solenoids and two springs. Two-position directional control valves have either one solenoid and one return spring or two solenoids and a detent assembly.

The operating solenoids are DC solenoids. For AC supply the solenoids are provided with a rectifiers which

are integrated in the DIN connector socket as part of the solenoid. The connectors (6, 7) can be turned by 90°. By loosening the nut (8), the solenoids can be turned or replaced without interfering with any seals of the valve. In the case of solenoid malfunction or power failure, the spool of the valve can be shifted by manual override (9), provided the pressure in T-port does not exceed 25 bar. The valve housing (1) is phosphate coated and the solenoids (2, 3) are zinc coated.



Ordering Code

RPE3-06				/							
Directional Control Valves Solenoid Operated											
Valve size											
Number of valve positions											
two positions		2									
three positions		3									
Spool symbols see the table spool symbols											
Rated supply voltage of solenoids (at the coil terminals)											
12 V DC / 2.72 A		01200									
24 V DC / 1.29 A		02400									
205 V DC / 0.15 A		20500									
230 V AC / 0.17 A / 50 (60) Hz		23050									
The AC coils correspond with E5 type											
CSA Upon request		CSA									
Type of solenoid coil											
with terminal for the connector, EN 1745301-803		E1									
with integrated quenching diode and terminal for the connector, EN 1745301-803		E2									
with AMP-Junior-Timer-connector		E3A									
with integrated quenching diode and terminal for AMP-Junior-Timer connector		E4A									
with integrated rectifier and terminal for the connector, EN 1745301-803		E5									
Other coils on demand see catalog HA8007											
Sensing of the end position											
no designation		without sensor									
S1		normally-open sensor to 50 bar (725PSI)									
S2		normally-open sensor to 210bar (3045 PSI)									
S4		normally-closed sensor to 50bar (725 PSI)									
Seals											
no designation		NBR									
V		FPM (Viton)									
Orifice in P port											
no designation		without orifice									
D1		Ø1.0 mm (0.039 inch)									
D2		Ø1.5 mm (0.059 inch)									
D3		Ø2.0 mm (0.079 inch)									
D4		Ø2.2 mm (0.087 inch)									
D5		Ø2.5 mm (0.098 inch)									
Soft Shift -											
Spool speed control orifice											
no designation		without damping									
T1		orifice Ø 0.7 mm (0.03 inch) in solenoid									
Manual override											
Standard											
covered with retaining nut											
covered with rubber boot											
with detent assembly											

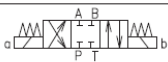
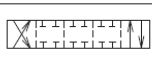
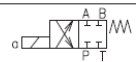
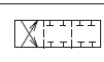
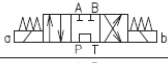
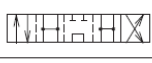
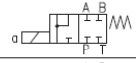
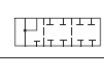
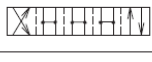
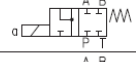
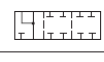
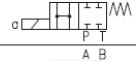
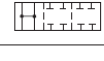
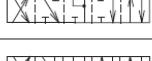
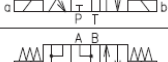
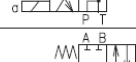
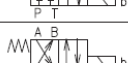
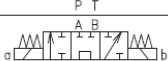
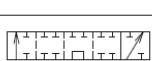
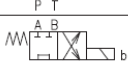
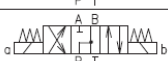
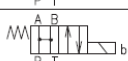
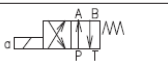
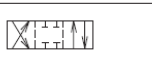
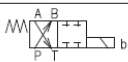
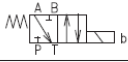
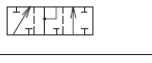
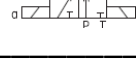
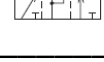
Note: Connector of the position sensor is **not supplied**
(see ordering number on page 10)

