HIDRAUTRONICA
SISTEMAS HIDRÁULICOS



PRODUCT OVERVIEW

INDUSTRIAL HYDRAULICS

DUPLOMATIC
MOTION SOLUTIONS
a member of DAIKIN group

MOVE MODERN

ABOUT THIS GUIDE

This guide is intended for a smart overview of our industrial hydraulics and let you find quickly the product you need.

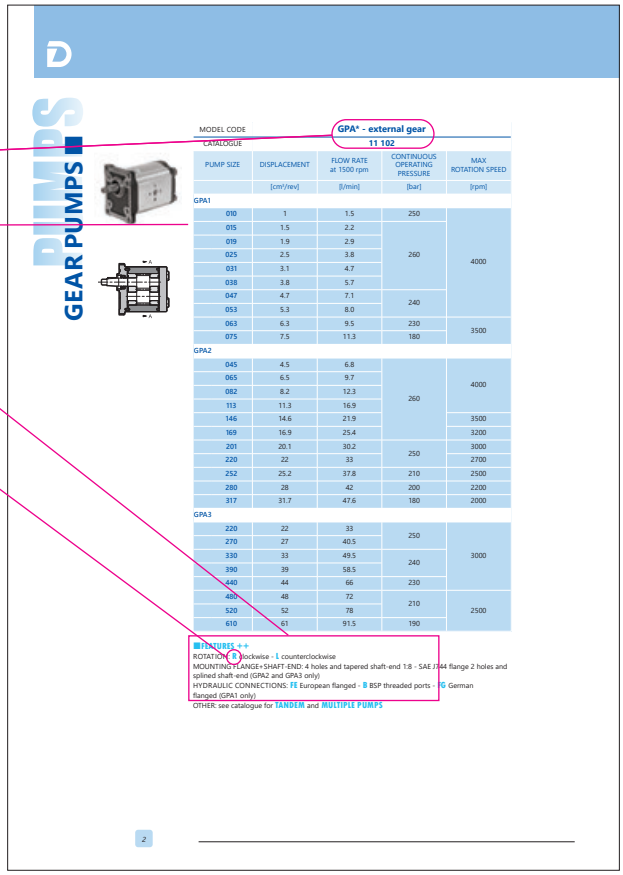
Data sheet ref.

Main characteristics, available versions and options are shown together for quick comparison.

A brief description of the features follows.

The highlighted letter that precedes the description is the same letter that identifies the option in the identification code, in the data sheet, for an easy reference.

Not all the options are available for all versions: always verify technical data, details and availability in the technical data sheet.



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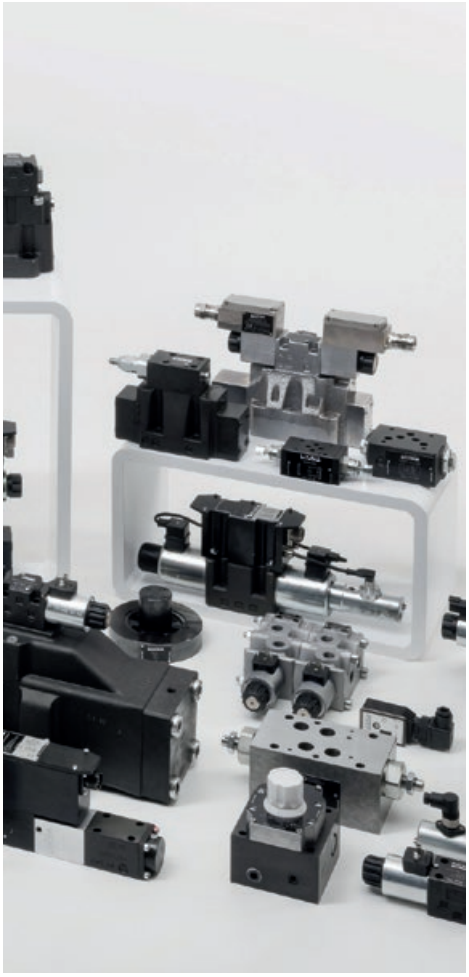
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HIDRAUTRONICA
SISTEMAS HIDRÁULICOS

INDUSTRIAL



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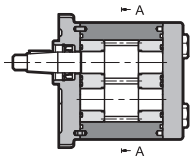
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MODEL CODE	GPA* - external gear			
CATALOGUE	11 102			
PUMP SIZE	DISPLACEMENT	FLOW RATE at 1500 rpm	CONTINUOUS OPERATING PRESSURE	MAX ROTATION SPEED
	[cm³/rev]	[l/min]	[bar]	[rpm]
GPA1				
010	1	1.5	250	4000
015	1.5	2.2	260	
019	1.9	2.9		
025	2.5	3.8		
031	3.1	4.7		
038	3.8	5.7		
047	4.7	7.1	240	
053	5.3	8.0		
063	6.3	9.5	230	3500
075	7.5	11.3	180	
GPA2				
045	4.5	6.8	260	4000
065	6.5	9.7		
082	8.2	12.3		
113	11.3	16.9		
146	14.6	21.9		3500
169	16.9	25.4		3200
201	20.1	30.2	250	3000
220	22	33		2700
252	25.2	37.8	210	2500
280	28	42	200	2200
317	31.7	47.6	180	2000
GPA3				
220	22	33	250	3000
270	27	40.5		
330	33	49.5	240	
390	39	58.5		
440	44	66	230	
480	48	72	210	2500
520	52	78		
610	61	91.5	190	

FEATURES ++

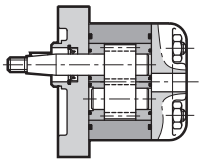
ROTATION: **R** clockwise - **L** counterclockwise

MOUNTING FLANGE+SHAFT-END: 4 holes and tapered shaft-end 1:8 - SAE J744 flange 2 holes and splined shaft-end (GPA2 and GPA3 only)

HYDRAULIC CONNECTIONS: **FE** European flanged - **B** BSP threaded ports - **FG** German flanged (GPA1 only)

OTHER: see catalogue for **TANDEM** and **MULTIPLE PUMPS**



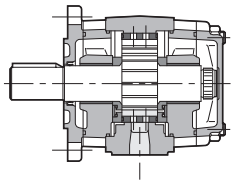


MODEL CODE	1P - external gear			
CATALOGUE	11 110			
PUMP SIZE	DISPLACEMENT	MAX FLOW RATE at 1500 rpm	MAX OPERATING PRESSURE	MAX ROTATION SPEED
	[cm³/rev]	[l/min]	[bar]	[rpm]
1P				
1,6	1.1	1.6	230	6000
2	1.3	2.0		
2,5	1.6	2.4		
3,3	2.1	3.2		
4,2	2.7	4.0		
5	3.2	4.8	210	5000
5,8	3.7	5.6		4500
6,7	4.2	6.4		4000
7,5	4.8	7.2	190	3500
9,2	5.8	8.7		3000
11,5	8.0	11.9	160	2100

FEATURES ++

ROTATION: clockwise. MOUNTING FLANGE: rectangular shape 4 holes. SHAFT END: tapered keyed
HYDRAULIC CONNECTIONS: BSP threaded





MODEL CODE	IGP* - internal gear			
CATALOGUE	12 100			
PUMP SIZE	DISPLACEMENT	MAX FLOW RATE at 1500 rpm	MAX OPERATING PRESSURE	MAX ROTATION SPEED
	[cm³/rev]	[l/min]	[bar]	[rpm]
IGP3				
003	3.6	5.4	330	3600
005	5.2	7.8		
006	6.4	9.6		
008	8.2	12.3		
010	10.2	15.3		
IGP4				
013	13.3	19.9	330	3600
016	15.8	23.7		3400
020	20.7	31.0		3200
025	25.4	38.1	300	3000
032	32.6	48.9	250	2800
IGP5				
032	33.1	49.6	315	3000
040	41.0	61.5		2800
050	50.3	75.4	280	2500
064	64.9	97.3	230	2200
IGP6				
064	64.1	96.1	300	2600
080	80.7	121.0	280	2400
100	101.3	151.9	250	2100
125	126.2	189.3	210	1800
IGP7				
125	125.8	188.7	300	2200
160	160.8	241.2	280	2000
200	202.7	304.0	250	1800
250	251.7	377.5	210	

FEATURES ++

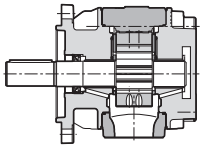
ROTATION: **R** clockwise - **L** counterclockwise

MOUNTING FLANGE: **0** SAE 2 - **1** SAE 4 (IGP7 only). SHAFT END: cylindrical keyed

HYDRAULIC CONNECTIONS: flanged SAE J518 c code 61

OTHER: see catalogue for **DOUBLE PUMPS**



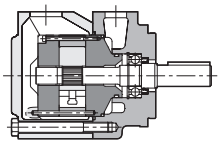


MODEL CODE	IGS* - internal gear					
CATALOGUE	12 110					
PUMP SIZE	DISPLACEMENT	MAX FLOW RATE at 1500 rpm	RATED PRESSURE	MAX PEAK PRESSURE	MAX ROTATION SPEED	MIN ROTATION SPEED
	[cm³/rev]	[l/min]	[bar]	[bar]	[rpm]	[rpm]
IGS2						
008	8.2	12.3	315	350	3000	400
010	10.2	15.3				
013	13.3	20.0				
016	16.0	24.0				
020	20.0	30.0	250	300		
IGS3						
025	25.3	38.0	315	350	3000	200
032	32.7	49.1				
040	40.1	60.2				
050	50.7	76.1				
063	63.7	95.6	250	300		
IGS5						
080	81.4	122.1	315	350	3000	200
100	100.2	150.3				
125	125.3	188.0				
145	145.2	217.8	250	280		
162	162.8	244.2	210	260		

FEATURES ++

ROTATION: **R** clockwise - **L** counterclockwise
MOUNTING FLANGE: SAE 2. SHAFT END: cylindrical keyed - splined shaft upon request
HYDRAULIC CONNECTION: flanged SAE J518 c
OTHER: see catalogue for **DOUBLE PUMPS**



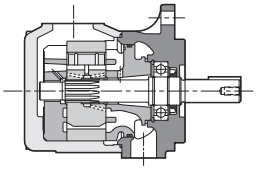


MODEL CODE	DF* - fixed displacement			
CATALOGUE	13 100			
PUMP SIZE	DISPLACEMENT	MAX FLOW RATE at 1500 rpm	MAX OPERATING PRESSURE	MAX ROTATION SPEED
	[cm³/rev]	[l/min]	[bar]	[rpm]
DFP1				
05	18.0	26.1	210	1800
08	27.4	39.4		
11	36.4	52.6		
12	39.5	58.7	160	
14	45.9	69.6	140	
DFP2				
12	40.1	58.8	175	1800
14	45.4	65.7		
17	55.2	80.2		
19	60.1	88.7		
21	67.5	99.8		
DFP3				
21	69.0	101.4	175	1800
25	81.6	120.1		
30	97.7	121.4		
35	112.7	167.2		
38	121.6	177.3		
DFP4				
42	138.6	203.4	175	1800
47	153.5	222.7		
50	162.2	234.0		
57	183.4	267.0		
60	193.4	185.0		

FEATURES ++

TYPE: **P** single pump - **DP** double pump - **C** cartridge for single pump or front pump - **CC** cartridge for rear pump
ROTATION: **R** clockwise - **L** counterclockwise
MOUNTING FLANGE: SAE J744
SHAFT END: cylindrical keyed. Other upon request
HYDRAULIC CONNECTIONS: SAE J518 flanged.
OTHER: see catalogue for **OUTLET PORTS POSITION**





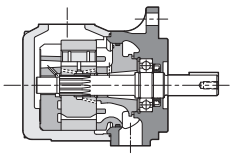
MODEL CODE	FV6 - fixed displacement			
CATALOGUE	13 110			
PUMP SIZE	DISPLACEMENT	MAX FLOW RATE at 1500 rpm	MAX OPERATING PRESSURE	MAX ROTATION SPEED
	[cm³/rev]	[l/min]	[bar]	[rpm]
FV6C				
03	10.8	16.2	240	2800
05	17.2	25.8		
06	21.3	31.9		
08	26.4	39.6		
10	34.1	51.1		
12	37.1	55.6		
14	46.0	69.0		
17	58.3	87.4		
20	63.8	95.7		
22	70.3	105.4		
25	79.3	118.9		2500
28	88.8	133.2	160	
31	100.0	150.0		
FV6D				
14	47.6	71.4	210	2500
17	58.2	87.3		
20	66.0	99.0		
24	79.5	119.3		
28	89.7	134.6		
31	98.3	147.5		
35	111.0	166.5		
38	120.3	180.5		
42	136.0	204.0		2200
45	145.7	218.6		
50	158.0	237.0	160	
FV6E				
42	132.3	198.5	210	2200
45	142.4	213.6		
50	158.5	237.8		
52	164.8	247.2		
57	179.8	269.6		
62	196.7	295.1		
66	213.3	320.0		
72	227.1	340.0		
85	269.0	403.0	80	2000

FEATURES ++

PUMP SIZE: **C** from 10.8 to 100 cm³/rev - **D** from 47.6 to 158 cm³/rev - **E** from 132.3 to 269 cm³/rev
ROTATION: **R** clockwise - **L** counterclockwise
MOUNTING FLANGE: SAE B J744, SAE C J744
SHAFT END: cylindrical keyed SAE, non-SAE, involute spline SAE, non-SAE. See catalogue.
HYDRAULIC CONNECTIONS: SAE J518 flanged.

FV6, FV67 DOUBLE AND TRIPLE pumps available.



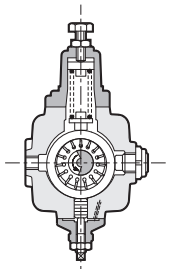


MODEL CODE	FV7*S - fixed displacement			
CATALOGUE	13 120			
PUMP SIZE	DISPLACEMENT	MAX FLOW RATE at 1500 rpm	MAX OPERATING PRESSURE	MAX ROTATION SPEED
	[cm³/rev]	[l/min]	[bar]	[rpm]
FV7BS				
02	5.8	8.7	320	3600
03	9.8	14.7		
04	12.8	19.2		
05	15.9	23.9		
06	19.8	29.7		
07	22.5	33.8		
08	24.9	37.4		
10	31.8	47.7		
12	41.0	61.5	275	3000
15	50.0	75.0	240	
FV7DS				
14	44.0	66.0	250	3000
17	55.0	82.5		
20	66.0	99.0		
22	70.3	105.5		
24	81.1	121.7		
28	90.0	135.0		
31	99.2	148.8		
35	113.4	170.1		2800
38	120.6	180.9		
42	137.5	206.3	230	2500

FEATURES ++

PUMP SIZE: **B** from 5.8 to 50 cm³/rev - **D** from 44 to 137.5 cm³/rev
ROTATION: **R** clockwise - **L** counterclockwise; MOUNTING FLANGE: SAE B J744, SAE C J744,
SHAFT END: cylindrical keyed SAE, non SAE, involute spline SAE. See catalogue.
HYDRAULIC CONNECTIONS: SAE J518 flanged.



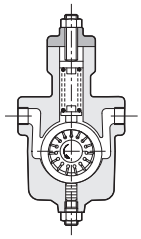


MODEL CODE	RV1D - direct variable displacement			
CATALOGUE	14 101			
PUMP SIZE	DISPLACEMENT	MAX FLOW RATE at 1500 rpm	MAX OPERATING PRESSURE	MAX ROTATION SPEED
	[cm³/rev]	[l/min]	[bar]	[rpm]
RV1D				
016	17.0	25.5	120	1800
020	21.0	31.5	100	
025	26.0	39.0		
032	33.0	49.5		
040	42.0	63.0	100	1500
050	51.0	76.5		
063	63.0	94.5		
080	80.0	120.0	90	
100	100.0	150.0		
120	123.0	184.5		

FEATURES ++

ROTATION: clockwise. MOUNTING: **5** 4-holes ISO 3019/2 - **9** 4-holes rectangular type (for RV1D-016 only).
SHAFT END: **5** cylindrical keyed - **7** conical keyed
HYDRAULIC CONNECTIONS: **B** BSP threaded - **S** SAE flange
PRESSURE COMPENSATOR: mechanical, direct
See catalogue for **MULTIPLE PUMPS**



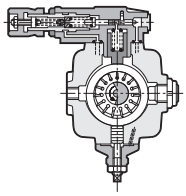


MODEL CODE	PVE - direct variable displacement			
CATALOGUE	14 110			
PUMP SIZE	DISPLACEMENT	MAX FLOW RATE at 1800 rpm	MAX OPERATING PRESSURE	MAX ROTATION SPEED
	[cm³/rev]	[l/min]	[bar]	[rpm]
PVE				
006	6.6	12.0	70	1800
011	11.1	20.0		
016	16.6	30.0		
023	22.2	40.0		

FEATURES ++

ROTATION: clockwise. MOUNTING FLANGE: **9** rectangular shape 4 holes - **0** SAE J744 2 holes
SHAFT END: cylindrical keyed SAE-J744. HYDRAULIC CONNECTIONS: BSPP threaded
PRESSURE COMPENSATOR: mechanical, direct. **PC2** up to 35 bar - **PC3** up to 70 bar



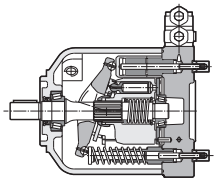


MODEL CODE	RV1P - variable displacement, hydraulic op. compensator			
CATALOGUE	14 201			
PUMP SIZE	DISPLACEMENT	FLOW RATE at 1500 rpm	MAX OPERATING PRESSURE	MAX ROTATION SPEED
	[cm³/rev]	[l/min]	[bar]	[rpm]
RV1P				
016	17.0	25.5	250	1800
020	21.0	31.5		
025	26.0	39.0		
032	33.0	49.5		
040	42.0	63.0		1500
050	51.0	76.5		
063	63.0	94.5		
080	80.0	120.0		
100	100.0	150.0		
120	123.0	184.5	210	

