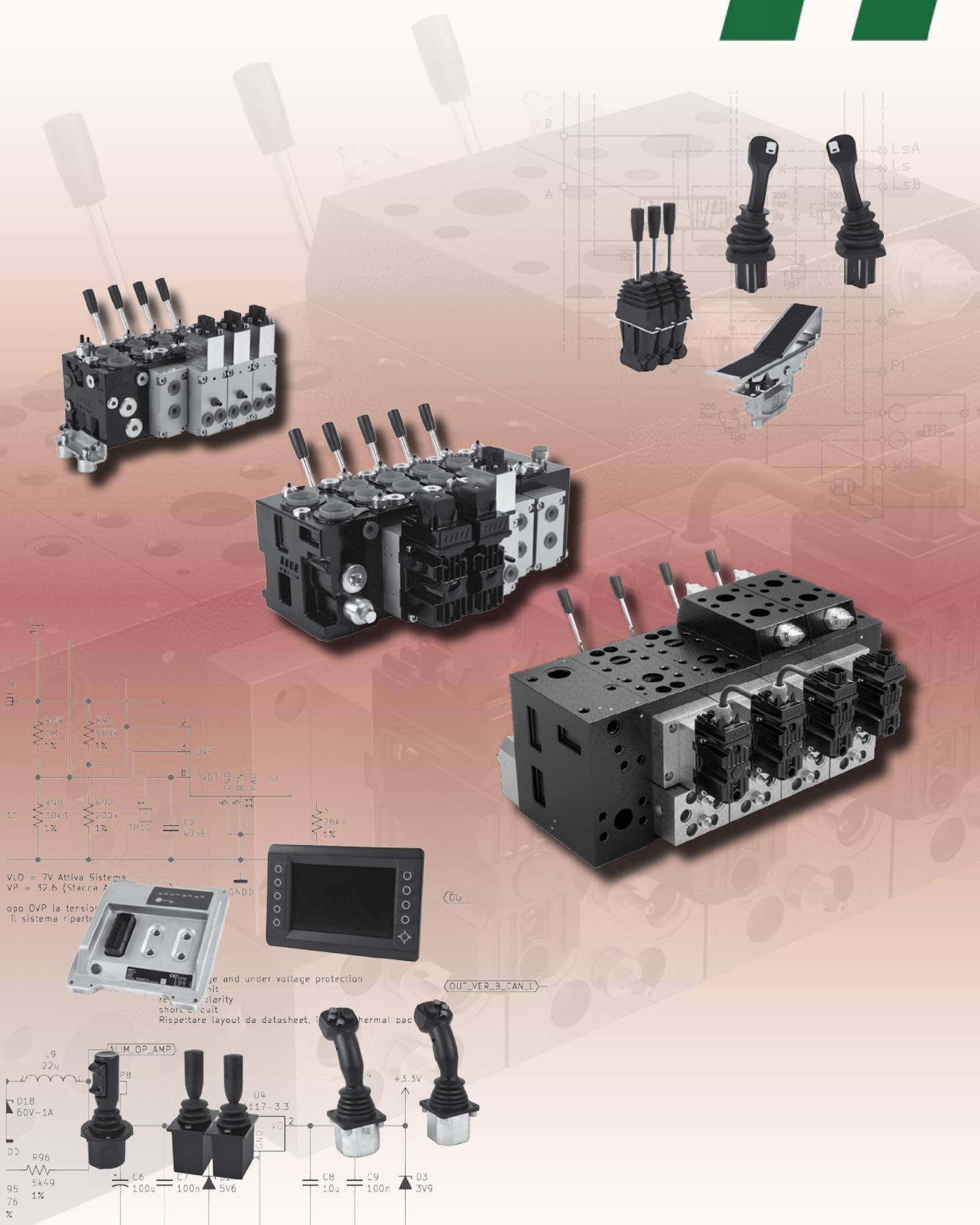


OMFB

HYDRAULIC POWER CONTROL

Proportional Directional Valves series: PDV315

H

PRELIMINARY DATASHEET

General

The **PDV** technology platform, is the latest step in proportional directional valves configuration.

It takes mobile machine control to next level of performance, reliability, and feature stringent technical demands, exacting quality standard, and safety regulations.

Based on load sensing technology, are new breakthrough products with up-graded hydraulic functions that fulfil the ever increasing market demands for improved machines productivity, safety requirements, energy efficient and environmental operations.

They provide also a wide choice of control options, and are meant to be used in hazardous area also, according to **Atex 2014/34/UE Directive and IECEx** protocol.

Safety Conformity assessment

FMEA and **FMEDA**, (failure modes effects and diagnostic analysis), are systematic analysis technique applied in early phases of a given system development, in order to detect weak points early.