FOR PREFERRED TYPES SEE BOLD TYPING IN ORDERING CODE, FUNCTIONAL SYMBOLS
AND TABLE OF PREFERRED TYPES ON PAGE 10

Technical Data

Valve size	mm (US)	D 06 (03)	
Maximum flow	L/min (GPM)	see p-Q characteristics	
Max. operating pressure at porte P, A, B	bar (PSI)	standard 350 (5076), according to CSA® 320 bar (4641PSI)	
Max. operating pressure at port T	bar (PSI)	50 (725) for version S1, S4 and 210 (3000) for version S2	
Pressure drop	bar (PSI)	see Δp -Q characteristics	
Hydraulic fluid		Hydraulic oils of power classes (HL, HLP) to DIN 51524	
Fluid temperature range for NBR seals	°C (°F)	-30 ... +80 (-22 ... +176)	
Fluid temperature range for FPM seals	°C (°F)	-20 ... +80 (-4 ... +176)	
Ambient temperature max.	°C (°F)	+50 (+122)	
Viscosity range	mm ² /s (SUS)	20 ... 400 (98 ... 1840)	
Maximum degree of fluid contamination		Class 21/18/15 to ISO 4406	
Max. allowable voltage variation	%	DC: ± 10	AC: ± 10
Max. switching frequency	h ⁻¹	15 000	
Switching time, on: at $v=32 \text{ mm}^2 \cdot \text{s}^{-1}$ (156 SUS)	ms	DC: 30 ... 50	AC: 30 ... 40
Switching time, off: at $v=32 \text{ mm}^2 \cdot \text{s}^{-1}$ (156 SUS)	ms	DC: 10 ... 50	AC: 30 ... 70
Duty cycle	%	100	
Service life	cycles	10^7	
Enclosure type to EN 60 529		IP 65	
Weight - valve with 1 solenoid	kg (lbs)	1.6 (3.52)	
- valve with 2 solenoids		2.2 (4.84)	
Mounting position		unrestricted	

Spool Symbols

Type	Symbol	Crossover	Type	Symbol	Crossover
Z11			Z51		
C11			Z71		
H11			Z81		
P11			Z91		
Y11			R31		
L21			H51		
B11			F51		
Y41			Z11		
Z21			X11		
C41			C11		
F11			H11		
R11			K11		
R21			N11		
A51			F11		
P51			X25		
Y51			J15		
C51			J75		

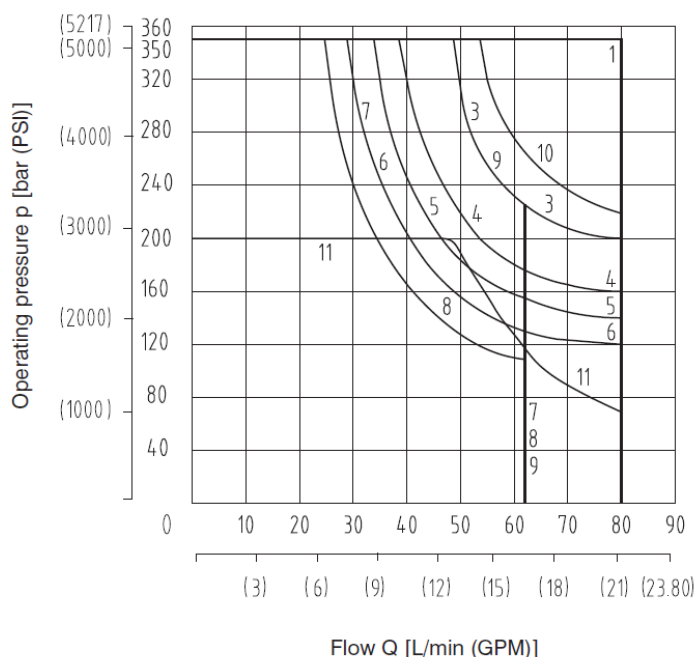
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p-Q Characteristics

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

Operating limits for maximum hydraulic power transferred by the directional valve.
For respective spool type - see spool symbols.