FEATURES ++

ROTATION: clockwise.
MOUNTING FLANGE: **5** 4 bolts ISO 3019/2 - **7** 4 holes rectangular type (for RV1P-016 only)
SHAFT END: **5** cylindrical keyed - **9** conical keyed.
HYDRAULIC CONNECTIONS: **B** BSP threaded - **S** SAE flange
PRESSURE COMPENSATOR: **PC** hydraulic pressure control - **PCX** dual pressure, one of which is fixed
See catalogue for **MULTIPLE PUMPS**





MODEL CODE	VPPM - medium pressure			
CATALOGUE	16 100			
PUMP SIZE	MAX DISPLACEMENT	FLOW RATE at 1500 rpm	MAX OPERATING PRESSURE	MAX ROTATION SPEED
	[cm³/rev]	[l/min]	[bar]	[rpm]
VPPM				
029	29	43.5	280	3000
046	46	69.0		2600
073	73	109.5		2200
087	87	131.9	250	1850

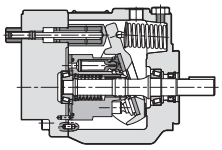
FEATURES ++

ROTATION: **R** clockwise - **L** counterclockwise
MOUNTING FLANGE: **5** ISO 3019/2 - **0** SAE J744 2 holes
SHAFT END: **5** cylindrical keyed ISO 3019-2 - **0** cylindrical keyed SAE J744 - **1** SAE J744 splined
HYDRAULIC CONNECTIONS: **S** SAE flange w. metric bolts suction/delivery, drainage BSP threaded
T SAE flange w. UNF bolts suction/delivery, drainage UNF threaded

CONTROLS: **PC** pressure - **PCR** remote pressure control - **PCX** with external pressure control devices - **PQC** pressure and flow rate -**PQCE5** integrated proportional flow and pressure control **PQNC** power - **PQNCE5** power, with integrated proportional flow and pressure control

OTHER: see catalogue for **MULTIPLE PUMPS**



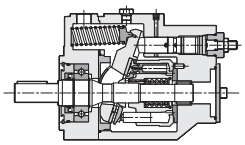


MODEL CODE	VPPD - medium pressure				
CATALOGUE	16 150				
PUMP SIZE	MAX DISPLACEMENT	FLOW RATE at 1500 rpm	MAX OPERATING PRESSURE	MAX ROTATION SPEED	MIN ROTATION SPEED
	[cm³/rev]	[l/min]	[bar]	[rpm]	[rpm]
VPPD					
015	14.8	22.2	210	1800	500
023	23.0	34.5	250		
038	37.7	56.6	250		

FEATURES ++

ROTATION: **R** clockwise - **L** counterclockwise on request
MOUNTING FLANGE: SAE J744 2 holes
SHAFT END: cylindrical keyed
HYDRAULIC CONNECTIONS: **B** BSPP threaded
CONTROLS: **PC** pressure - **PCR** remote pressure - **PQC** pressure and flow rate





MODEL CODE	VPPL - low-medium pressure			
CATALOGUE	16 200			
PUMP SIZE	MAX DISPLACEMENT	FLOW RATE at 1500 rpm	MAX OPERATING PRESSURE	MAX ROTATION SPEED
	[cm³/rev]	[l/min]	[bar]	[rpm]
VPPL				
008	8	12	210	2000
016	16	24		
022	22	33		
036	36	54		
046	46	69		
070	70	105	280	1800
100	100	150		

FEATURES ++

ROTATION: clockwise
MOUNTING FLANGE: **0** SAE-2 (VPPL 008, 016, 022, 036, 046) - **1** SAE-4 (VPPL 070, 100)
SHAFT END: cylindrical keyed SAE-J744
HYDRAULIC CONNECTIONS: **S** SAE flange w. metric bolts suction/delivery, drainage BSP threaded
B BSP threaded ports (VPPL-008 only)

CONTROLS: **PC5**, **PC6** pressure - **PCR** remote pressure control - **PCX5**, **PCX6** with external pressure control devices - **PQC** pressure and flow rate





MODEL CODE	HPR - high pressure			
CATALOGUE	16 300			
PUMP SIZE	MAX DISPLACEMENT	FLOW RATE at 1500 rpm	MAX OPERATING PRESSURE	MAX ROTATION SPEED
	[cm³/rev]	[l/min]	[bar]	[rpm]
HPR				
055	55.0	82.5	420	2700
075	75.9	113.9		2500
105	105.0	157.5		2500
135	135.7	203.5		2350
165	165.6	248.2		2200
210	210.1	315.5		2100
280	281.9	422.9		2000

FEATURES ++

ROTATION: **R** clockwise
MOUNTING FLANGE: SAE J744 2 holes; SAE J744 4 holes for HPR210 and 280
SHAFT END: SAE J744 splined
HYDRAULIC CONNECTIONS: flange fittings - SAE 3000 suction / SAE 6000 pressure
POWER TAKE-OFF: **A00** SAE A flange, no shaft coupling (single pump, std).
See catalogue for power take-off / through drive shaft available couplings.

CONTROLS: **LP6** load sensing w. pressure cut-off - **TL2** load sensing w. power control (HPR105, 135, 210 and 280 only) - **ET6** continuous displacement control w.power limiter and pressure cut-off (HPR105, 135, 210 and 280 only) **D12K2** or **D24K2** available coils.







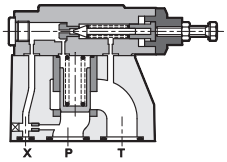
MODEL CODE	CD1-W	RM2-W	RM3-W	RQ5-W	RQM5-W	RQ7-W	RQM7-W
CATALOGUE	21 200	21 210	21 210	21 220	21 230	21 220	21 230
SIZE (ND)	6	8	10	15		25	
port THREAD	1/4" NPT	3/8" BSP	1/2" BSP	P: 3/4" BSP	T: 1" BSP	P: 1 1/4" BSP	T: 1 1/2" BSP
TYPE	piloting	relief	relief	relief	relief venting	relief	relief venting
p max	350 bar						
Q max	3 l/min	50 l/min	75 l/min	250 l/min		400 l/min	
PRESSURE ADJ. RANGE							
up to 70 bar	■	■	■	■	■	■	■
up to 140 bar	■	■	■				
up to 210 bar	■	■	■	■	■	■	■
up to 350 bar	■	■	■	■	■	■	■

■ FEATURES ++

VENTING TYPE: **A**, **B**, **C**, **D**, **G** (RQM* only)
OPTIONS: **M** adjustment knob; **CM** boot (RQM* only)
COILS: power supply **DC** 12V, 24V, 48V, 110V, 220V; **AC** 12V, 24V, 48V, 110V, 220V; F110, F220 - DIN 43650 connector







MODEL CODE	RQ3-P	RQM3-P	RQ5-P	RQM5-P	RQ7-P	RQM7-P
CATALOGUE	21 300	21 310	21 300	21 310	21 300	21 310
SIZE (ND)	10		25		32	
SIZE ISO 6264	06		08		10	
TYPE	relief	relief venting	relief	relief venting	relief	relief venting
p max	350 bar					
Q max	200 l/min		400 l/min		500 l/min	

■ FEATURES ++

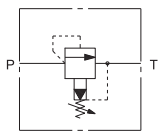
EXPLOSION PROOF **RQM*K*-P** see catalogue 21 515
VENTING TYPE: **A**, **B**, **C**, **D**, **G** (RQM* only)
COILS: power supply **DC** 12V, 24V, 48V, 110V, 220V; **AC** 12V, 24V, 48V, 110V, 220V; F110, F220 - DIN 43650 connector
PRESSURE ADJ. RANGE: **3** up to 70 bar - **5** up to 210 bar - **7** up to 350 bar
OPTIONS: **M** adjustment knob; **CM** boot (solenoid op. only)

■ VENTING TYPE

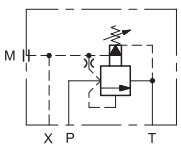
A venting with de-energized solenoid - **B** venting with energized solenoid
C two pressure settings, highest with energized solenoid - **D** two pressure settings, venting with de-energized solenoid
G three pressure settings, highest with de-energized solenoid

■ SYMBOLS

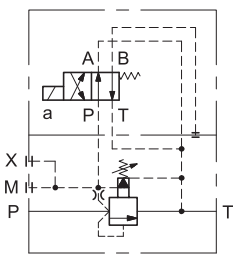
RM*



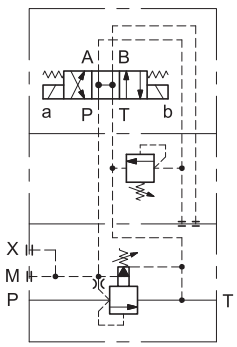
RQ*



RQM*-W - venting A



RQM*-W - venting D







MODEL CODE	MRQA MRQA/C	RQR3-P	RQRM3-P	RQR5-P RQA5-P	RQRM5-P RQAM5-P	RQR7-P RQA7-P	RQRM7-P RQAM7-P
CATALOGUE	21 400	21 410	21 420	21 410	21 420	21 410	21 420
SIZE (ND)	6	10		25		32	
SIZE ISO 6264	03	06		08		10	
TYPE	unloading	unloading	unloading + venting	unloading	unloading + venting	unloading	unloading + venting
p max	350 bar						
Q max	40 l/min	200 l/min		400 l/min		500 l/min	
PRESSURE ADJ. RANGE							
up to 70 bar	■	■	■	■	■	■	■
up to 210 bar	■	■	■	■	■	■	■
up to 280 bar	■	■	■	■	■	■	■

■ VERSIONS

R remote piloting - **A** or **/C** embedded check valve (with subplate - non ISO mounting)

■ FEATURES++

PUMP SWITCH: **1** 75% of set value - **2** 63% of set value (no MRQA)
OPTIONS: **I** internal drainage (RQ*M-P only) - **M** adjustment knob - **CM** boot (solenoid op. only)
COILS: power supply **DC** 12V, 24V, 48V, 110V, 220V; **AC** 12V, 24V, 48V, 110V, 220V; F110, F220 - DIN 43650 connector

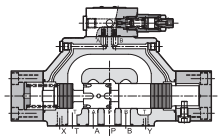




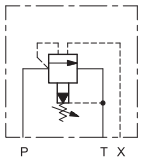
MODEL CODE	Z3-P	Z5-P	ZC2	DZC5 DZC5R	DZC7	DZC8
CATALOGUE	22 300	22 300	24 300	24 310	24 310	24 310
SIZE (ND)			6	10	16	25
SIZE (ISO)	5781-06	5781-08	5781-03	P05, 4401-05	4401-07	4401-08
TYPE	reducing 2-way	reducing 2-way	reducing + relieving	reducing + relieving	reducing + relieving	reducing + relieving
p max	250 bar		350 bar			
Q max	40 l/min	110 l/min	25 l/min	150 l/min	300 l/min	500 l/min
PRESSURE ADJ. RANGE						
up to 70 bar			■	■	■	■
up to 140 bar			■	■	■	■
up to 210 bar	■	■	■	■	■	■
up to 280 bar				■	■	■

■ FEATURES++

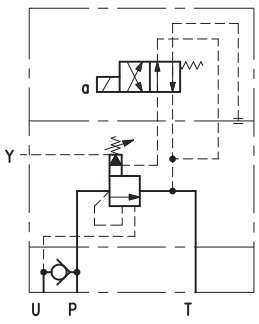
Z*-P OPTIONS: **R** reduced drainage - **C** check valve U→E w. cracking pressure 0.5 bar
DZC* OPTIONS: **I** internal pilot/drain - **E** external pilot/drain - **K** adjustment knob



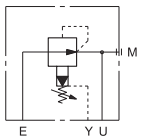
RQR*-P



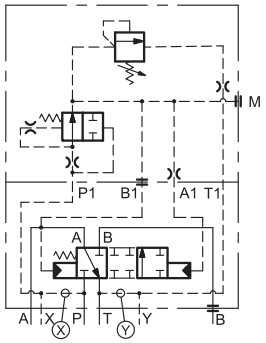
RQAM*-P



Z*-P

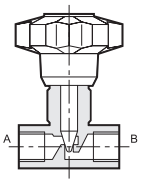


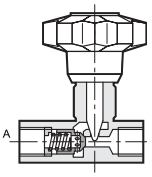
DZC*





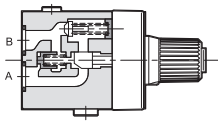
MODEL CODE	RS* - throttle						
CATALOGUE	31 200						
SIZE	2	3	4	5	6	7	8
port THREAD	1/4" BSP	3/8" BSP	1/2" BSP	3/4" BSP	1" BSP	1 1/4" BSP	1 1/2" BSP
TYPE	throttle						
p max	400				320		
Q nom	15	30	50	80	150	200	220



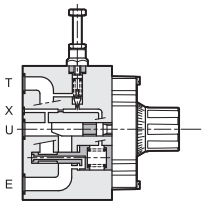


MODEL CODE	RSN* - throttle check						
CATALOGUE	31 210						
SIZE	2	3	4	5	6	7	8
port THREAD	1/4" BSP	3/8" BSP	1/2" BSP	3/4" BSP	1" BSP	1 1/4" BSP	1 1/2" BSP
TYPE	throttle check						
p max	400				320		
Q nom	15	30	50	80	150	200	220
Q free max	35	80	150	200	300	400	500









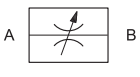
MODEL CODE	RPC1	RPC1-T3	RPC2	RPC2-T3	RPC3	RPC3-T3
CATALOGUE	32 200	32 250	32 300	32 350	32 300	32 350
SIZE (ND)	6		10		16	
SIZE ISO 6263	03		06		07	
TYPE	2-way pressure and temperature compensated	3-way pressure and temperature compensated	2-way pressure and temperature compensated	3-way pressure and temperature compensated	2-way pressure and temperature compensated	3-way pressure and temperature compensated
p max	250		320		250	
Δp	10 bar	12 bar	10 bar		12 bar	
Q min contr.	0.025 l/min	0.035 l/min	0.05 l/min	0.06 l/min	0.12 l/min	0.13 l/min
CONTROLLED FLOW						
0.5	■					
1; 4; 10; 16	■	■				
22	■	■	■			
30	■					
38			■			
50				■		
70			■			
100					■	
150					■	■

■FEATURES ++

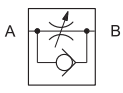
RPC*: **C** check valve - **X** check valve + anti-surge pilot signal (RPC1 only) - **M** single turn knob - **RC** compensating stroke governor (RPC2 and RPC3)
RPC*-T3: **Q** pressure relief valve 10 ÷ 210 bar (RPC2-T3 and RPC3-T3) - **M** single turn knob

■SYMBOLS

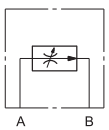
RS*



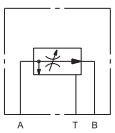
RSN*



RPC*



RPC*-T3





MODEL CODE		PLK08	CR	CRQ	PRK10	DBV	PCK06
CATALOGUE		21 090	21 100	21 110	21 111	21 120	21 140
	seat type	SAE 08	D-10E	D-10C	SAE 10	D-10E	D-10D
	port THREAD	3/4-16 UNF-2B	ø20.6	ø20.6	7/8-14 UNF-2B	M30 x 1.5	ø20.6
	TYPE	direct	direct	pilot	pilot	direct	compensator
	p max	400	350	350	350	380	350
	Q max	3	50	100	120	120	40

PRESSURE ADJ. RANGES

PLK08: **035** up to 35 bar - **070** up to 70 bar - **140** up to 140 bar - **210** up to 210 bar - **280** up to 280 bar - **350** up to 350 bar
CR: **2** up to 25 bar - **3** up to 70 bar - **4** up to 140 bar - **5** up to 210 bar - **6** up to 350 bar
CRQ: **3** up to 70 bar - **4** up to 140 bar - **5** up to 210 bar - **6** up to 350 bar
PRK10: **070** 10 ÷ 70 bar - **140** 10 ÷ 140 bar - **210** 10 ÷ 210 bar - **350** 10 ÷ 350 bar
DBV: **035** up to 35 bar - **050** up to 50 bar - **080** up to 80 bar - **100** up to 100 bar - **160** up to 160 bar
200 up to 200 bar - **250** up to 250 bar - **300** up to 300 bar
PCK06: **P** two-way - **PT** three-way - **V** variable adjustment 7 ÷ 33 - **4** fixed adj. 4 bar - **8** fixed adj. 8 bar



MODEL CODE		RS*-I - throttle				
CATALOGUE		31 200				
	SIZE (ND)	2	3	4	5	6
	port THREAD	M20x1.5	M20x1.5	M27x2	M33x2	M42x2
	TYPE	throttle				
	p max	320				
	Q nom	15	30	50	80	150

MODEL CODE		RSN*-I - throttle check			
CATALOGUE		31 210			
	SIZE (ND)	2	3	4	5
	port THREAD	M20x1.5	M27x2	M33x2	M42x2
	TYPE	throttle check			
	p max	320			
	Q nom	15	30	50	80
	Q free max	35	80	150	200

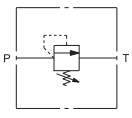


MODEL CODE		VR2-I	VR5-I	VR7-I	VSK1	VSK2	KT08	KT10	KT12
CATALOGUE		45 100			45 110		43 105		
	type	screw-in			slip-in	screw-in	SAE 08	SAE 10	SAE 12
	port THREAD	1/4"	3/4"	1" 1/4	ø11.75 mm	M12x1	3/4-16 UNF-2A	7/8-14 UNF-2A	1 1/16-12 UN-2A
	TYPE	check valve			shuttle		solenoid, poppet		
	p max	320	250	250	350		350		
	Q max	50	150	300	20	3	40	80	150

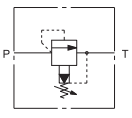
FEATURES ++

VR*-I CRACKING PRESSURE: **1** 0.5 bar - **3** 5 bar - **4** 10 bar
KT08: INITIAL POSITION: **NO** normally open - **NC** normally closed. SEALS: **S** standard - **R** reverse - **D** double.
Electrical options same as DL3 valve, see DIRECTIONAL VALVES.