When it comes to more complex products and assemblies involving a combination of both electrical and hydraulic parts, the need to ensure that adequate surveillance over the design and manufacturing of key parts is paramount, to be compliance with the on-going series Standards **IEC 61508**.

Evaluation of the achieved performance level PL and relationship with SIL

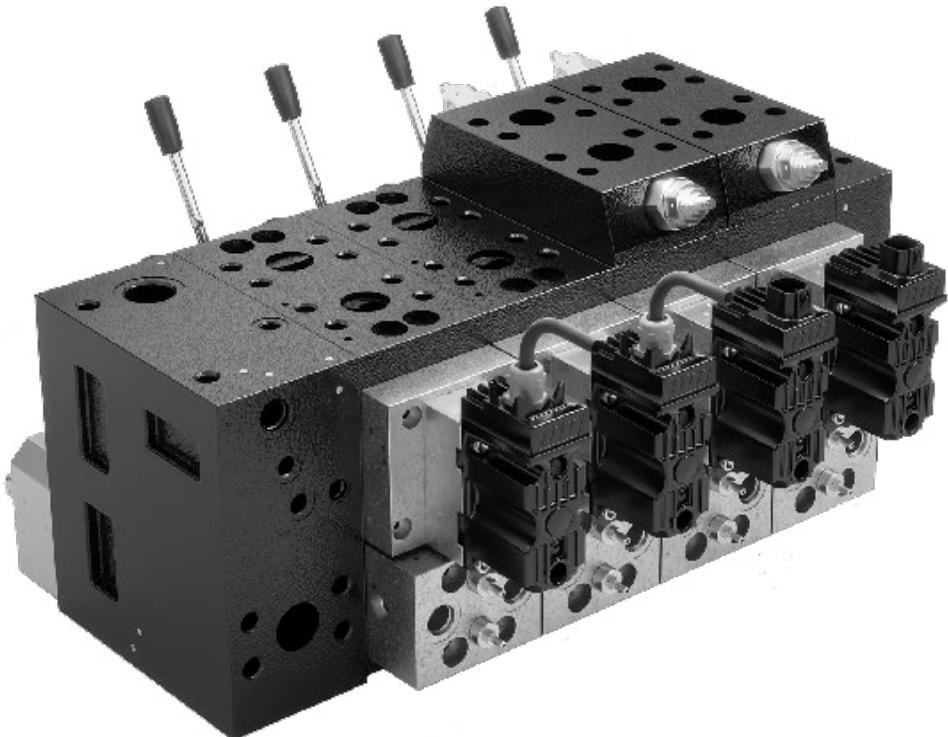
Parts of machinery control systems that are assigned to provide safety functions are called safety-related parts of control systems and these can consist in hydraulic valves with hardware and software, and can either be separate from the machine control system or an integral part of it.

PDV units, can be requested to be applied as " logic units to ensure safety functions in accordance with Machine Directive EN 13849".

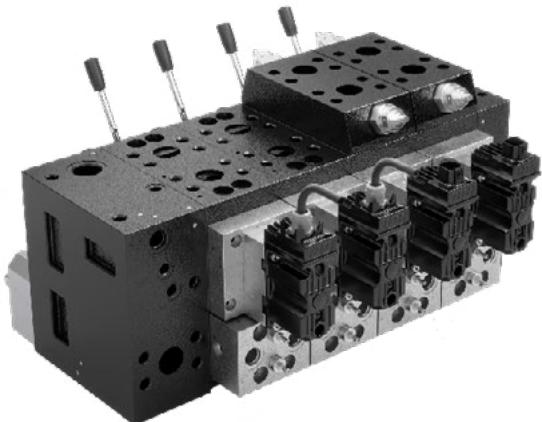
For the purpose of this part of Machine Directive, the ability of safety-related parts to perform a safety function is expressed through the determination of the performance level.

To make the assessment of the quantifiable aspects of the PL easier, this part of EN 13849 provides a simplified method based on the definition of five designated architectures that fulfil specific design criteria and behaviour under a fault condition.