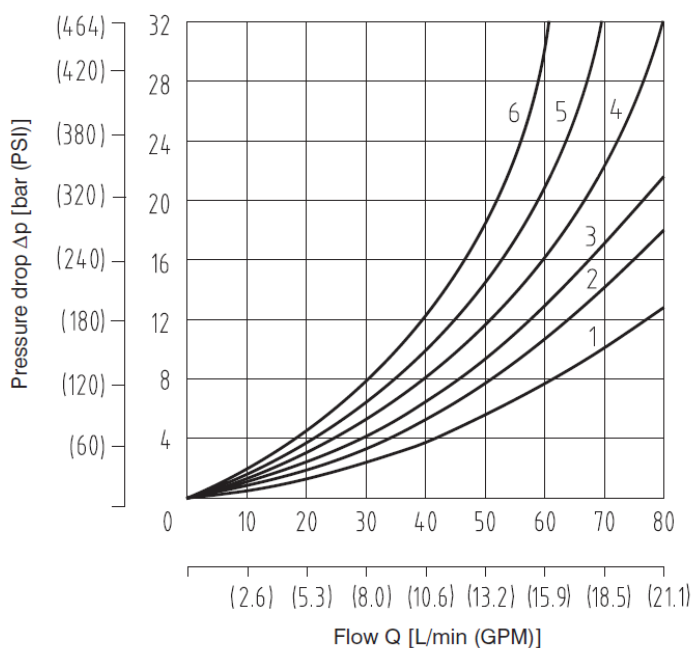


Z11	1
C11	7
H11	4
P11	1
Y11	3
L21	6
B11	9
Y41	7
Z21	1
C41	6
F11	6
R11	4
R21	5
A51	6
P51	1
Y51	3
C51	7
Z51	1
Z71	8
Z81	8
Z91	8
R31	6
H51	8
F51	8
X11	4
K11	8
N11	8
X25	11
J15	1
J75	10

Δp -Q Characteristics

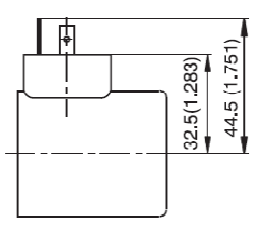
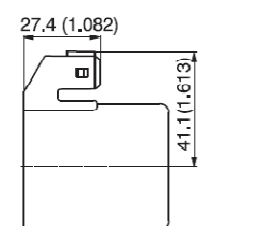
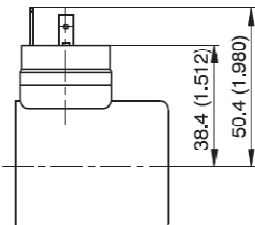
Measured at $v = 32 \text{ mm}^2/\text{s}$ (156 SUS)

Pressure drop Δp related to flow rate.

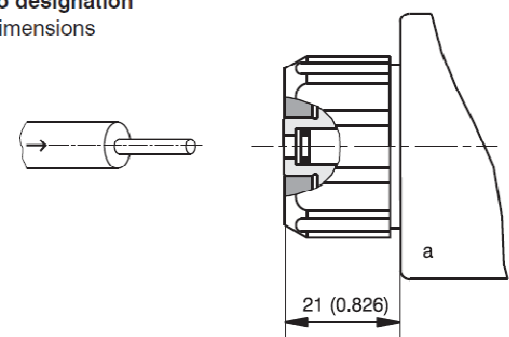
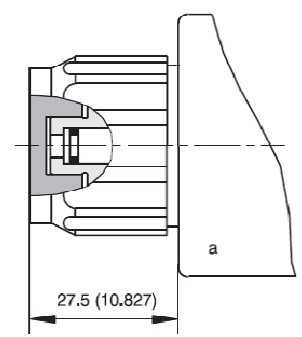
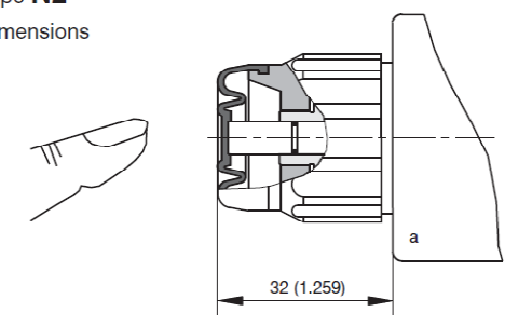
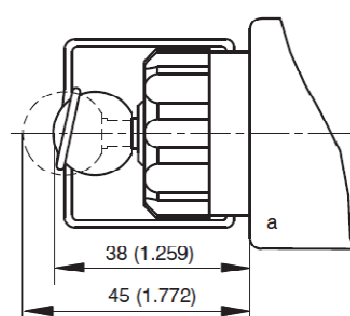


	P-A	P-B	A-T	B-T	P-T
Z11	2	2	3	3	
C11	5	5	5	6	3
H11	2	2	2	3	3
P11	1	1	3	3	
Y11	2	2	2	2	
L21	2	2	3	3	
B11	2	2	3	3	
Y41	3	3	3	3	
Z21		2	3		
C41	4	4			5
F11	1	2		3	3
R11	2	2	3	3	
R21	2	2	3	3	
A51	2	2			
P51		1	3		
Y51		2	2		
C51	2			3	4
Z51		2	3		
Z71	3	3			
Z81			3	3	
Z91	3			3	3
R31	2			3	
H51		2	3		
F51		2	3		
X11	2	2	3	3	
K11		2	3		
N11	2	2	3	3	
X25	3	3	3		
J15	2	2	3	3	
J75	2	2			