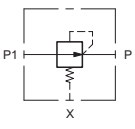
CR*, DBV



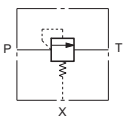
PRK10



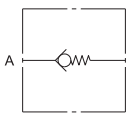
PCK06-P*



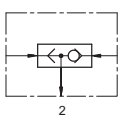
PCK06-PT*



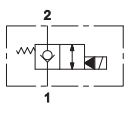
VR*I



VSK*



KT08-2NC

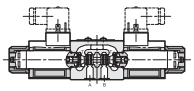


DIRECTIONAL VALVES
SOLENOID - DIRECT OPERATED









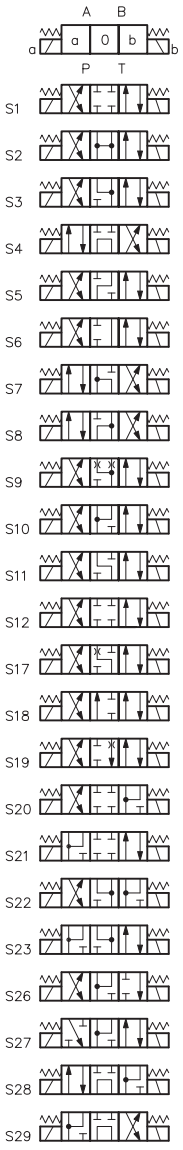
MODEL CODE	DS2	DS3	DS3L	DS3GL	DL3	DS5	DL5	DL5B
CATALOGUE	41 110	41 150	41 152	41 153	41 211	41 310	41 330	41 335
SIZE	04	06				10		
ISO 4401 / CETOP	02	03				05		
TYPE	Standard	Standard	8W Energy saving	Digital interface	Compact version	Standard	Compact version	Compact version
p max	350 bar	350 bar	280 bar	350 bar	280 bar	350 bar	320 bar	320 bar
Q max	25 l/min	100 l/min	60 l/min	80 l/min	50 l/min	150 l/min	125 l/min	125 l/min
SPOOLS								
S1; S2; S3; S4	■	■	■	■	■	■	■	■
S5; S6; S7; S8		■		■		■		
S9 to S29		■				■		
SA*; SB*	■	■	■	■	■	■	■	■
RSA*; RSB*		■						
TA; TB	■	■	■	■	■	■	■	■
TA/TB 02; TA/TB 23		■		■	■	■	■	■
TA/TB 30; TA/TB 33		■						
RK	■	■	■	■	■	■	■	■
RK1; RK02; 1RK		■		■		■		
COIL TYPE								
D12	■	■		■	■	■	■	■
D14		■						
D24	■	■	■	■	■	■	■	■
D26						■		
D28		■			■			■
D48		■			■			
D110; D125; D220		■			■	■		
A24; A48; A110; A230		■			■	■	■	
F110; F220		■				■		
CONNECTIONS								
K1	■	■	■		■	■	■	■
K2	■	■			■			■
K4					■			
K7	■	■			■	■		■
K7D (diode)		■			■			
K8					■			
K12 (M12 5 pin male)				■				
K12D5 (M12x1 5 pin)			■					
MANUAL OVERRIDES								
CM	■	■	■	■	■	■	■	■
CH; CH1		■						
CP		■		■				■
CK; CK1 ; CK2	■	■		■	■	■		■
CPK		■		■				■

■FEATURES ++

MONITORED: **M** - see dedicated section at page 22
EXPLOSION PROOF: **DSE3K*** and **DL5BK*** - see catalogue 41 515
EXTERNAL DRAIN **Y** available for ISO 4401-05 sizes
ALTERNATIVE SURFACE FINISHING: **W7** Zinc-nickel (salt spray resistance up to 600 hours)
DS3 SPECIAL VERSIONS: **F**, **S** soft-shift - **UL** certified coils - **R** fixing screws as 4WE6*6X Rexroth
DS3GL FUNCTIONS: **IOL** IO-Link interface - **EC1**, **EC2** operated by digital command signal from PLC.

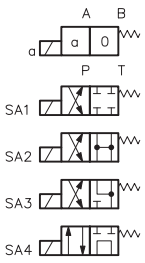
S*

2 solenoids
3 positions
spring centering



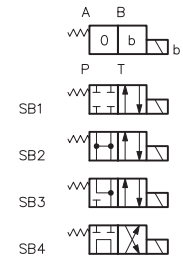
SA*

1 solenoid side A
2 positions
(central + external)
with spring return



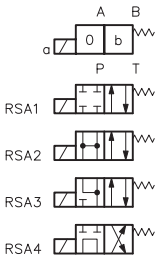
SB*

1 solenoid side B
2 positions
(central + external)
with spring return



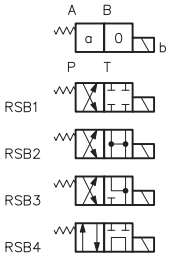
RSA*

1 solenoid side A
2 positions
(external + central)
with spring return



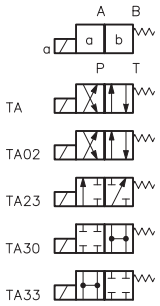
RSB*

1 solenoid side B
2 positions
(external + central)
with spring return



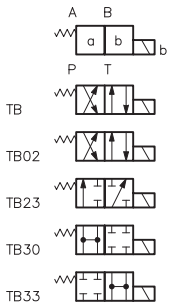
TA*

1 solenoid side A
2 external positions
with spring return



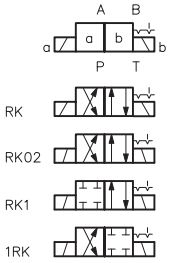
TB*

1 solenoid side B
2 external positions
with spring return



RK

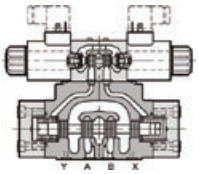
2 solenoids
2 positions
with detent



DIRECTIONAL VALVES
SOLENOID - PILOT OPERATED







MODEL CODE	DSP5	DSP7	DSP8	DSP10	DSP11
CATALOGUE	41 410	41 420	41 430	41 440	41 440
SIZE (ND)	10	16	25	32	35
CETOP	05, R05	07	08	10	10+
ISO 4401	05	07	08	10	10+
TYPE	solenoid	solenoid	solenoid	solenoid	solenoid
p max	350 bar	350 bar	350 bar	350 bar	320 bar
p max high pressure vers.	420 bar	420 bar	420 bar	420 bar	-
Q max	150 l/min	300 l/min	600 l/min	1100 l/min	1600 l/min
SPOOLS					
S1; S2; S3; S4	■	■	■	■	■
S6 to S12	■	■	■		
S20; S21	■	■	■		
SA1; SB1	■	■	■	■	■
SA2; SB2 to SA4; SB4	■	■	■	■	■
TA; TB;	■	■	■	■	■
TA02; TB02	■	■	■	■	■
TA23; TB23	■	■	■		
RK; RK02; RK002	■	■	■	■	■
COIL TYPE					
D12; D24	■	■	■	■	■
D48; D110; D220	■	■	■	■	■
A24; A48; A110; A230	■	■	■	■	■
F110; F220	■	■	■	■	■
COIL CONNECTIONS					
K1	■	■	■	■	■
K2	■	■	■		
K7 (D12 and D24 coil)	■	■	■		
MANUAL OVERRIDE					
CM	■	■	■	■	■

■ VERSIONS

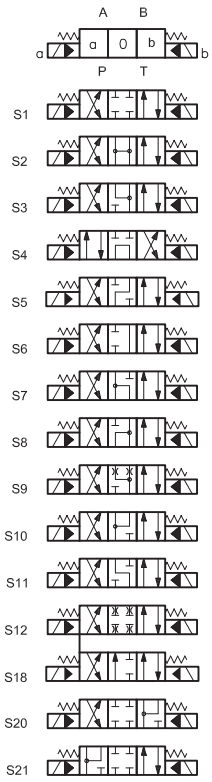
MONITORED **M** - see dedicated section at page 22
EXPLOSION PROOF **DSP*K*** - see catalogue 41 515
HYDRAULIC OPERATED VERSIONS **C** described in the valves datasheets
HIGH PRESSURE VERSION **H**

■ FEATURES ++

PILOT / DRAIN: **I** internal - **Z** internal with pressure reducing - **C** internal with built-in backpressure valve -**E** external (always verify application cases in the valve datasheet)
OPTIONS: **C** stroke limiter - **D** shifting speed control - **C - D** stroke + shifting control - **P***, **PF** restrictor subplate - **S2** Pilot stage with S2 spool (available only with pilot supply E)
ALTERNATIVE SURFACE FINISHING **W7** Zinc-nickel (salt spray resistance up to 600 hours)

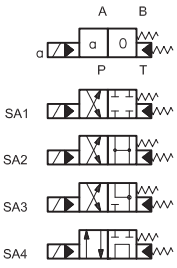
S*

2 solenoids
3 positions
spring centering



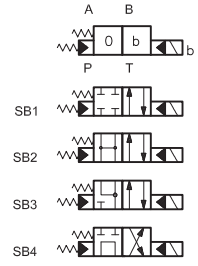
SA*

1 solenoid side A
2 positions
(central + external)
with spring return



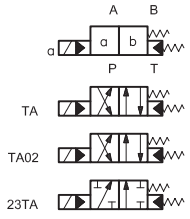
SB*

1 solenoid side B
2 positions
(central + external)
with spring return



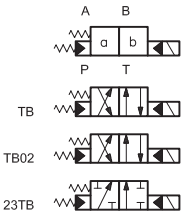
TA*

1 solenoid side A
2 external positions
with spring return



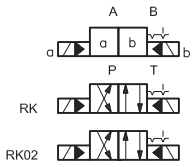
TB*

1 solenoid side B
2 external positions
with spring return



RK

2 solenoids
2 positions
with detent











MODEL CODE	DSH3	DSH3L	DSR3L DSR3H	DSA3	DSC3	DSH5	DSA5	DSC5
CATALOGUE	41 600	41 605	41 610	41 620	41 630	41 600	41 620	41 630
SIZE (ND)	06					10		
CETOP	03	03				05		
ISO 4401	03	03				05		
TYPE	lever	lever compact	roller cam	air	hydraulic	lever	air	hydraulic
p max	350 bar	350 bar				320 bar		
Q nom	75 l/min	60 l/min	75 l/min	75 l/min	75 l/min	150 l/min	120 l/min	150 l/min
SPOOLS								
S1; S2; S3; S4	■	■		■	■	■	■	■
S5 to S23				■			■	
SA1; SA2; SA3; SA4	■			■	■	■	■	■
SB1; SB2; SB3; SB4				■	■		■	■
TA	■	■	■	■	■	■	■	■
TA02, TA23	■			■	■		■	
TB				■	■		■	■
TB02, TB23				■	■		■	
TAK	■	■				■		
TAK02, TAK23	■							
SK1; SK2; SK3; SK4	■	■				■		
SAK1 to SAK4	■					■		
R			■					
RK				■	■		■	■
RK1, RK02; 1RK				■			■	

FEATURES ++

DSR3 VERSIONS: **L** compact - **H** heavy duty - **R** two roller (DSR3L only)

ALTERNATIVE SURFACE FINISHING: **W7** Zinc-nickel (salt spray resistance up to 600 hours)



MODEL CODE	ECA	ECB1	ECB2	ECD	ECD1	ECH
CATALOGUE	49 000					
TYPE	EN 175301-803:2006 form A (ex DIN 43650)					
version	2 poles + GND	2 poles + GND + LED (led ON = energized)		bridge rectifier		RC damping circuit
supply	AC/DC	AC/DC		AC		AC/DC
voltage	up to 230 V	10 to 50 V	70 to 250 V	up to 230 V		up to 230 V
coil type	AC or DC	AC or DC	AC or DC	DC fed w. AC		AC or DC

FEATURES ++

ECA COLOR : **B** black - **A** gray



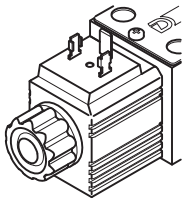
MODEL CODE	ECF
CATALOGUE	49 310
TYPE	rapid energizing
plug	EN 175301-803 connector
power supply	24 to 30 V DC
max current	6A

For 12 and 24V DC coils

DIRECTIONAL VALVES
COIL CONNECTIONS
MANUAL OVERRIDES

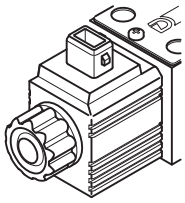
K1

DIN 43650
(standard)



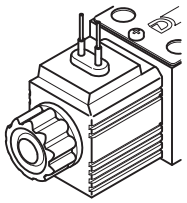
K2

AMP Junior



K4

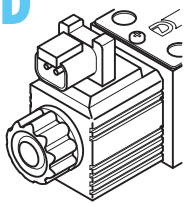
outgoing cables



K7, K7D

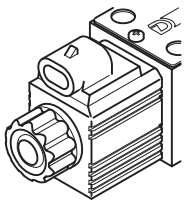
for male connector
DEUTSCH DT06-2S

K7D with internal
diode to avoid
voltage peaks



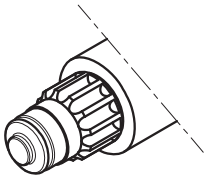
K8

AMP Super Seal



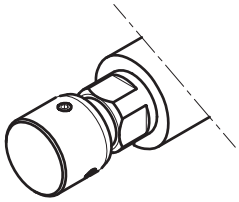
CM

Boot



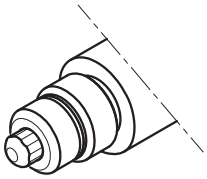
CK1

Tuning knob,
DC valves only



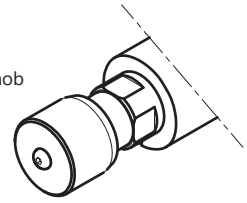
CP

Push
DC valves only



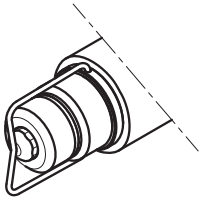
CK2

Twist and lock knob
DC valves only



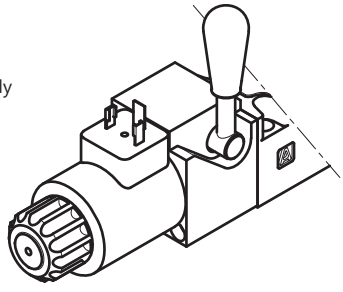
CPK

Push with detent
DC valves only



CH

Lever
DC valves only

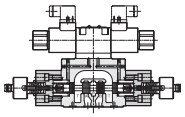


MODEL CODE	DS3M	DS5M	DSP5M DSP5RM	DSP7M	DSP8M	DSP10M
CATALOGUE	41 505					
SIZE	6	10		16	25	32
CETOP	03	05	P05, R05	07	08	10
ISO 4401	03	05	05	07	08	10
TYPE	direct op.	direct op.	pilot op.	pilot op.	pilot op.	pilot op.
p max	350 bar	320 bar		350 bar	350 bar	350 bar
Q max	80 l/min	120 l/min	150 l/min	300 l/min	600 l/min	1100 l/min







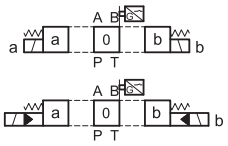


FEATURES ++

The compliance of these valves with the CE safety requirements has been verified by TÜV Sud.
COIL TYPE: **D12** 12V DC - **D24** 24V DC - **D110** 110V DC - **D220** 220V DC; **K1** DIN 43650 connection
SENSOR SUPPLY VOLTAGE: 24V or **12** 12V (available for monitored positions type M* only)

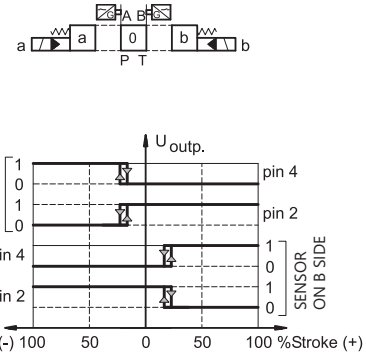
RO

1 sensor
central position monitored
spools: **S***



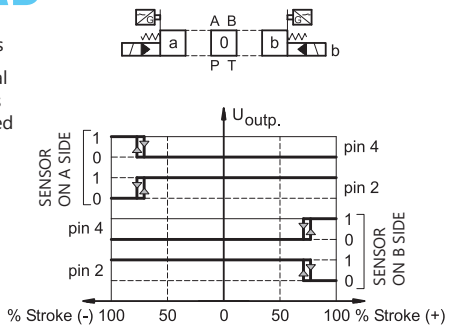
MO

2 sensors
central position monitored
spools: **S***

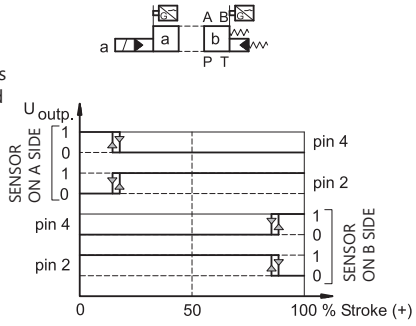


MAB

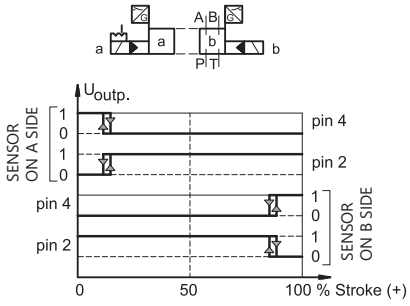
2 sensors
2 external positions monitored
spools: **S***



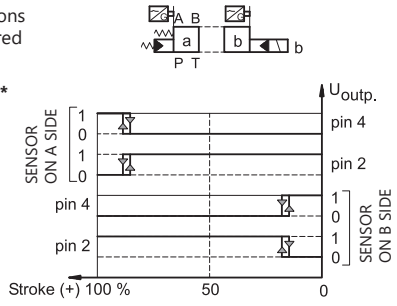
2 positions monitored
spools: **SA*, TA***



2 positions monitored
spools: **RK**



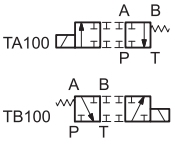
2 positions monitored
spools: **SB*, TB***



AVAILABLE SPOOLS/MONITORED POSITIONS

	S*	SA* SB*	TA TA100	TA02	TB TB100	TB02	RK
DS3M							
R0	■						
MA		■	■	■	■		
MB		■	■	■	■		
DS5M							
R0	■						
MA		■	■	■	■	■	
MB		■	■	■	■	■	
DSP*M							
R0	■						
MA		■	■		■		■
MB		■	■		■		■
M0	■						
MAB	■	■	■		■		■

SPECIALS



Refer to the 'solenoid operated' section for standard spools, and to the 41505 datasheet for the range of available spools.

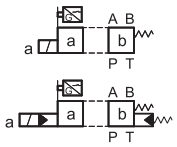
NOTE: For DSP10M, monitor positions R0 or M0 are limited to spool S1.

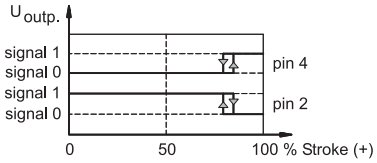
MA

1 sensor

spools:
SA*, TA*

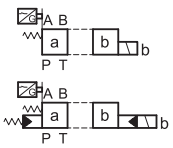
actuated position monitored

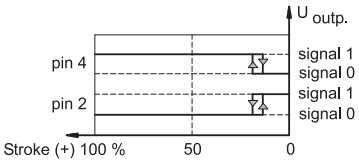




spools:
SB*, TB*

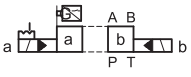
initial position monitored

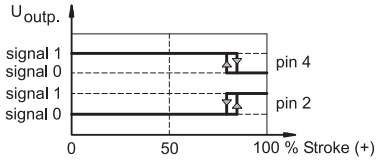




spools: **RK**

'A' position monitored



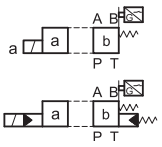


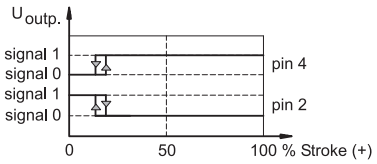
MB

1 sensor

spools:
SA*, TA*

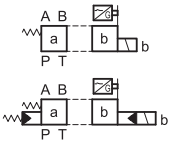
initial position monitored

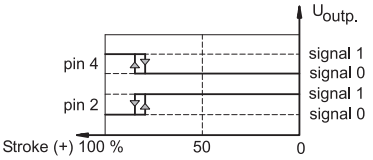




spools:
SB*, TB*

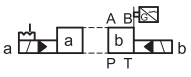
actuated position monitored

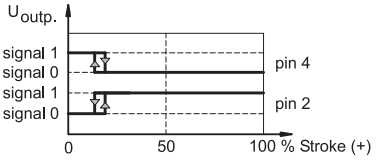




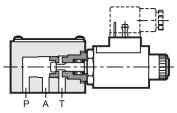
spools: **RK**

'B' position monitored







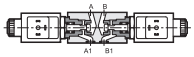


MODEL CODE	DT03-3A	DT03-3B	DT03-3C	DT03-3D	DT03-2E	DT03-2F	DT03-2G	DT03-2H
CATALOGUE	42 200							
Size (ISO)	4401-03							
TYPE	subplate mounting, 3-way solenoid operated				subplate mounting, 2-way solenoid operated			
p max	250 bar							
Q max	12 l/min	25 l/min	25 l/min	25 l/min	25 l/min	12 l/min	25 l/min	25 l/min

FEATURES ++

SUPPLY VOLTAGES: direct current **12V-CC** 12 V - **24V-CC** 24 V; alternating current **24RAC** 24 V - **110RAC** 110V - **220RAC** 220 V
RESTRICTORS PLUG ON P LINE: **D08** orifice Ø0.8 - **D10** orifice Ø1
EXPLOSION PROOF **DT3K*-3**** - see catalogue 42 215





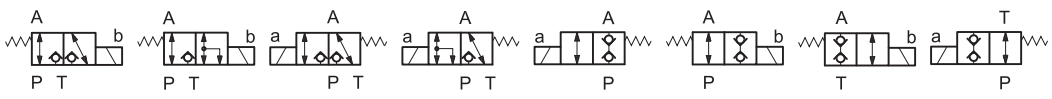
MODEL CODE	MDT-SA	MDT-SB	MDT-D
CATALOGUE	42 250		
Size (ISO)	4401-03		
TYPE	modular version		
p max	250 bar		
Q max	25 l/min	25 l/min	25 l/min

FEATURES ++

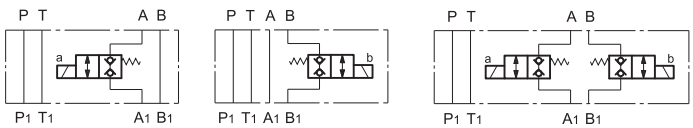
SUPPLY VOLTAGES: direct current **12V-CC** 12 V - **24V-CC** 24 V; alternating current **110RAC** 110V - **220RAC** 220 V

SYMBOLS

DT03-3A DT03-3B DT03-3C DT03-3D DT03-2E DT03-2F DT03-2G DT03-2H



MDT-SA MDT-SB MDT-D





MODEL CODE	VD*-W							
CATALOGUE	45 200							
*	2	3	4	5	6	7	8	9
port THREAD	1/4" BSP	3/8" BSP	1/2" BSP	3/4" BSP	1" BSP	1 1/4" BSP	1 1/2" BSP	2" BSP
TYPE	check							
p max	400 bar				320 bar			
Q nom	25 l/min	40 l/min	75 l/min	125 l/min	200 l/min	280 l/min	650 l/min	850 l/min

FEATURES ++

CRACKING PRESSURE: **1** 0.35 bar - **2** 2 bar - **T4** 4 bar - **3** 6 bar - **4** 10 bar





MODEL CODE	VR3-P	VR5-P	VR7-P	VP3-P*-MU	VP5-P*-MU
CATALOGUE	45 300			46 300	
port dimensions	3/8" BSP	3/4" BSP	1" 1/4 BSP	ISO 5781-06	ISO 5781-08
TYPE	check			p.o. check	
p max	350 bar	350 bar	250 bar	320 bar	320 bar
Q max	100 l/min	200 l/min	400 l/min	50 l/min	100 l/min

VR*P FEATURES ++

CRACKING PRESSURE : **1** 0.5 bar - **3** 5 bar - **4** 10 bar

VP*-P*-MU FEATURES ++

CRACKING PRESSURE: **2** 3.5 bar - **3** 5 bar

OPTION: **P** decompression device



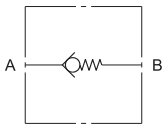
MODEL CODE	CFP-S*						
CATALOGUE	46 400						
*	032	040	050	063	080	100	125
Size (ND)	32	40	50	63	80	100	125
TYPE	filling valves						
p max	350 bar						
Q max	160 l/min	250 l/min	400 l/min	600 l/min	1000 l/min	1600 l/min	2500 l/min

FEATURES ++

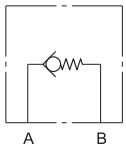
OPTION: **0** without pre-opening - **P** with pre-opening (not available for ND 125)

SYMBOLS

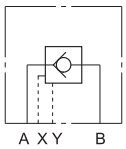
VD*-W



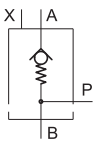
VR*-P



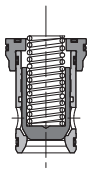
VP*-P*-MU



CFP-S*







MODEL CODE	LC*					
CATALOGUE	48 900					
SIZE (ND)	16	25	32	40	50	63
TYPE	ISO 7368 slip-in cartridge valves					
p max	420					
Q max QS	250 l/min	500 l/min	900 l/min	1300 l/min	2000 l/min	3000 l/min
Q max QD	200 l/min	450 l/min	800 l/min	1100 l/min	1700 l/min	2700 l/min
Q max PS	200 l/min	400 l/min	900 l/min	1000 l/min	1500 l/min	2500 l/min
TYPE						
QS0.5	■	■	■	■	■	
QS2	■	■	■	■	■	■
QD4	■	■	■	■	■	
PS1						■
PS2	■	■	■	■	■	

VERSIONS

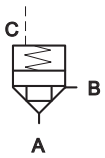
QS flow control (1:1.66) - **QD** flow control with damping nose (1:1.66) - **PS** pressure control (1:1)

FEATURES ++

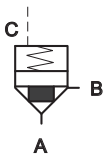
CRACKING PRESSURE: **0.5** 0.5 bar - **1** 1 bar - **2** 2 bar - **4** 4 bar
OPTIONS: **LL** low leakage (not available for QS 0.5 and LC16-PS*)

SYMBOLS

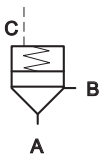
LC*QS



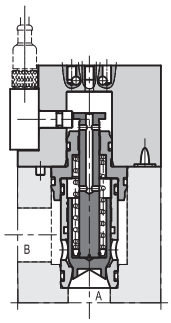
LC*QD



LC*PS







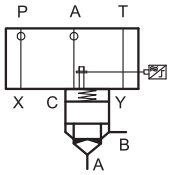
MODEL CODE	LCM*				
CATALOGUE	48 900				
SIZE (ND)	16	25	32	40	50
TYPE	ISO 7368 slip-in cartridge valves				
p max	350				
Q max QS	250 l/min	500 l/min	900 l/min	1300 l/min	2000 l/min

FEATURES ++

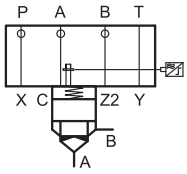
The compliance of these valves with the CE safety requirements has been verified by TÜV Sud.
CRACKING PRESSURE: 4 bar
MONITORING: PNP type NO, closed position monitored, 24V DC
COVER FUNCTION: **D** check valve - **Z** piloting of other cartridges - **Q** flow control (for ND 16, 25 and 50 only)
OPTIONS: **LL** low leakage

SYMBOLS

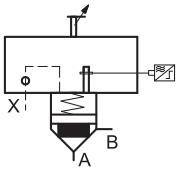
LCM*D



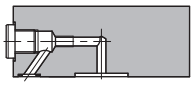
LCM*Z



LCM*Q







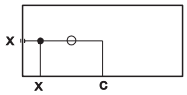
MODEL CODE	LP*					
CATALOGUE	48 900					
SIZE (ND)	16	25	32	40	50	63
TYPE	covers					
TYPE						
R	■	■	■			■
D	■	■	■	■	■	■
DZ	■	■	■	■		
DF1	■	■	■	■	■	
DF2	■	■	■	■	■	
Q	■	■	■	■	■	■
DP4	■	■	■	■	■	■
DP6	■	■	■	■	■	■
DPE4	■	■	■	■	■	
DPE6	■	■	■	■	■	

FUNCTIONS

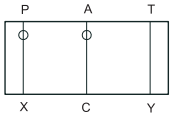
R directional control and check valve with external pilot - **D** directional control and check valve
DZ directional control with possibility to pilot other cartridges in line - **DF1** directional control and check with double pilot line - **DF2** directional control and check with priority piloting from two external lines
Q flow control - **DP4** pressure control with a built-in relief valve set 140 bar - **DP6** pressure control with built-in relief valve set 350 bar - **DPE4** pressure control by means of a proportional valve set 140 bar
DPE6 pressure control by means of a proportional valve set 350 bar

SYMBOLS

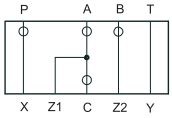
LP*R



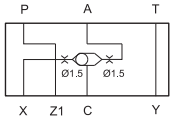
LP*D



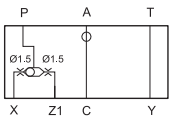
LP*DZ



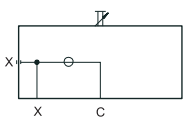
LP*DF1



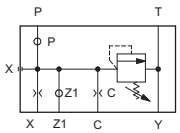
LP*DF2



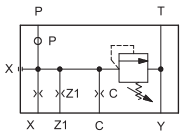
LP*Q



LP*DP



LP*DPE

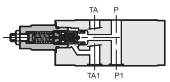


STACK VALVES OVERVIEW

All modular valves with screw adjustment may be provided with **ADJUSTMENT KNOB**, with the exception of the valves of size ISO 4401-02.
Some valves may be provided with zinc-nickel surface finishing. Contact our Sales Dept. for more detailed information.







MODEL CODE	PRM2	PRM3	MRQ	PRM5	PRM7	PBM3
CATALOGUE	61 100	61 201	61 220	61 310	61 411	61 260
SIZE	4	6	6	10	16	6
ISO 4401 / CETOP	02	03	03	05	07	03
TYPE	relief, direct operated		relief, pilot operated			backpressure
p max	320 bar	350 bar	350 bar	350 bar	350 bar	350 bar
Q max	20 l/min	50 l/min	75 l/min	120 l/min	300 l/min	50 l/min
Q max free lines		75 l/min				75 l/min
VERSIONS						
PT; SP (P → T)	■	■	■	■	■	
AT; SAT (A → T)		■	■	■		
BT; SBT (B → T)	■	■	■	■		
DT (A and B → T)	■	■	■	■		
BA; SB (B → A)		■	■			
D, cross (A→B and B → A)		■	■	■		
B→ B1						■

PRESSURE ADJ. RANGES

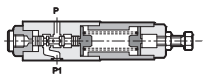
PRM2: **4** 63 ÷ 125 bar - **5** 80 ÷ 210 bar - **6** 125 ÷ 320 bar
PRM3: **025** up to 25 bar - **070** up to 70 bar - **140** up to 140 bar - **210** up to 210 bar - **350** up to 350 bar
MRQ: **2** up to 25 bar - **3** up to 70 bar - **4** up to 140 bar - **5** up to 210 bar - **6** up to 350 bar
PRM5: **070** 14÷ 70 bar - **140** 14 ÷ 140 bar - **210** 14 ÷ 210 bar - **350** 14÷ 350 bar
PRM7: **035** 6 ÷ 35 bar - **070** 6÷ 70 bar - **150** 8 ÷ 150 bar - **250** 10 ÷ 250 bar - **350** 10 ÷ 350 bar
PBM3: **2** up to 25 bar - **3** up to 70 bar - **4** up to 140 bar







MODEL CODE	PZM2	PZM3	PZM5	PZM7	MSD	SD4M
CATALOGUE	62 100	62 201	62 310	62 411	63 200	63 300
SIZE	4	6	10	16	6	10
ISO 4401 / CETOP	02	03	05	07	03	05, R05
TYPE	reducer				sequence	
p max	320 bar	350 bar	350 bar	350 bar	350 bar	320 bar
Q max	20 l/min	50 l/min	80 l/min	300 l/min	50 l/min	80 l/min
Q max free lines	30 l/min	75 l/min	100 l/min		75 l/min	100 l/min
VERSIONS						
I; P (reduction in P)	■	■	■	■	■	■
A; PA (reduction in A)		■	■	■		
B; PB (reduction in B)	■	■	■			

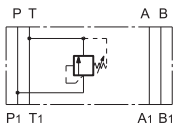


PRESSURE ADJ. RANGES

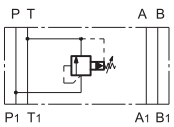
PZM2: **2** 10 ÷ 25 bar - **3** 20 ÷ 63 bar - **4** 10 ÷ 160 bar - **5** 50 ÷ 210 bar
PZM3: **035** 3 ÷ 35 bar - **070** 10 ÷ 70 bar - **140** 30 ÷ 140 bar - **280** 50 ÷ 280 bar
PZM5: **070** 8÷ 70 bar - **150** 8 ÷ 150 bar -**280** 10 ÷ 280 bar
PZM7: **035** 6 ÷ 35 bar - **070** 6÷ 70 bar - **150** 8 ÷ 150 bar - **250** 10 ÷ 250 bar - **300** 10 ÷ 300 bar
MSD: **3** 10 ÷ 70 bar - **4** 30 ÷ 140 bar - **5** 50 ÷ 280 bar
SD4M: **3** up to 70 bar - **4** up to 140 bar - **5** up to 210 bar

SYMBOLS

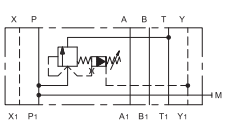
PRM*-PT



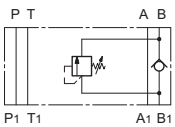
MRQ-SP



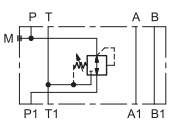
PRM7-PT



PBM3

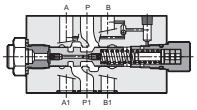


PZM3





MODEL CODE	PCM3	PCM5	PCM7	PCM8
CATALOGUE	63 310	63 320	63 330	63 520
SIZE	6	10	16	25
ISO 4401 / CETOP	03	05	07	08
p max	350 bar	350 bar	350 bar	350 bar
Q max	40 l/min	100 l/min	280 l/min	300 l/min



VERSIONS

P 2-port compensator - **PT** 3-port compensator (not available for PCM8)

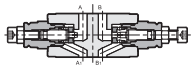
PRESSURE ADJ. RANGES

PCM3: **V** variable 7 to 33 bar - **4** 4 bar - **8** 8 bar
PCM5, PCM7 : **4** 4 bar - **8** 8 bar
PCM8: **8** 8 bar







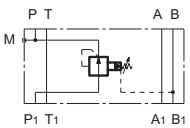


MODEL CODE	QTM2	QTM3	QTM5	QTM7
CATALOGUE	64 100	64 201	64 310	64 411
SIZE	4	6	10	16
ISO 4401 / CETOP	02	03	05	07
TYPE	flow restrictor			
p max	320 bar	350 bar	350 bar	350 bar
p cracking	0.4 bar	0.5 bar	0.5 bar	0.7 bar
Q max	30 l/min	50 l/min	120 l/min	300 l/min
METER OUT				
SA (on line A)	■	■	■	■
SB (on line B)	■	■	■	
D (on line A and B)	■	■	■	■
METER IN				
RSA (on line A)		■ (G)	■	
RSB (on line B)		■ (G)	■	
RD (on line A and B)		■	■	

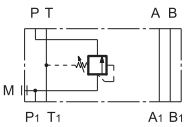
QTM3 FEATURES ++

G* VERSION: the valve body does not provide the OR seats.
The mounting interface is achieved by interposition of an OR subplate, included. The flow control (meter-in or meter-out) depends on the way of assembly the valve on the subplate.
The G version is available with SA, SB and D configurations.