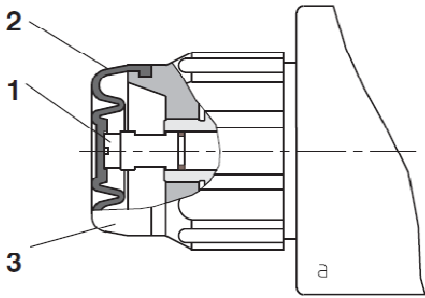
Type of the Solenoid Coil

Designation	Dimensional sketch	Description
E1		Solenoid coil with terminal for the electrical connector, EN 1745301-803.
E2		Solenoid coil with integrated quenching diode (bipolar transil diode) and terminal for the electrical connector, EN 1745301-803.
E3A		Solenoid coil with terminal for AMP-Junior-Timer electrical connector.
E4A		Solenoid coil with integrated quenching diode (bipolar transil diode) and terminal for AMP-Junior-Timer electrical connector.
E5		Solenoid coil with integrated rectifier and terminal for the electrical connector, EN 1745301-803.

Manual Override

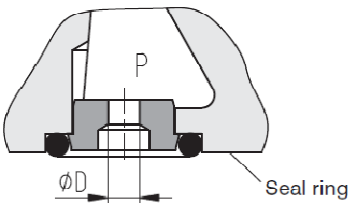
STANDARD	CLOSED NUT
no designation Dimensions  Standard model of the manual override. Standard retaining nut of the solenoid.	Type N1 Dimensions  Manual override with retaining nut. Can be used after removing nut.
RUBBER BOOT	DETENT ASSEMBLY
Type N2 Dimensions  Manual override protected by rubber boot.	Type N3 Dimensions  Manual override holds the spool in the shifted position.

Spool Speed Control Orifice

Type	Dimension	Description
T1		Important: This directional valve provides control spool soft shifting by means of orifice situated in the solenoid armature. To ensure the proper function of the valve, perfect air bleeding of the solenoid is required (by us of bleeding plug (1). The plugs are accessible after removing the rubber boot (2) from the solenoid retaining nut (3).
Switching times		
Switching time, on and off	ms	300 ... 800

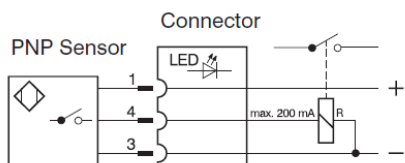
The switching times shown are valid for viscosity $\nu = 32 \text{ mm}^2/\text{s}$ (156 SUS) and nominal voltage. They are dependent upon working pressure and flow rate of the directional control valve

Orifice in P-Port

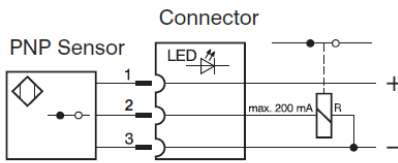
Type	ØD mm (inch)	Dimensions	Description
D1	1,0 (0.039)		P-port orifices limit the flow into the directional control valve. Attention: When the orifice in P port is additionally mounted the standard used square ring NBR is replaced with O-ring from Viton.
D2	1,5 (0.059)		
D3	2,0 (0.079)		
D4	2,0 (0.087)		
D5	2,0 (0.098)		