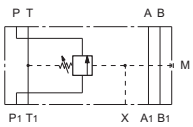
PZM7-PA



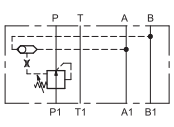
MSD



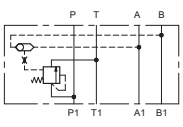
SD4M



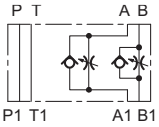
PCM*-PV



PCM*-PT

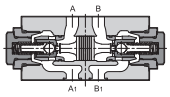


QTM3-D, QTM*-D



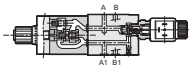






MODEL CODE	CHM2	CVM3	MVR-RS/P	CHM3	CVM5	CHM5	CHM7
CATALOGUE	65 100	65 201	65 210	65 251	65 301	65 360	65 410
SIZE	4	6			10		16
ISO 4401 / CETOP	02	03			05		07
TYPE	pilot operated	check valve	w. restrictor	pilot operated	check valve,	pilot operated	pilot operated
p max	320 bar	350 bar			350 bar	350 bar	350 bar
p cracking	2 bar	0.5; 3; 5 bar	1 bar	3 bar	0,5; 8 bar	2 bar	2 bar
Q max	30 l/min	50 l/min			100 l/min	120 l/min	300 l/min
Q max free lines		75 l/min					
CHECK VALVE							
SP, P (on line P)		■	■		■		
SA (on line A)	■	■		■	■	■	■
SB (on line B)	■	■		■	■	■	■
ST (on line T)		■			■		
D (on line A and B)	■	■		■		■	■
PT, SPT (on line P and T)		■					





MODEL CODE	RPC1*M	RPC1*4M	RLM3
CATALOGUE	66 200	66 300	66 260
SIZE	6	10	6
ISO 4401 / CETOP	03	05	03
TYPE	adjustment compensated in flow and temperature		solenoid speed control
p max	250 bar	250 bar	250 bar
Q max free lines	65 l/min	120 l/min	65 l/min
Q reverse free	40 l/min	40 l/min	-
METER-OUT			
A (on line A)	■	■	■
B (on line B)	■	■	
D (on line A and B)	■	■	
T (on line T)	■		■
METER-IN			
P (on line P)	■		
PCT3 (on line P w. adj on T)	■		

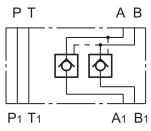
FEATURES ++

FLOW ADJUSTMENT RANGE: **K** body only (without flow control valve). **1** 1 l/min - **4** 4l/min - **10** 10 l/min - **16** 16 l/min **22** 22 l/min - **30** 30 l/min

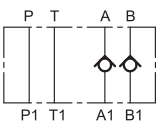
RLM3 ONLY: for **A** normally open - **C** normally closed solenoid valve.
ELECTRICAL OPTIONS same as DL3 valve, see at DIRECTIONAL VALVES.

SYMBOLS

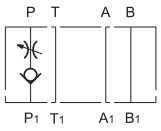
CHM*-D



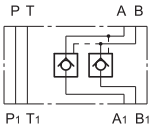
CVM3-D



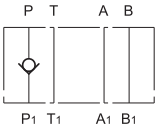
MVR-RS/P



CHM3-D



CVM5-SP



MODEL CODE	MDS3	MDS5	M*F3(M)	MDT
CATALOGUE	41 251	41 351	41 270	42 250
SIZE	6	10	6	
ISO 4401 / CETOP	03	05	03	
TYPE	directional		shut-off	poppet directional
p max	350 bar		350 bar	250 bar
Q max	50 l/min	100 l/min	50 l/min	25 l/min







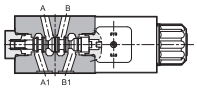
■MDS3 ++

AVAILABLE SPOOLS: **S1**, **S12**, **SA1**, **SA12**, **SB1**, **SB12**, **S3**, **RSA1**, **RSB1**, **TA**, **TB**, **TA31**, **TB31**. See spools schemes at DIRECTIONAL VALVES.
POWER SUPPLY: **DC** 12V, 24V, 28V, 48V, 110V, 220V; **RD** 24V, 48V, 110V, 220V (with connector included)
COIL CONNECTION: **K1** DIN 43650 - **K7** Deutsch (D12 and D24 only)
MANUAL OVERRIDES: **CM** boot - **CP** push - **CPK** push w. detent



■MDS5 ++

AVAILABLE SPOOLS: **S1**, **SA1**, **SB1**, **TA**, **TB**. See spools schemes at DIRECTIONAL VALVES.
POWER SUPPLY: **DC** 12V, 24V; **AC** 24V, 48V, 110V, 230V
COIL CONNECTION: **K1** DIN 43650
MANUAL OVERRIDES: **CM** boot



■MD*F3 ++

VERSIONS: **D** solenoid actuation - **C** hydraulic actuation
CONTROL ELEMENT SIDE: **A** or **B**
SPOOL: **F1** closed - **F3** float - **FP** parallel - **FC** cross
POWER SUPPLY: **DC** 12V, 24V, 48V, 110V, 220V - DIN 43650 connections.

■MD*F3M++

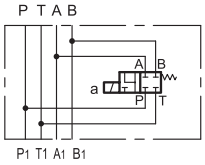
VERSIONS: **D** solenoid actuation - **C** hydraulic actuation
CONTROL ELEMENT SIDE: **A** or **B**
SPOOL: **F1** closed - **FP** parallel - **FC** cross
POWER SUPPLY: **DC** 12V, 24V, 48V, 110V, 220V - DIN 43650 connections.
MONITORED POSITION **MA** or **MB**

■MDT ++

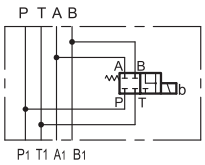
A initial position open - **C** initial position closed
VERSIONS: **SA** control on line A - **SB** control on line B - **D** control on lines A and B
SUPPLY VOLTAGES: direct current **12V-CC** 12 V - **24V-CC** 24 V;
alternating current **110RAC** 110V - **220RAC** 220 V - DIN 43650 connections.

■ MDS3 SPECIALS

TA31

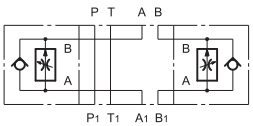


TB31

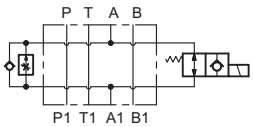


Please refer to the 'solenoid operated' section for standard spools.

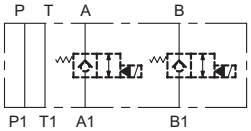
RPC1*M/D



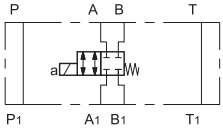
RLM3A-A



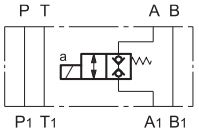
KTM3-D



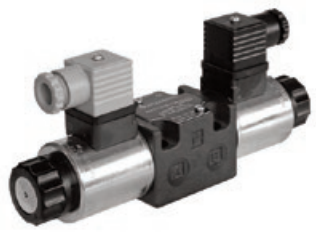
MDF3-F1A



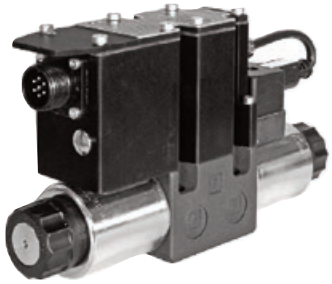
MDT-SA1



PROPORTIONAL VALVES
OUR RANGE
ELECTRONICS

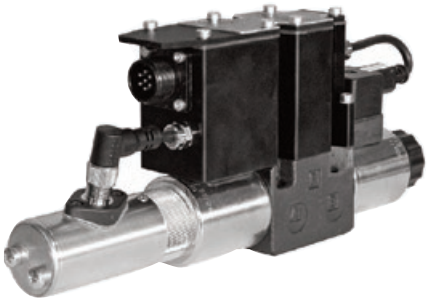


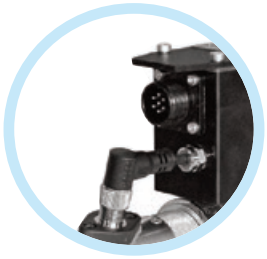
E PROPORTIONAL CONTROL
COIL CONNECTION: **K1** DIN 43650 style - **K7** Deutsch
POWER SUPPLY: **D12** 12V DC - **D24** 24V DC



G WITH ON-BOARD ELECTRONICS
Standard - **L** Compact - **H** Fieldbus

J WITH ON-BOARD ELECTRONICS AND FEEDBACK
Standard - **L** Compact - **H** Fieldbus

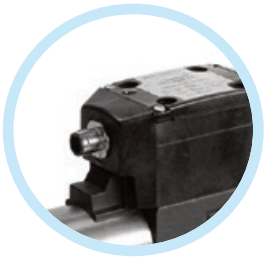




STANDARD ELECTRONICS
CONNECTION **K11** 6 pin+PE

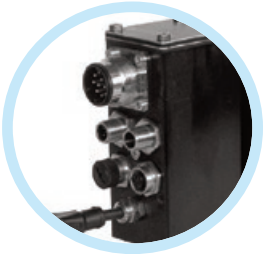
E0 analogue, voltage 0...10V or ±10V
E1 analogue, current 4...20 mA

OPTIONS: **A** external enable
B internal enable - **C** 0V monitor



L COMPACT ELECTRONICS
CONNECTION **K12** 5 pin M12

E0 analogue, voltage 0...10V or ±10V
E1 analogue, current 4...20 mA
IOL IO-Link
CA CAN Open



H ELECTRONICS FOR FIELDBUS
MAIN CONNECTION **K16** 11 pin+PE

EC EtherCAT - **EN** Ethernet /IP - **PN** PROFINET

E0 analogue, voltage 0...10V or ±10V
E1 analogue, current 4...20 mA
FD full digital version

PORT FOR DIGITAL SENSOR: **1** SSI
PORT FOR ANALOGUE SENSOR: **1** single or double

CONNECTORS AND CABLES see catalogue 89 000






MODEL CODE	PLKE08	PDE3	PDE3G*	PDE3J*	PRE3	PRE3G*
CATALOGUE	81 101	81 211	81 221	81 231	81 241	81 251
SIZE (ND)	cartridge	06				
SIZE ISO / SAE	SAE-08	4401-03				
TYPE	relief, direct op.	relief direct operated	relief direct operated with OBE	relief with OBE and pressure feedback	relief pilot operated	relief pilot operated with OBE
p max	400 bar	350 bar			350 bar	
Q max	2 l/min	2 l/min			40 l/min	
PERFORMANCES						
hysteresis	< 5 %	< 5 %	< 4 %	< 1 %	< 5 %	< 4 %
resp. time 0→100%	80 ms	60 ms	60 ms	60 ms	80 ms	80 ms
resp. time 100→0%	50 ms	70 ms	20 ms	20 ms	40 ms	40 ms
PRESSURE ADJ. RANGE						
up to 25 bar		■	■		■	
up to 70 bar		■	■		■	■
up to 80 bar	■					
up to 140 bar		■	■	■	■	■
up to 170 bar	■					
up to 210 bar		■	■	■	■	■
up to 250 bar	■					
up to 350 bar	■	■	■	■	■	■



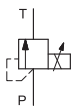


MODEL CODE	PRE10	PRE10G*	PRE10J*	PRE25	PRE25G*	PRE25J*	PRE32	PRE32G*	PRE32J*
CATALOGUE	81 311	81 321	81 331	81 311	81 321	81 331	81 311	81 321	81 331
SIZE (ND)	10			25			32		
SIZE ISO	6264-06			6264-08			6264-10		
TYPE	relief	relief with OBE	relief with OBE and press. feedback	relief	relief with OBE	relief with OBE and press. feedback	relief	relief with OBE	relief with OBE and press. feedback
p max	350 bar								
Q max	200 l/min			400 l/min			500 l/min		
PERFORMANCES									
hysteresis	< 5%	< 3 %	< 1 %	< 5 %	< 3 %	< 1 %	< 5 %	< 3 %	< 1 %
resp. time 0→100%	70 ms			70 ms			70 ms		
resp.time 100→0%	40 ms			40 ms			40 ms		

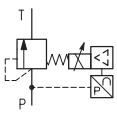
■ **P*E*K*** ex-proof versions of PDE3, PRE3 and PRE* available, cat. 81 316
PRESSURE ADJ. RANGE: **025** up to 25 bar (not available for valves with feedback) - **070** up to 70 bar (not available for valves with feedback) - **140** up to 140 bar - **210** up to 210 bar - **350** up to 350 bar

■SYMBOLS

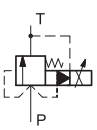
PLKE08



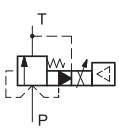
PDE3G* / J*



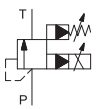
PRE3



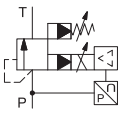
PRE3G*



PRE*



PRE*G* / J*











MODEL CODE	PZME3	PZME5	PZE3	PZE3G*	PZE3J*	ZDE3	ZDE3G*
CATALOGUE	81 506	81 540	81 501	81 502	81 503	81 510	81 520
SIZE (ND)	06	10	06			06	
SIZE ISO	4401-03	4401-05	4401-03			4401-03	
TYPE	pr. reducing		three-port pr. reducing, pilot operated			reducing, direct acting	
	stackable, pilot operated			with OBE	with OBE and pressure feedback		with OBE
p max	320 bar	320 bar	350 bar			100 bar	
Q max	40 l/min	100 l/min	50 l/min			15 l/min	
PERFORMANCES							
hysteresis	< 3 %	< 3 %	< 5 %	< 3 %	< 1 %	< 4 %	< 3 %
resp. time 0→100%	60 ms	40 ms	90 ms	90 ms	90 ms	30 ms	20 ms
resp. time 100→0%	60 ms	50 ms	90 ms	90 ms	40 ms	30 ms	20 ms

PZME3

PRESSURE ADJ. RANGE: **070** 5 ÷ 70 bar - **150** 0 ÷ 150 bar - **230** 0 ÷ 230 bar

PZME5

PRESSURE ADJ. RANGE: **070** 7 ÷ 80 bar - **150** 7 ÷ 165 bar - **230** 17 ÷ 230 bar

PZE3, PZE3G, PZE3J

PRESSURE ADJ. RANGE: **025** 0 ÷ 25 bar - **070** 0 ÷ 70 bar - **140** 0 ÷ 140 bar - **210** 0 ÷ 210 bar - **310** 0 ÷ 310 bar

ZDE3, ZDE3G

D pressure reduction in A and B - **SA** pressure reduction in A (solenoid on side B) no ZDE3G - **SB** pressure reduction in B (solenoid on side A)

OPTIONS: **CM** boot manual override - **CS** screw manual override

VERSIONS: **ZDE3K*** ex-proof version available, cat. 81 515





MODEL CODE	DZCE5	DZCE5G*	DZCE7	DZCE7G*	DZCE8	DZCE8G*
CATALOGUE	81 601	81 611	81 601	81 611	81 601	81 611
SIZE (ND)	10		16		20	
SIZE ISO	4401-05, R05, P05		4401-07		4401-08	
TYPE	three-port pressure reducing / relieving valve					
p max	350 bar					
Q max	150 l/min		300 l/min		500 l/min	
PERFORMANCES						
hysteresis	< 6 %	< 2 %	< 6 %	< 2 %	< 6 %	< 2 %
resp. time 0→100%	100 ms	100 ms	100 ms	100 ms	100 ms	100 ms
resp.time 100→0%	50 ms	50 ms	50 ms	50 ms	50 ms	50 ms

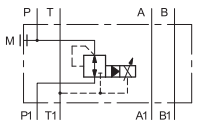
DZCE*K* ex-proof versions available, cat. 81 606

PRESSURE ADJ. RANGE: **070** 1 ÷ 70 bar - **140** 1 ÷ 140 bar - **210** 1.2 ÷ 210 bar - **320** 1.8 ÷ 320 bar

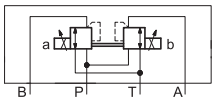
OPTIONS: **I** internal pilot /drain - **E** external pilot /drain

SYMBOLS

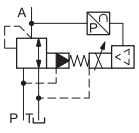
PZME3



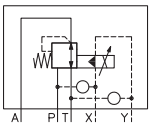
ZDE3 / ZDE3G*



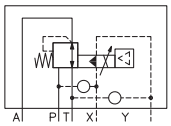
PZE3G* / J*



DZCE*



DZCE*G*











MODEL CODE	RPCED1	RPCER1	RPCED1-T3	QDE3	QDE5	QDE3GL
CATALOGUE	82 200	82 250	82 210	82 220	82 220	82 230
SIZE (ND)	6			6	10	6
SIZE ISO / CETOP	6263-03			6263-03	4401-05	6263-03
TYPE	2-port compensated	2-port compensated + LVDT	3-port compensated	2 or 3-port compensated		
p max	250 bar					
Δp	10 bar		8 bar	4 and 8 bar	8 bar	4 and 8 bar
Q min controlled	0.025 l/min		0.5 l/min	0.4 l/min	2 l/min	0.4 l/min
PERFORMANCES						
hysteresis	< 6 %	< 2.5 %	< 6 %	< 6 %		
response time 0 → 100 %	60 ms	180 ms	60 ms	70 ms		
response time 100 → 0 %	80 ms	150 ms	80 ms	-	-	-
CONTROLLED FLOW						
1,5 ; 4 ; 8 ; 16 ; 25	■	■	■			
14 ; 20 ; 30 ; 40				■		■
80					■	

■FEATURES ++

COILS: power supply **D12** 12V DC (QDE* only) - **D24** 24V DC
OPTIONS: **CM** boot manual override (QDE3 only)- **CK** / **CK1** knob (QDE3 only)- **W7** Zinc-nickel (not for RPCER1)
EXPLOSION PROOF **QDE3K*** see catalogue 82 225
QDE* valves are suitable both as restrictive or as bypass flow control, depending on the paths in the mounting surface.
QDE3GL: **E0** voltage 0...10V or ±10V - **E1** current 4...20 mA - **IOL** IO-Link - **CA** CAN Open





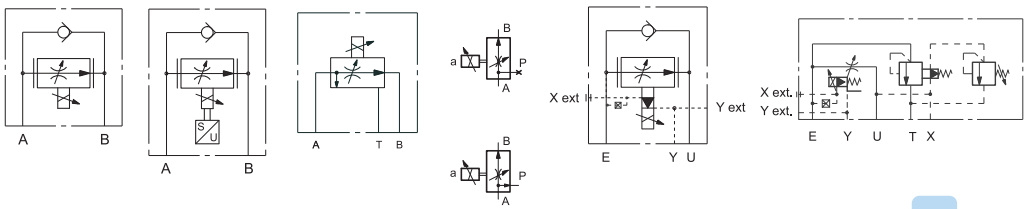
MODEL CODE	RPCE2	RPCE2-T3	RPCE3	RPCE3-T3
CATALOGUE	82 300		82 450	
SIZE ISO / CETOP	6263-06		6263-07	
TYPE	2-port compensated	3-port compensated	2-port compensated	3-port compensated
p max	250 bar		250 bar	
Δp	10 bar		10 bar	
Q min contr.	0.2 l/min	0.5 l/min	0.5 l/min	1.5 l/min
PERFORMANCES				
hysteresis	< 8 %			
response time 0 → 100 %	250 ms		250 ms	
response time 100 → 0 %	120 ms		120 ms	
CONTROLLED FLOW				
35	■ G			
37	■			
72	■			
80		■		
100			■ (G)	■

■FEATURES ++

E external pilot - **G** differential gain. Available only in RPCE2 at 35 l/min and in RPCE3 at 100 l/min

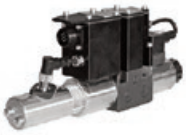
■SYMBOLS

RPCED1 RPCER1 RPCED1-T3 QDE* RPCE* RPCE*-T3












MODEL CODE	DSE2	DSE3	DSE3B	DSE3F	DSE3G*	DSE3J*	DSE5	DSE5G*	DSE5J
CATALOGUE	83 100	83 210	83 215	83 240	83 220	83 230	83 260	83 270	83 280
SIZE (ND)	03	06					10		
CETOP	02	03					05		
ISO 4401	02	03					05		
TYPE	proportional valve, direct acting								
	standard	standard	basic	with LVDT	with OBE	with LVDT + OBE	standard	with OBE	with LVDT + OBE
p max	350 bar	350 bar					320 bar		
Q max	20 l/min	40 l/min				80 l/min	95 l/min		180 l/min
PERFORMANCES									
hysteresis	< 6 %	< 6 %	< 6 %	< 1.5 %	< 3 %	< 0.2 %	< 6 %	< 3 %	< 0.2 %
response time 0 → 100 %	60 ms	50 ms	50 ms	30 ms	55 ms	20 ms	50 ms	55 ms	40 ms
response time 100 → 0 %	60 ms	40 ms	40 ms	25 ms	30 ms	20 ms	40 ms	60 ms	30 ms
frequency resp. (± 10%) magnitude at -3dB	-	-	-	-	-	40 Hz	-	-	35 Hz
phase lag at 90°	-	-	-	-	-	50 Hz	-	-	35 Hz
NOMINAL FLOW (10 bar Δp)									
1	■	■			■	■			
4	■	■			■	■			
8	■	■	■	■	■				
12						■			
16		■	■	■	■				
16/08		■			■				
18						■			
26		■	■	■	■				
26/13		■			■				
30						■	■	■	
30/15						■			
50									■
60							■	■	
60/30							■	■	
75									■
70/35									■
MANUAL OVERRIDES									
CM	■	■	■		■			■	
CS	■	■	■		■				
CH		■							
CK / CK1	■	■	■		■		■	■	
CK2								■	

Manual overrides availability may be limited to certain versions of the valves. Please consult the related catalogue for details.

■FEATURES ++

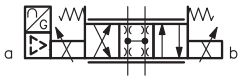
EXPLOSION PROOF **DSE3K*** see datasheet 83 510
FAIL SAFE POSITION **FS** available for valves type 'J' with spools type Z
DSE5 EXTERNAL DRAIN **Y** mounting surface ISO 4401-05-05-0-05 - **L** mounting surface ISO 4401-05-06-0-05
ALTERNATIVE SURFACE FINISHING: **W7** Zinc-nickel (salt spray resistance up to 600 hours)

CZ*

OVERLAP COMPENSATION

for DSE*G only

CZ*



Z*

ZERO OVERLAP

for DSE*J only

Z*



Z*FS

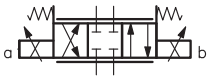


C*

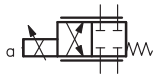
CLOSED CENTRE

*SB version may be not available on certain type of valves

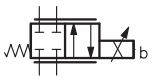
C*



C*SA



C*SB



A*

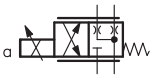
OPEN CENTRE

*SB version may be not available on certain type of valves

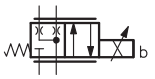
A*



A*SA



A*SB







MODEL CODE	DSPE5 to DSPE11					DSPE5G* to DSPE11G*				
CATALOGUE	83 310					83 320				
SIZE (ND)	10	16	25	32	35	10	16	25	32	35
CETOP	P05, R05	07	08	10	10+	P05, R05	07	08	10	10+
ISO 4401	05	07	08	10	10+	05	07	08	10	10+
TYPE	proportional directional valves, pilot operated									
	standard					with OBE				
p max	350 bar				320 bar	350 bar				320 bar
Q max (l/min)	180	450	800	1800	2000	180	450	800	1800	2000
PERFORMANCES										
hysteresis	< 6 %					< 6 %				
response time 0 → 100%	50 ms	80 ms	100 ms	200 ms	200 ms	35 ms	55 ms	75 ms	140 ms	140 ms
response time 100 → 0%	40 ms	50 ms	70 ms	120 ms	120 ms	25 ms	35 ms	50 ms	160 ms	160 ms
NOMINAL FLOW at 10 bar Δp										
80, 80/40	■					■				
100		■					■			
150, 150/75		■					■			
200			■					■		
300, 300/150			■					■		
350				■					■	
500, 500/250				■					■	
800				■					■	
800/500									■	
1000					■					■



MODEL CODE	DSPE5J*	DSPE7J*	DSPE8J*	DSPE10J*	DSPE11J*
CATALOGUE	83 330				
SIZE (ND)	10	16	25	32	35
CETOP	P05, R05	07	08	10	10+
ISO 4401	05	07	08	10	10+
TYPE	proportional directional valves, pilot operated with LVDT + OBE				
p max	350 bar				320 bar
Q max	180 l/min	450 l/min	800 l/min	1800 l/min	2000 l/min
PERFORMANCES					
hysteresis	< 0.5 %				
response time 0 → 100 %	40 ms	35 ms	45 ms	100 ms	100 ms
response time 100 → 0 %	35 ms	30 ms	35 ms	140 ms	140 ms
NOMINAL FLOW AT 10 BAR ΔP					
80, 80/40	■				
100		■			
150, 150/75		■			
200			■		
300, 300/150			■		
350				■	
500, 500/250				■	
800, 800/500				■	
1000					■

■FEATURES ++

EXPLOSION PROOF **DSPE*K*** see datasheet 83 510

PILOT / DRAIN **I** internal - **Z** internal pilot with pressure reducing - **E** external

MANUAL OVERRIDE: **CM** boot (on DSPE* and DSPEG*) - **CS** screw (on DSPE* and DSPEG*) - **CK** knob (on DSPE* only)

ALTERNATIVE SURFACE FINISHES: **W7** Zinc-Nickel (salt spray resistance up to 600 hours)

DSPE11* is the high flow version of DSPE10*, with oversized ports.



MODEL CODE	DDPE5RJ*	DDPE7J*	DDPE8J*	DDPE9J*	DDPE10J*	DDPE11J*
CATALOGUE	83 350					
SIZE (ND)	10	16	25	27	32	35
CETOP	R05	07	08	08+	10	10+
ISO 4401	05	07	08	08	10	10
TYPE	proportional directional valves, pilot operated with LVDT + OBE					
p max	350 bar					320 bar
Q max	180 l/min	450 l/min	800 l/min	1000 l/min	1600 l/min	2000 l/min
PERFORMANCES						
hysteresis	< 0.5 %					
response time 0 → 100 %	25 ms	25 ms	55 ms	55 ms	100 ms	100 ms
response time 100 → 0 %	40 ms	40 ms	50 ms	50 ms	160 ms	160 ms
NOMINAL FLOW at 10 bar Δp						
100	■					
120		■				
220		■				
250			■			
400			■			
480				■		
800					■	
1000						■

■FEATURES ++

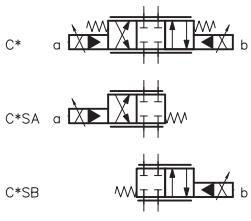
ADDITIONAL SPOOLS: **R1C, R1A** regenerative differential spool specific for regenerative circuits made by an external check valve - **R4C, R4A** regenerative differential spool specific for regenerative circuits where the regenerative function is performed by the valve itself - **X1A** specific for alternate p/Q control typical of plastic injection cycles.
Spools availability may be limited to certain sizes of the valves. Please consult the related catalogue for details.

DDPE9J is the high flow version of DDPE8J, with oversized ports.
DDPE11J is the high flow version of DDPE10J, with oversized ports.

C*

CLOSED CENTRE

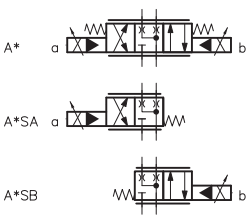
*SA and *SB are available for DSPE* valves only



A*

OPEN CENTRE

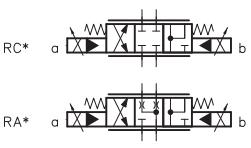
*SA and *SB are available for DSPE* valves only

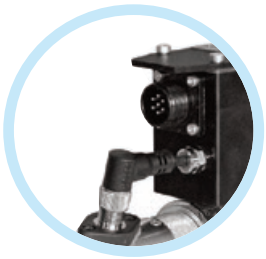


R*

REGENERATIVE

not available for DDPE*J valves and for sizes 05 and 11



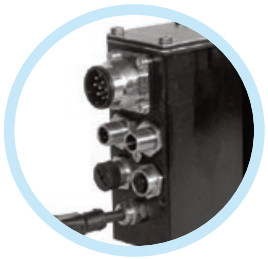


STANDARD ELECTRONICS

CONNECTION **K11** 6 pin+PE

E0 analogue, voltage 0...10V or ±10V
E1 analogue, current 4...20 mA

OPTIONS: **A** external enable
B internal enable - **C** 0V monitor



H ELECTRONICS FOR FIELDBUS

MAIN CONNECTION **K16** 11 pin+PE

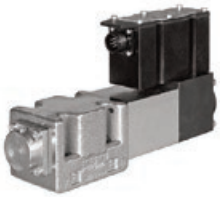
EC EtherCAT - **EN** Ethernet /IP - **PN** PROFINET

E0 analogue, voltage 0...10V or ±10V
E1 analogue, current 4...20 mA
FD full digital version

PORT FOR DIGITAL SENSOR: **1** SSI
PORT FOR ANALOGUE SENSOR: **1** single or double

CONTROL VALVES

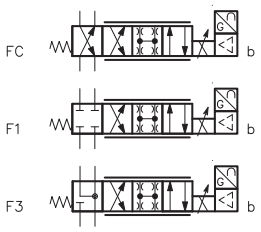




MODEL CODE	DXE3J*	DXE5J*
CATALOGUE	85 120	85 220
SIZE (ND)	6	10
CETOP	03	05
ISO 4401	4401-03	4401-05
TYPE	servo-proportional valves direct acting	
p max	350 bar	350 bar
Q max	70 l/min	100 l/min
PERFORMANCES		
hysteresis	< 0.2 %	< 0.2 %
response time 0 → 100 %	< 10 ms	< 20 ms
frequency response (± 10%) amplitude at -3dB phase lag at 90°	85 Hz 100 Hz	30 Hz 80 Hz
NOMINAL FLOW AT Δp 70 bar		
1, 2, 5	■	
10, 20, 40	■	
60		■
100		■

LZ

ZERO OVERLAP with linear flow characteristic



■FEATURES ++

FAIL SAFE TYPE: **F1** closed centre - **F3** open centre - **FC** cross position
EXPLOSION PROOF: **K3** compliant with ATEX 2014/34/EU II 3GD



MODEL CODE	DXRE5RJ*	DXRE7J*	DXRE8J*	DXRE10J*	DXRE11J*
CATALOGUE			85 330		
SIZE (ND)	10	16	25	32	35
CETOP	R05	07	08	10	10+
ISO 4401	4401-05-05	4401-07	4401-08	4401-10	4401-10+
TYPE	servo proportional valves pilot operated				
p max	350				320
Q max	180	450	850	1600	3500
PERFORMANCES FOR ZERO OVERLAP SPOOLS					
response time 0 → 100 %	25	25	30	50	50
frequency response (± 10%) amplitude at -3dB phase lag at 90°	40 60	35 50	30 45	20 35	20 35
100	■				
120		■			
220		■			
250			■		
400			■		
800				■	
1000					■
PERFORMANCES FOR POSITIVE OVERLAP SPOOLS					
hysteresis	< 0.2 %				
response time 0 → 100 %	20 ms	20 ms	30 ms	120 ms	120 ms

■FEATURES ++

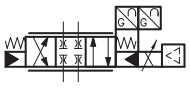
PILOT / DRAIN: **I** internal - **E** external (always verify application cases on valve datasheet)
ALTERNATIVE SURFACE FINISH: **W7** Zinc-nickel (salt spray resistance up to 600 hours)

DXRE11J is the high flow version of DXRE10J with oversized ports.

Z*

ZERO OVERLAP
with linear flow
characteristic

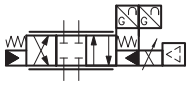
Z



C*

CLOSED CENTRE
with linear flow
characteristic

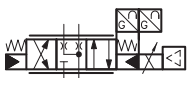
C



A*

OPEN CENTRE
with linear flow
characteristic

A



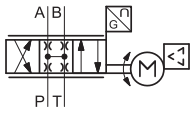




MODEL CODE	DXJ3	DXJ5
CATALOGUE	85 111	85 211
SIZE (ND)	6	10
CETOP	03	05
ISO 4401	4401-03	4401-05
TYPE	direct drive servovalves	
p max	70 bar	350 bar
Q max	100 l/min	180 l/min
PERFORMANCES		
hysteresis	< 0.2 %	< 0.2 %
response time 0 → 100 %	≤ 12 ms	≤ 20 ms
frequency response (± 10%) amplitude at -3dB phase lag at 90°	 50 Hz 50 Hz	 30 Hz 30 Hz
Power consumption	< 5 W	< 5 W
NOMINAL FLOW AT Δp 70 bar		
5, 10, 20, 40	■	
60, 100, 160		■

DOL

direct drive servovalve with rotary-linear actuation

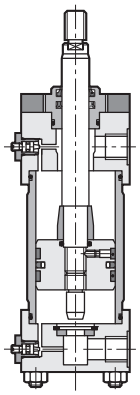


■FEATURES ++

PIN C FUNCTION: **A** external enable - **C** 0V monitor

REFERENCE SIGNAL: **E0** voltage ±10V - **E1** current 4 ÷ 20 ±10 mA - **E2** current ±20 mA





MODEL CODE	HC2
CATALOGUE	71 000
TYPE	Hydraulic actuators according to ISO 6020-2
p max continuous	160 bar
p max operating	210 bar
p peak	250 bar
stroke	max 5000 mm
speed	standard 0.5 m/s low friction 15 m/s

FEATURES

SINGLE / DOUBLE ROD available
HCK2 ex-proof version available, see catalogue.

MOUNTING STYLE: **A** flange, front - **B** flange, rear - **C** clevis, female - **D** clevis, male - **F** spheric swivel - **G** feet - **H** swinging, front - **L** swinging, mid - **N** swinging, rear - **P** tie rods, front - **Q** tie rods, back - **R** tie rods, front and back - **T** threaded holes, front - **U** threaded holes, rear

SENSORS: As option. **FP** PNP proximity sensor - **FMR** reed magnetic sensors - **FMH** Hall effect magnetic sensors

ALTERNATIVE ROD THREAD: **W** female - **X** male, light - **Y** female, light

SEALS: **K** standard nitrile+polyurethane - **M** low friction nitrile+PFTE - **V** high temperature / viton+PFTE

CUSHIONING: **0** without - **1** front - **2** back - **3** both front and back

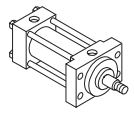
BREATHERS: **0** without - **S** with, both front and back

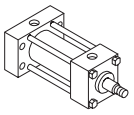
CONNECTIONS POSITION: four position available, see related datasheet.