Spool Ship Position Sensor

S1, S2 - Circuit diagram of the normally-open sensor

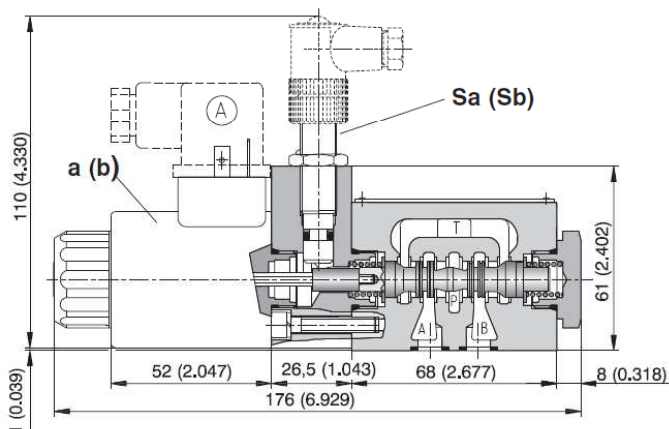


S4 - Circuit diagram of the normally-closed sensor

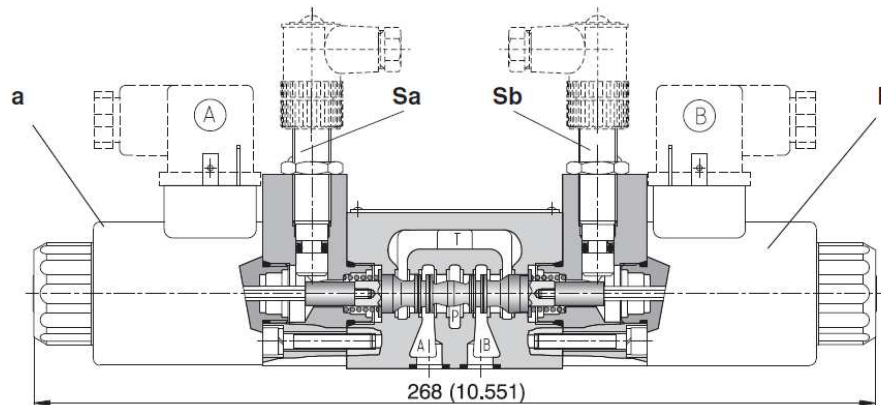


The proximity sensor transforms the spool position into an electrical step signal. It can be used with directional control valves with one or two solenoids.

Technical Data of the Sensor		S1, S4	S2	
Rated power supply voltage	V	24 DC		
Power supply voltage range	V	10 ... 30 DC		
Rated current	mA	200		
Enclosure type of sensor to EN 60529		IP 67		
Max. operating pressure	bar (PSI)	50 (725)	210 (3046)	
Switching frequency	Hz	1000		
Ambient temperature range	°C (°F)	-25 ... +80 (-13 ... +176)		
Technical Data of the Connector				
Power supply voltage range	V	10 ... 30 DC		
Ambient temperature range	°C (°F)	-25 ... +80 (-13 ... +176)		
Indication		yellow LED		
Two-Position Directional Control Valve		Dimensions in millimeters (inches)		
Signal of solenoid a (b)	Signal of sensor Sa (Sb)		LED	
	S1, S2 - normally-open	S4 - normally-closed	S1, S2	S4
0	1	0	ON	OFF
1	0	1	OFF	ON

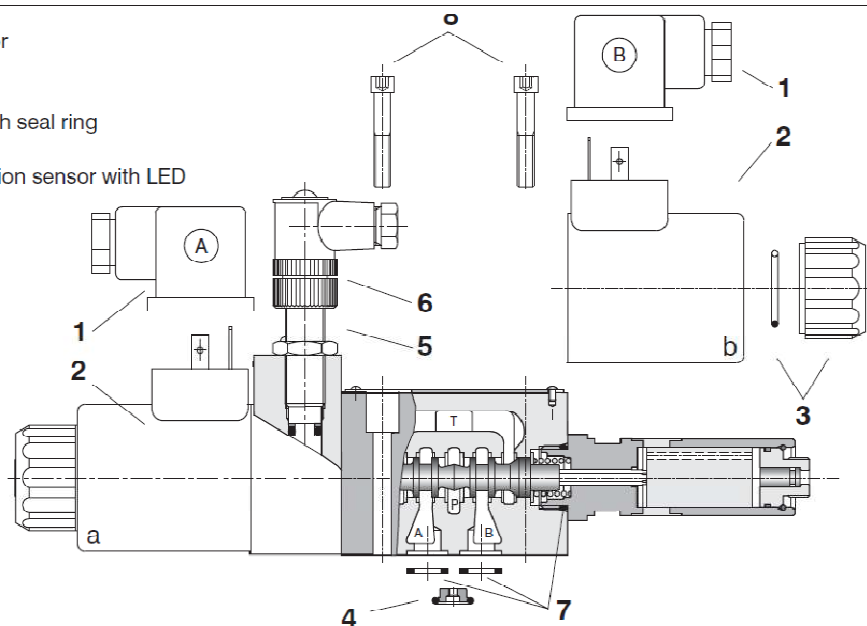


Three-Position Directional Control Valve				Dimensions in millimeters (inches)					
Signal of solenoid		Signal of sensor Sa (Sb)				LED			
		S1, S2 - normally-open		S4 - normally-closed		S1, S2		S4	
a	b	Sa	Sb	Sa	Sb	Sa - LED	Sb - LED	Sa - LED	Sb - LED
0	0	1	1	0	0	ON	ON	OFF	OFF
1	0	0	1	1	0	OFF	ON	ON	OFF