ROD / BORE AVAILABILITY

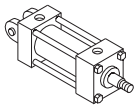
ROD diameter (mm)	BORE (mm) 25	32	40	50	63	80	100	125	160	200
12	■									
14		■								
18	■	■	■							
22		■	■	■						
28			■	■	■					
36				■	■	■				
45					■	■	■			
56						■	■	■		
70							■	■	■	
90								■	■	■
110									■	■
140										■

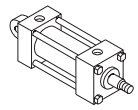
A B
flanged
ME5
ME6



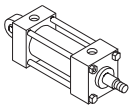


C D
clevis
MP1
MP3

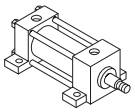




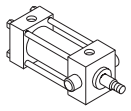
F
swivel joint
MP5

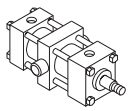


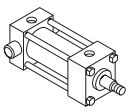
G
feet
MS2



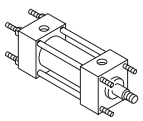
H L N
swinging
MT1
MT2
MT4



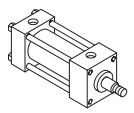


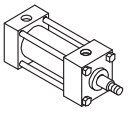


P Q R
tie rods
MX1
MX2
MX3

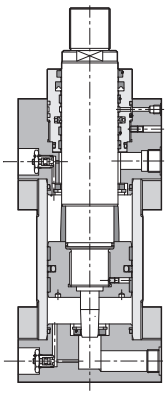


T U
threaded holes
MX5
MX6









MODEL CODE	HC3
CATALOGUE	71 200
TYPE	Hydraulic actuators according to ISO 6022
p max continuous	250 bar
p max operating	320 bar
stroke	max 5000 mm
speed	standard 0.5 m/s low friction 15 m/s

FEATURES

SINGLE / DOUBLE ROD available
HCK3 ex-proof version available, see catalogue.

MOUNTING STYLE: **A** flange, front - **B** flange, rear - **D** clevis, male - **F** spheric swivel - **L** swinging, mid
SENSORS: As option. **FP** PNP proximity sensor - **FMR** reed magnetic sensors - **FMH** Hall effect magnetic sensors

ALTERNATIVE ROD THREAD: **W** female

SEALS: **K** standard nitrile+polyurethane - **M** low friction nitrile+PFTE - **V** high temperature / viton+PFTE

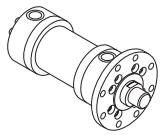
CUSHIONING: **0** without - **1** front - **2** back - **3** both front and back

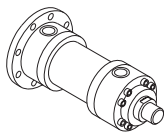
BREATHERS: **0** without - **S** with, both front and back
DRAIN: **0** without - **E** external, with port on the front end

CONNECTIONS POSITION: four position available, see related datasheet.

A B

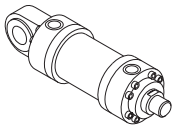
flanged
MF3
MF4





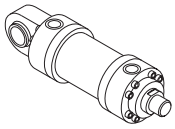
D

clevis
MP3



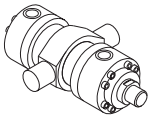
F

swivel joint
MP5



L

swinging
MT4

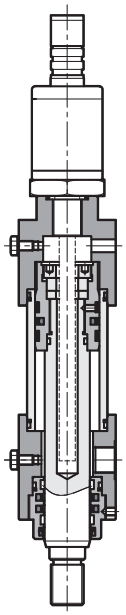


ROD / BORE AVAILABILITY

(*) bores not foreseen in the ISO 6022 standard

ROD diameter (mm)		BORE (mm)											
		50	63	80	100	125	140*	160	180*	200	250	320	400
32	36	■											
40	45		■										
50	56			■									
63	70				■								
80	90					■							
90	100						■						
100	110							■					
110	125								■				
125	140									■			
160	180										■		
200	220											■	
250	280												■





MODEL CODE	HCX*	HCX3*
CATALOGUE	71 100	71 300
TYPE	Servocylinders	
	according to ISO 6020-2	according to ISO 6022
p max continuous	160 bar	250 bar
p max operating	210 bar	320 bar
max stroke	5000 mm	5000 mm
max speed	standard 0,5 m/s	low friction 15 m/s
bore	Ø40 mm to Ø200 mm	Ø50 mm to Ø400 mm
rod	Ø22 mm to Ø140 mm	Ø32 mm to Ø280 mm

FEATURES

SINGLE / DOUBLE ROD available

MOUNTING STYLE: **A** flange, front - **G** feet - **H** swinging, front - **L** swinging, mid - **N** swinging, rear - **P** tie rods, front - **Q** tie rods, back

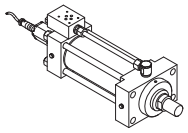
SENSORS: Wide range of transducers available, **M3** 0 ÷ 10 V - **M3A** ±10 V **M2** 4 ÷ 20 mA - **M8** 20 ÷ 4 mA - **M6** CAN-open - **M1** SSI, digital
MP PROFIBUS - **MPN** PROFINET. Further types upon request.

VALVE MOUNTING SURFACE: **04** ISO 10372 (servovalves) - **3** ISO 4401-03 **5** 4401-05 - **9** custom

SEALS: low friction nitrile+PFTE or **V** high temperature viton+PFTE

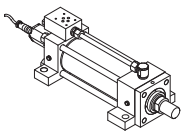
A

flanged
ME5



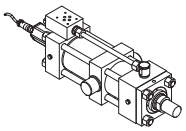
G

feet
MS2



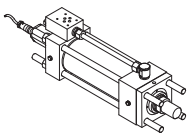
H L N

swinging
MT1
MT2
MT4



P Q R

tie rods
MX1
MX2
MX3



ROD / BORE AVAILABILITY

ROD diameter (mm)	BORE (mm) 40	50	63	80	100	125	160	200
22	■	■						
28	■	■	■					
36		■	■	■				
45			■	■	■			
56				■	■	■		
70					■	■	■	
90						■	■	■
110							■	■
140								■

ELECTRONICS AMPLIFIERS







MODEL CODE	EDC	EDM-M*	EDM-M*IOL	EDM-J	EWM-A-SV	EWM-A-PV
CATALOGUE	89 120	89 252	89 251	89 255	89 610	89 620
TYPE	single amplifier	for proportional valves in open loop		for proportional valves with feedback	for servovalves	for proportional valves in open loop
MOUNTING	on-board	rail mounting			rail mounting	
configuration	hardware / software	software			hardware	software
IP rating	IP 65/67	IP20			IP20	
power supply	10...30 V DC	9...32 V DC	19...30 V DC	19...30 V DC	18...30 V DC	12...30 V DC
reference signal	0...10 V 0...5 V 4...20 mA	0...10 V ± 10 V 4...20 mA	via IO-Link	0...10 V ± 10 V 4...20 mA	± 10 V	0...10 V; ± 10 V 4...20 mA 8 digital binary

EDC

MAX CURRENT: **1** 860 mA - **2** 1200 mA - **3** 1600 mA - **4** 1880 mA - **5** 2600 mA
PWM: **1** 100 Hz - **2** 200 Hz - **3** 300 Hz - **4** 400 Hz - **5** 500 Hz

EDM-M*, EDM-M*IOL

VERSION: **1** for single solenoid valves - **2** for dual solenoid valves - **3** 2 channels - independent control of 2 solenoids
MAX CURRENT: **0** 780 mA - **1** 860 mA - **2** 1200 mA - **3** 1600 mA - **4** 1880 mA - **5** 2600 mA - **6** 1530 mA;
PWM: **1** 100 Hz - **2** 200 Hz - **3** 300 Hz - **4** 400 Hz

EDM-J

For valves with feedback type F or R.

EWM-A-SV

CONFIGURATION: Preset or DIL switches and trimmers inside the casing. 5 DIL switches allow to set a current value from 0 to 200 mA, with increments of 10 mA. (10, 20, 30 ... etc.).

EWM-A-PV

CARD FUNCTIONS: To be set via software: **A-PV** analogue ± 10V or 4...20 mA (one channel, 2 solenoids) - **2A-PV** analogue 0...10V or 4...20 mA (two independent channels) - **D-RL** digital, 8 pre-set values, selectable by 3 digital inputs (8 binary targets). For both single or dual solenoids proportional valve either.

POSITIONING









MODEL CODE	EWM-S-AA	EWM-ST-AA	EWM-S-AD	EWM-SP-DAD	EWM-SP-DAD
CATALOGUE	89 410	89 411	89 420	89 440	89 445
TYPE	card for closed loop systems				
CONTROL	position controller			position, pressure, both	
MOUNTING	rail mounting				
IP rating	IP20				
power supply	12...30 V DC	12...30 V DC	24...30 V DC	24...30 V DC	24...30 V DC
reference signal	analogue	analogue	analogue	PROFIBUS DP	PROFINET / EtherCAT
OUTPUT					
E	± 10 V differential 4...20 mA	4...20 mA	± 10 V differential 4...20 mA	± 10 V differential 4...20 mA	± 10 V differential 4...20 mA
M*	-	500...2600 mA	-	-	-
FEEDBACK					
voltage 0...10	■	■	■	■	■
current 4...20 mA	■	■	■	■	■
digital, SSI			■	■	■

EWM-S-AA, EWM-ST-AA

Position controller for systems with analogue sensor. The EWM-ST-AA has been designed for steam turbine applications, with dedicated parameters.

EWM-S-AD

Position controller for systems with digital position feedback, it can work with analogue also.

EWM-SP-DAD

Position controller for closed loop systems for position, pressure or both position and pressure control. It operates with a digital sensor for positioning, and one or two analogue sensors for pressure sensing. Embedded interface for PROFIBUS DP or PROFINET or EtherCAT communication. Sampling time of the control loop: 1 ms.

The configuration software can be downloaded for free from the product pages on our website. Device description files are available exclusively to registered customers with valid login credentials.

SYNCHRONIZATION ELECTRONICS





MODEL CODE	EWM-MS-AA	EWM-2SS-DAD
CATALOGUE	89 450	89 475
TYPE	card for closed loop systems	
CONTROL	synchro 2 / 6 axes	synchro 2 axes
MOUNTING	rail mounting	
IP rating	IP20	
power supply	12...30 V DC	24 V DC
reference signal	0...10 V 4...20 mA	PROFINET / EtherCAT
OUTPUT		
E	± 10 V differential 4...20 mA	± 10 V differential 4...20 mA
M2	500...2600 mA	-
FEEDBACK		
voltage 0...10	■	■
current 4...20 mA	■	■
digital, SSI		■

■ EWM-MS-AA

FUNCTIONS: MASTER/MASTER position control (2 axes); MASTER/SLAVE position control, for up 6 axes.
If the synchronisation controller is active, it overrides the position control process.
INDEPENDENT POSITIONING by separate position commands. One card per axis to be driven is needed.

■ EWM-2SS-DAD SYSTEM

2 axes synchronized positioning via Fieldbus (PROFIBUS, PROFINET, EtherCAT). Fieldbus card embedded.
MASTER/SLAVE or MASTER/MASTER. Motion profile (speed and position) via Fieldbus. One card per system (2 axes are needed).

The configuration software can be downloaded for free from the product pages on our website.
Device description files are available exclusively to registered customers with valid login credentials.

PRESSURE ■





MODEL CODE	EWM-P-AA	EWM-PQ-AA
CATALOGUE	89 500	89 550
TYPE	card for closed loop systems	
CONTROL	pressure	pressure + flow
MOUNTING	rail mounting	
IP rating	IP20	
power supply	12 - 30 V DC	
reference / p signal	0...10 V 4...20 mA	0...10 V 4...20 mA
Q input	0...10 V 4...20 mA	±10 V 4...20 mA
OUTPUT		
E	-	±10 V differential 4...20 mA
M1	500...2600 mA	-
FEEDBACK		
voltage 0...10 V	■	■
current 4...20 mA	■	■

■ EWM-P-AA

For proportional pressure reducing and pressure relief valves. The power amplifier is embedded.
The reference signal is transferred directly to the pressure valve and the closed loop compensates just the linearity failures.

■ EWM-PQ-AA

For zero-overlap control valves. The p/Q controller automatically switches between flow and pressure control modes to assure the set point limits of the differential pressures has not to exceed.

All these modules have to be programmed via software. USB port on front panel. The configuration software can be downloaded for free from the product pages on our website. Sampling time of the control loop: 1 ms.





MODEL CODE	EDCPC	LINPC-USB*
CODE	3898301001	89 850
TYPE	software kit	test device
for	ECF, EDC	proportional valves with LIN-bus interface type G, J, X series 20, 30-33

EDCPC

The kit is made of software CD, drivers, cable USB/serial port and an adaptor with serial port to be plugged on the amplifier.

LINPC-USB*

VERSIONS: **5** 5 poles M12 - **7** 6 poles + PE - **12** 11 poles + PE

The kit contains a test device with embedded connection cable and the USB cable for connection to the PC.
The dedicated software of each valve series is available for free download from our website.
No additional power supply is required: the device uses the supply source from the system cable.

MODEL CODE	EBC / SMARTMANAGER	SMARTMANAGER
TYPE	software download	software download
for	proportional valves with LIN-bus interface type G, J, X series 30 and 31 EDM-M, EDM-J cards series 30 and 31	EDM-M* cards series 40 EWM* cards

EBC / SMARTMANAGER

Software for parameterization and diagnostic of:
- Duplomatic proportional valves with LIN-bus interface type G, J and X, series 30 and 31. To be combined with LINPC tool.
- Duplomatic EDM-M and EDM-J cards, series 30.

Compliant with OS Windows 7, 8, 10 and 11.
Card connection via USB port, with USB 2.0 cable A – micro B.

SMARTMANAGER

Software for parameterization of EDM-M* cards, series 40, and EWM* cards.

Compliant with Microsoft OS Windows.
Card connection via USB port, with USB 2.0 cable A – micro B.



MODEL CODE	PM RQ3*	PM RQ5*	PM RQ7*	PM RQA5*	PM SZ3*	PM SZ5*
CATALOGUE	51 000					
PATTERN	ISO 6264-06	ISO 6264-08	ISO 6264-10	-	ISO 5781-06	ISO 5781-08
TYPE	for pressure valves - ports on rear					
p max	350 bar	350 bar	350 bar	350 bar	320 bar	320 bar
PORT THREAD						
P, E	1/2" BSP	1" BSP	1 ¼" BSP	3/4" BSP	1/2" BSP	1" BSP
T	3/4" BSP	1 ¼" BSP	1 ¼" BSP	3/4" BSP		
X	1/4" BSP			-	1/4" BSP	
Y	-	-	-	-	1/4" BSP	
U	-	-	-	3/4" BSP	1/2" BSP	1" BSP

MODEL CODE	PM RPC1*	PM RPC2*	PM RPCQ2*	PM RPC3*	PM RPCQ3*
CATALOGUE	51 000				
PATTERN	ISO 6263-03	ISO 6263-06-05	ISO 6263-06-07	ISO 6263-07-09	ISO 6263-07-11
TYPE	for flow control valves				
p max	250 bar	320 bar	320 bar	250 bar	250 bar
PORT THREAD					
A, B	3/8" BSP	-			
E, U	-	1/2" BSP	1/2" BSP	1" BSP	1" BSP
T	-	-	1/2" BSP		1" BSP
X			1/4" BSP		1/4" BSP
PORT POSITION					
rear	■	■	■	■	■
side	■				



MODEL CODE	PM MD	PM D4		PM E4	PM E07	PM E5
CATALOGUE	51 000					
PATTERN	ISO 4401-03	ISO 4401-05		CETOP P05	ISO 4401-07	ISO 4401-08
TYPE	for directional valves					
p max	350 bar	350 bar		320 bar	350 bar	350 bar
PORT THREAD						
A, B, P, T	3/8" BSP	3/4" BSP	1/2" BSP	3/4" BSP	1" BSP	1 ½" BSP
X, Y	-	-	-	1/4" BSP	1/4" BSP	1/4" BSP
PORT POSITION						
rear	■	■		■	■	
side	■		■	■	■	■



MODEL CODE	PE3A-S1	PE3A-TA	PE3A-TB	PE3A-AB	PE-D4/M	PC-D4
CATALOGUE	59 000					
SIZE ISO 4401	03	03	03	03	05	05 to 03
TYPE	blanking	cross PA /BT	cross PB/AT	A ↔ B	blanking	conversion
p max	350 bar				350 bar	

■ FEATURES ++

O-Rings and fixing screws are included in the supply.



MODEL CODE	P2D	P2T	P4D-D*	P4D*
CATALOGUE	52 000		53 000	
FOR SIZE	ISO 4401-03		ISO 4401-03	ISO 4401-05
TYPE	modular subplates			
Q max	50 l/min		100 l/min	100 l/min
PORT SIZE				
P, A, B, T low	3/8" BSP		see options	
T up	1/2" BSP			
material	cast iron			
stations	1	2	1	1

P2* FEATURES ++

OPTIONS: **F** threaded ports, additional T port - **I** intermediate type with threaded bores and additional T port - **Z** designed for installation of an ISO 4401-03 pressure reducing valve
M* built-in pressure relief valve

P4* FEATURES ++

D3 mounting surface ISO 4401-03 (CETOP 03) , A and B side ports 3/8" BSP - **D3P** mounting surface ISO 4401-03 (CETOP 03) and A and B rear ports 1/2" BSP - **F** mounting surface ISO 4401-05 (CETOP 05) , A and B side ports 1/2" BSP - **P** mounting surface ISO 4401-05 (CETOP 05) and A and B rear ports 3/8" BSP - **M*** built-in pressure relief valve (4 ranges available)



MODEL CODE	P2A*	P2X*
CATALOGUE	52 100	52 110
FOR SIZE	ISO 4401-03	
TYPE	multi-station manifold	
PORTS	side	rear
p max	210 bar	350 bar
Q max	50 l/min	100 l/min
PORT THREAD		
A, B	3/8" BSP	1/2" BSP
P, T	1/2" BSP	1/2" BSP
material	aluminium	cast iron
stations	2 to 8	2, 4 or 6

P2X* FEATURES ++

M with seat for pressure relief cartridge valve. See related datasheet for details.



















MODEL CODE	FSI	FST	FPH	FPM	FPHM	FRT	FRC	FRI
CATALOGUE	95 100	95 110	95 210	95 221	95 230	95 150	95 160	95 180
TYPE	suction filters		pressure filters			return filters		
mounting	submerged	flanged	online		stackable	above reservoir flanged	above reservoir online	tank top, immersed ports
differential p max	1 bar	1 bar	20 bar 210 bar (cart. 5 µm)	21 bar	210 bar	3 bar	3 bar	3 bar
working pressure	-	-	420 bar	315 bar	320 bar	3 bar	7 bar	10 bar
FILTRATION								
metal wire mesh 90 µm	■	■	-					
fiber 05 µm	-	-	■	■	■			
fiber 10 µm	-	-	■	■	■	■		■
fiber 25 µm	-	-	■	■	■	■	■	■
paper 10 µm	-	-				■	■	■
paper 25 µm	-	-					■	
AVAILABLE SIZES / FLOWRATE RANGE (l/min)								
ISO 4401-03	-	-	-	-	12 - 16	-	-	-
ISO 4401-05	-	-	-	-	22 - 28	-	-	-
3/8" BSP	9	-	-	-	-	-	-	-
1/2" BSP	14	-	10 -33	25 - 60	-	18 - 30	-	-
3/4" BSP	25	-	19 - 65	35 - 80	-	50 - 85	65 - 75	-
1" BSP	45	-	40 - 105	-	-	65 - 130	-	125
1 1/4" BSP	75	70	88 - 230	-	-	150 -210	-	250
1 1/2" BSP	100	-	120 - 320	-	-	160 - 290	180 - 200	-
2" BSP	160	-	-	-	-	280 - 430	-	-
2 1/2" BSP	250	-	-	-	-	-	-	-
3" BSP	350	-	-	-	-	-	-	-
2 1/2" SAE		100						-
3" SAE		200						-
4" SAE	-	300	-	-	-	-	-	-
ACCESSORIES								
Clogging indicator, visual		VS/10	VPM/10	VPM/10	VM/10	VR/10	VR/10	VR/10
Clogging indicator, electric		ES/10	-	-	-	ER/11	ER/11	ER/11
Clogging indicator, visual+electric		-	EPM/10	EPM/10	EM/10	-	-	-
Filter element (spare part)		FSTE	FPHE	FPME	FPHME	FRTE	FRCE	FRTE

■ FEATURES++

BYPASS VALVE: FRT, FRC, FRI pressure opening 1,7 bar. FPH, FPM: **O** without - **B** with (bypass valve not available for filters with fibre cartridge 05 µm).
FILTER ELEMENT: available as spare part for all the filters. FRC, FPM : **S** standard - **L** long lasting



MODEL CODE	M63*R	M63*PF
CATALOGUE	91 000	
TYPE	pressure gauges - according to EN 837-1	
mounting	1/4"BSP radial connection	1/4"BSP flange connection
p max	end scale value for short period	

FEATURES++

GAUGE SCALE: **006** 0...6 bar - **010** 0...10 bar - **016** 0...16 bar - **025** 0...25 bar - **060** 0...60 bar - **100** 0...100 bar **160** 0...160 bar -**250** 0...250 bar - **400** 0...400 bar.

PF Flange connection available from 060 to 400 only.



MODEL CODE	PS*2	PS*4	PS*6	PS*8
CATALOGUE	91 100			
TYPE	pressure switch, piston			
p max	350 bar		650 bar	
p adjustment range	3 - 35 bar	6 -140 bar	10 - 350 bar	20 - 630 bar

FEATURES++

MOUNTING **P** ISO 4401-03 subplate - **T** threaded port 1/4" BSP



MODEL CODE	PTH						
CATALOGUE	92 100						
TYPE	pressure transmitters						
p nom	25 bar	40 bar	60 bar	100 bar	160 bar	250 bar	400 bar
p max	75 bar	120 bar	180 bar	300 bar	480 bar	750 bar	1000 bar
p burst	300 bar	280 bar	390 bar	500 bar	752 bar	1000 bar	2000 bar
hysteresis	± 0.2% of nominal pressure						
accuracy	0.5% of nominal pressure						
TEB total error band	± 1.75% of nominal pressure						

FEATURES++

HYDRAULIC CONNECTION: threaded port 1/4" BSP with seal (DIN 3869)

OUTPUT SIGNAL: **E1** current 4 ÷ 20 mA - **E0** voltage 0...10 V - **1P** 1 output PNP transistor;
upon request: **E2** voltage 0...5 V - **E5** voltage 0.5 ÷ 4.5 V ratiometric

ELECTRICAL CONNECTION: **K10** mini DIN 43650 - **K12** M12 - 4 pin







MODEL CODE	EHU 3007	EHU 3007	EHU 2008	EHU 1414	SUT00S 2416	SUT00D 6021	SUT00D 8021
CATALOGUE	96 500		96 501			96 510	
TYPE	hybrid power unit				hybrid power unit		
p max	70 bar	70 bar	80 bar	135 bar	160 bar	210 bar	210 bar
Q max (l/min)	28.5	28.5	20	13.5	24.3	60	81
supply voltage	AC 3-phase 380V...460 V - 50/60 Hz (±10%)				AC 3-phase 380V...480 V - 50/60 Hz (±10%)		
nominal motor power	1.5 kW				3 kW	3 kW	4 kW
noise level	58...70 dB				52...70 dB	57...74 dB	57...77 dB
TANK CAPACITY							
none	-	■	■	■	■	■	■
18 l	■	-	-	-	-	-	-
45 l	-	■	■	■	-	-	-
100 l	-	-	-	-	■	■	■

■ FEATURES++

Equipped with IPM motor and cooler; BSPP ports; accessories to be ordered separately; Hybrid-win software for configuration and monitoring can be downloaded for free from the website; cable kit available.

■ EHU CAT. 96 501, SUT

Deliverable with:
- fixing frame, no tank.
- tank, equipped with suction filter, level switch and customizable plate.
- tank, equipped with suction filter, level switch, return filter with clogging indicator and 3-station manifold.

■ SUT00D

SUT00D are equipped with a double pump. The primary pump delivers high pressure and limited flow. When the flow rate request is higher than the flow rate that can be supplied by the primary pump, the second pump is also activated, guaranteeing the required flow (at lower pressure). The switch from single to combined operation is done by a solenoid valve.



MODEL CODE	SUT High Accuracy SUT00S 5021	SUT00S 10021	SUT00S 13021	SUT00D 8021	SUT00D 15021	SUT00D 20025
CATALOGUE	96 520					
TYPE	hybrid power unit - single pump			hybrid power unit - double pump		
p max	206 bar			206 bar		250 bar
Q max (l/min)	50	100	130	80	150	200
controller supply voltage	AC 3-phase 380...440 V 50/60 Hz (-15% +10%)			AC 3-phase 380...440 V 50/60 Hz (-20% +10%)		
cooling fan supply voltage	AC 1-phase 200...240 V 50/60 Hz					
motor capacity	11 kW	15 kW		11 kW	15 kW	22 kW

■ FEATURES++

N basic version, no unloading manifold; **P1**, **P2** manifold included. Pressure sensor always included.

HYSTERESIS AND LINEARITY: ≤ 1%

INPUT: analogue or digital.

CONTROLLER: Each controller is paired with its servo pump and is not interchangeable, even between machines of the same model. The controller and the pump are tuned and tested together as a single integrated unit.

ELECTRICAL ACCESSORIES: Dedicated kits are available, providing all the necessary electrical components and sensor cables to wire the controller in full compliance with EC standards.



MODEL CODE	AKZ14	AKZ32	AKZ43	AKZ56	AKZ90
CATALOGUE	96 620				
TYPE	inverter controlled cooling unit, circulating type				
cooling capacity 50/60 Hz	1.3 / 1.4 kW	2.8 / 3.2 kW	3.8 / 4.3 kW	5.0 / 5.6 kW	8.0 / 9.0 kW
cooling media	lubricating oils and hydraulic oils				
supply voltage	main circuit: 3-phase AC 380/400/415 V 50/60 Hz control circuit: 12/24 V DC				
max power consumpt. (400 V)	1.02 kW	1.60 kW	1.99 kW	2.54 kW	4.42 kW
	2.2 A	3.0 A	3.5 A	4.6 A	8.2 A

FEATURES++

PROTOCOL: J RS485 Modbus RTU communication protocol



MODEL CODE	AKJ18	AKJ35	AKJ45	AKJ56	AKJ90
CATALOGUE	96 630				
TYPE	inverter controlled cooling unit - immersion type				
cooling capacity 50/60 Hz	1.6 / 1.8 kW	3.2 / 3.5 kW	4.3 / 4.5 kW	5.0 / 5.6 kW	8.0 / 9.0 kW
cooling media	water soluble cutting and grinding fluids, cutting and grinding oil, mixtures of cooling lubricants, lubricating oil, hydraulic oil, industrial water				
supply voltage	main circuit: 3-phase AC 380/400/415 V 50/60 Hz control circuit: 12/24 V DC				
max power consumpt. (400 V)	1.02 kW	1.44 kW	1.56 kW	2.90 kW	3.87 kW
	2.2 A	2.8 A	3.1 A	5.1 kW	7.8 A

FEATURES++

PROTOCOL: J RS485 Modbus RTU communication protocol



MODEL CODE	AKW18	AKW35	AKW45	AKW58	AKW92
CATALOGUE	96 610				
TYPE	inverter controlled cooling unit - basic model without pump and tank				
cooling capacity 50/60 Hz	1.8 kW	3.5 kW	4.5 kW	5.8 kW	9.2 kW
cooling media	water / ethylene glycol emulsion 30% vol. or less				
supply voltage	main circuit: 3-phase AC 380/400/415 V 50/60 Hz control circuit: 12/24 V DC				
max power consumpt. (400 V)	0.81 kW	1.36 kW	1.60 kW	2.40 kW	3.84 kW
	1.6 A	2.6 A	3.0 A	4.3 kW	7.5 A

FEATURES++

PROTOCOL: J RS485 Modbus RTU communication protocol



MODEL CODE	AKW18	AKW35	AKW45	AKW58	AKW92
CATALOGUE			96 610		
TYPE	inverter controlled cooling unit - configurable model with pump and tank				
cooling capacity	1.8 kW	3.5 kW	4.5 kW	5.8 kW	9.2 kW
cooling media	water / ethylene glycol emulsion 30% vol. or less				
supply voltage	main circuit: 3-phase AC 380/400/415 V 50/60 Hz control circuit: 12/24 V DC				
max power consumpt. (400 V)	1.56 kW	2.11 kW	2.36 kW	3.16 kW	4.60 kW
	3.0 A	3.9 A	4.3 A	5.6 A	3.1 A
rated circulating volume	10 l/min	15 l/min	15 l/min	25 l/min	40 l/min

FEATURES++

PUMP HEAD: **L** low pressure 2 bar - **M** medium pressure 4 bar - **H** high pressure 5 - 10 bar
TANK: **0** no tank - **T** plastic tank - **I** stainless steel tank
ELECTRICAL CONNECTIONS: **0** to be wired to terminal block - **S** with plug-in sockets and external isolator switch
PROTOCOL: **J** RS485 Modbus RTU communication protocol

MODEL CODE	AKZ-OP	AKZA-OP	AKPC
CATALOGUE	90 661	90 651	90 661
TYPE	sensors	long life filters	cable kit
for	AK* cooling units	AK* cooling units	cooling units

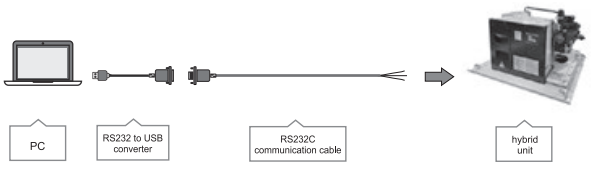
FEATURES++

AKZ-OP: **K** to be embedded into the machine body - **K** to be attached to the machine surface - **Y** to be installed in the fluid pipe of the machine (not suitable for AKJ cooling unit) ; cable length: **5**, **10** or **15** meters
AKZA-OP: **FR** filter element with mounting frame (first installation) . **LF*A** filter only – consumable part.

Fittings, optional protection devices, connectors and castors are available. Contact our pre-sales service.

MODEL CODE	EHUPC	SUTPC	AKPC
CATALOGUE	90 650	90 651	90 661
TYPE	cable kit	cable kit	cable kit
for	EHU hybrid units	SUT hybrid units	cooling units

These kits are used to connect your device to the machine when you want to perform configuration, diagnostics or simply monitor the unit's performance through the dedicated **HYBRID-WIN** software. The software is available for free download from the product's web page.



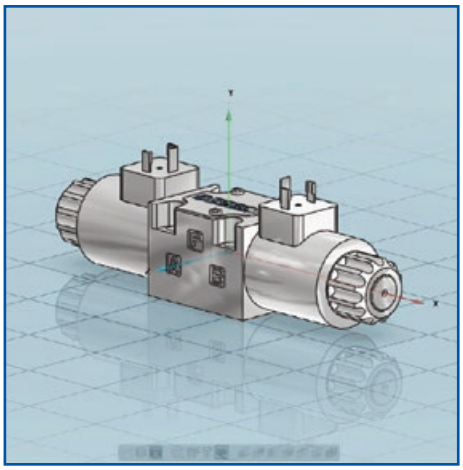
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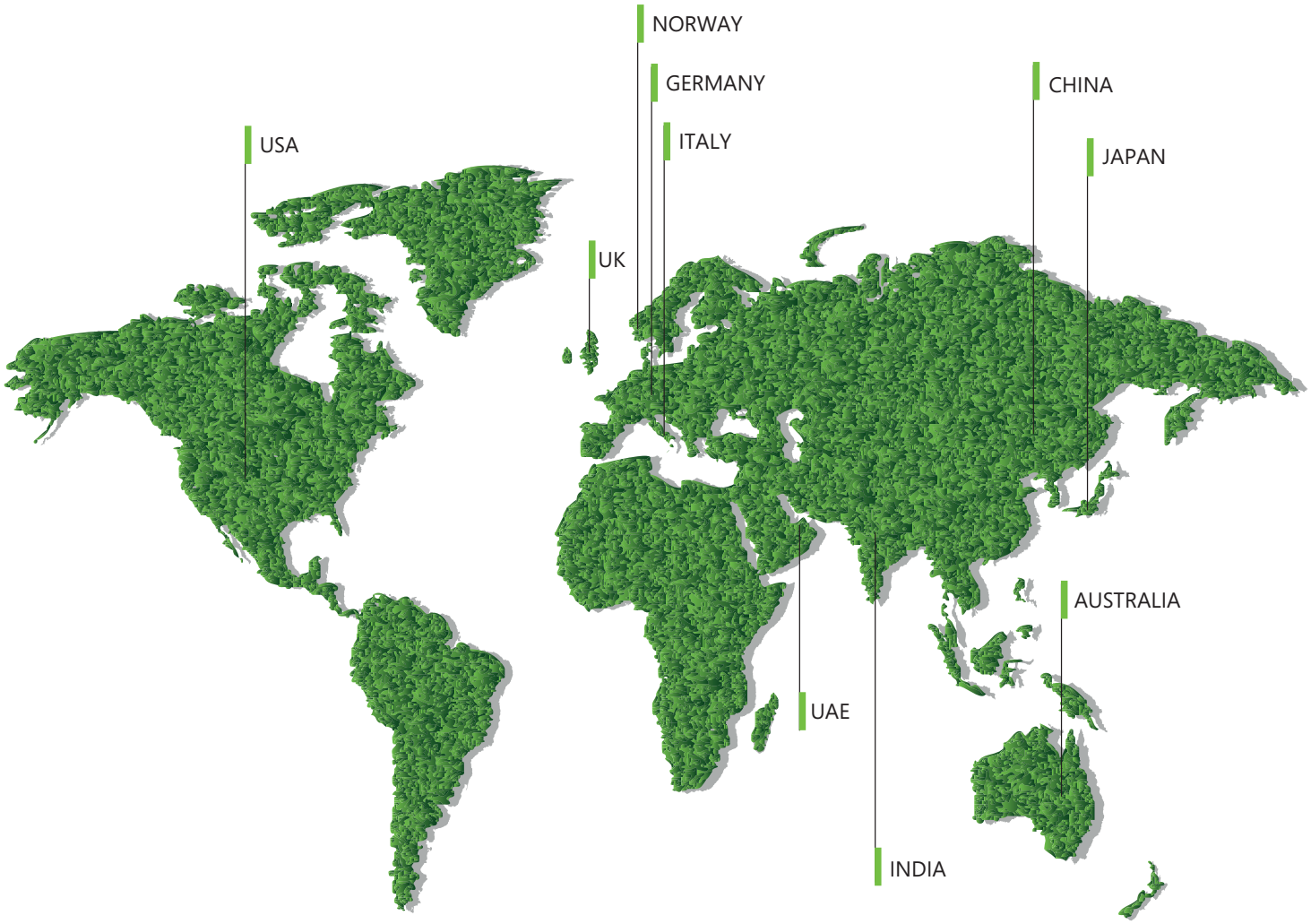
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