Spare Parts

- 1 Electrical connector
- 2 Solenoid coil
- 3 Nut with seal
- 4 Orifice in P port with seal ring
- 5 Sensor
- 6 Connector of position sensor with LED
- 7 Seal kit
- 8 Mounting bolts



Solenoid coil					
Solenoid type	Coil type				
	E1	E2	E3A	E4A	E5
	Order number				
01200	16211400	24156100	24159600	24159700	
01200*	24154300	-	-	-	
02400	-	24157400	24159800	24159900	
02400*	24154400				
20500	-				
23500					
23500*		18849000			
					24154600

*CSA Upon request

Solenoid retaining nut with seal		
Type of the nut	Seal ring	Order number
Standard nut	22 x 2	15844600
Closed nut		15844700
Nut with rubber boot		15844800
Nut with detent assembly		15844900

Connector of position sensor			
Type designation	Model	Max. input voltage	Ordering number
K02	connector of position sensor with LED	10...30 V DC	17364800
S1	normally-open sensor	10...30 V DC	16688500
S2	normally-open sensor	10...30 V DC	18838900
S4	normally-closed sensor	10...30 V DC	20725300

Orifice in P-port			
Type	ØD mm (inch)	Seal ring	Order number
D1	1,0 (0.039)	9.25 x 1.75	15845600
D2	1,5 (0.059)		15845700
D3	2,0 (0.079)		15845800
D4	2,2 (0.087)		15846000
D5	2,5 (0.098)		15845900

Bolt kit		
Dimensions, quantity	Bolt torque	Order number
M5 x 45 DIN 912-10.9 (4 pcs.)	8.9 Nm (6.6 ft-lbs)	15845100

Seal kit			
Type	Dimensions, quantity		Order number
Standard - NBR70	9,25 x 1,68 x 1,68 (4 pcs.)	17 x 1,8 (2 pcs.)	15845200
Viton	9,25 x 1,78 (4 pcs.)	17,17 x 1,78 (2 pcs.)	15845400

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Preferred Types of Valves

Type	Ordering Number	Type	Ordering Number
RPE3-062Z11/01200E1	15720300	RPE3-063Y11/02400E1	15728400
RPE3-063Z11/01200E1	15711300	RPE3-062R11/02400E1	15731100
RPE3-062Z51/01200E1	15719300	RPE3-062R21/02400E1	15734500
RPE3-063C11/01200E1	15712600	RPE3-062A51/02400E1	15732800
RPE3-062C51/01200E1	15719600	RPE3-062Y51/02400E1	15737400
RPE3-063H11/01200E1	15713500	RPE3-062J15/02400E1	15733500
RPE3-063Y11/01200E1	15714300	RPE3-062Z11/23050E5	15768800
RPE3-062R11/01200E1	15716000	RPE3-063Z11/23050E5	15747100
RPE3-062R21/01200E1	15717100	RPE3-062Z51/23050E5	21262800
RPE3-062A51/01200E1	15716700	RPE3-063C11/23050E5	15748900

Caution!

- When the distributor contains two electromagnets any of the two electromagnets can be switched on only after the other one switches off. The electromagnets switching time on distributors with locking arrangement must not be shorter than 60 ms. With directional valves with cushioned spool shifting, the switching time must correspond with the shifting time.
- Distributors with other interconnections than those shown in the catalogue can be supplied on request.
- The packaging foil can be recycled
- The transport base plate can be returned to the manufacturer.
- Mounting screws M5 x 45 DIN 912-10.9 or bolts must be ordered separately.
The screws tightening torque is 8.9 Nm (6.6 ft-lbs).
- The mentioned data only serve to describe the product and in no case are to be understood in terms of law as guaranteed characteristics.

Biuro Techniczno Handlowe Hydrotechnik Tomasz Szałas

25-040 Kielce ul. Pakosz 8 b

Tel. 41-361-02-87

Kom: 519-100-688

Email: biuro@hydrotechnik.pl

www.hydrotechnik.pl