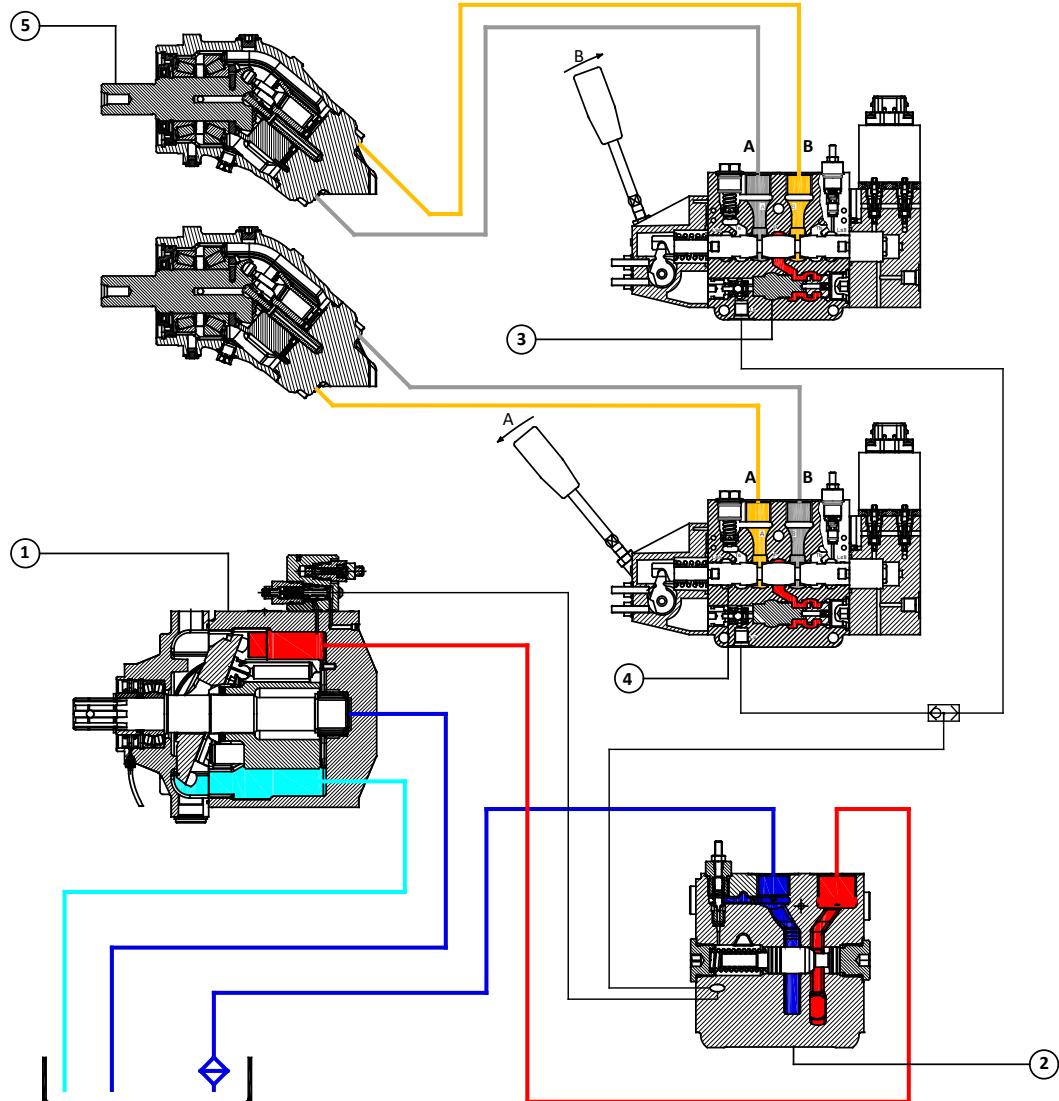
Therefore, the machine builder or system integrator have full accountability for making the final products selection and assuring that all performance, safety and warning requirements of the application are being met.



General description	298.
PIU , solenoid LS, unloading valves	302.
PDS , flow control spool	306.
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Modules and code numbers	312.
Shock and suction valves	317.
PDL , Electrical LSA/B, unloading	319.
PDLD , Proportional Electrical LSA/B, unloading	323.
PEAC131 , Proportional closed loop spool control input signal 0,5 Udc	324.
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PEAC031 , Proportional open loop spool control input signal 0,5 Udc	348.
PEAC032 , Proportional open loop spool control input signal control 0 \pm 10 V	355.
PEAC036 , Proportional open loop spool control input signal control 4 \pm 20 mA	362.
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Overall dimension drawing	382.
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**PDV315 main features:**

- Load sensing up-stream pressure compensation
- High flow/low pressure drop capability
- Integrated pump unloading system
- Integrated cut-off pump system
- Open/closed centre shifting system
- Precise metering capabilities
- LSA-LSB electrical unloading
- LSA-LSB electrical working pressure remote control
- Constant flow regardless of pressure
- Working sections symmetrical flow
- Optional priority inlet for steering or different priority functions
- Optional dual hydraulic pilot and electrohydraulic control
- ATEX and IECEx configuration
- CAN-Bus communication
- EMC immunity ensures high safety with regard to electro-magnetic compatibility



High pressure port of **PPV** piston pump ① supply the closed centre inlet section of **PDV315** proportional valve ② which in turn feeds the down-stream working sections.

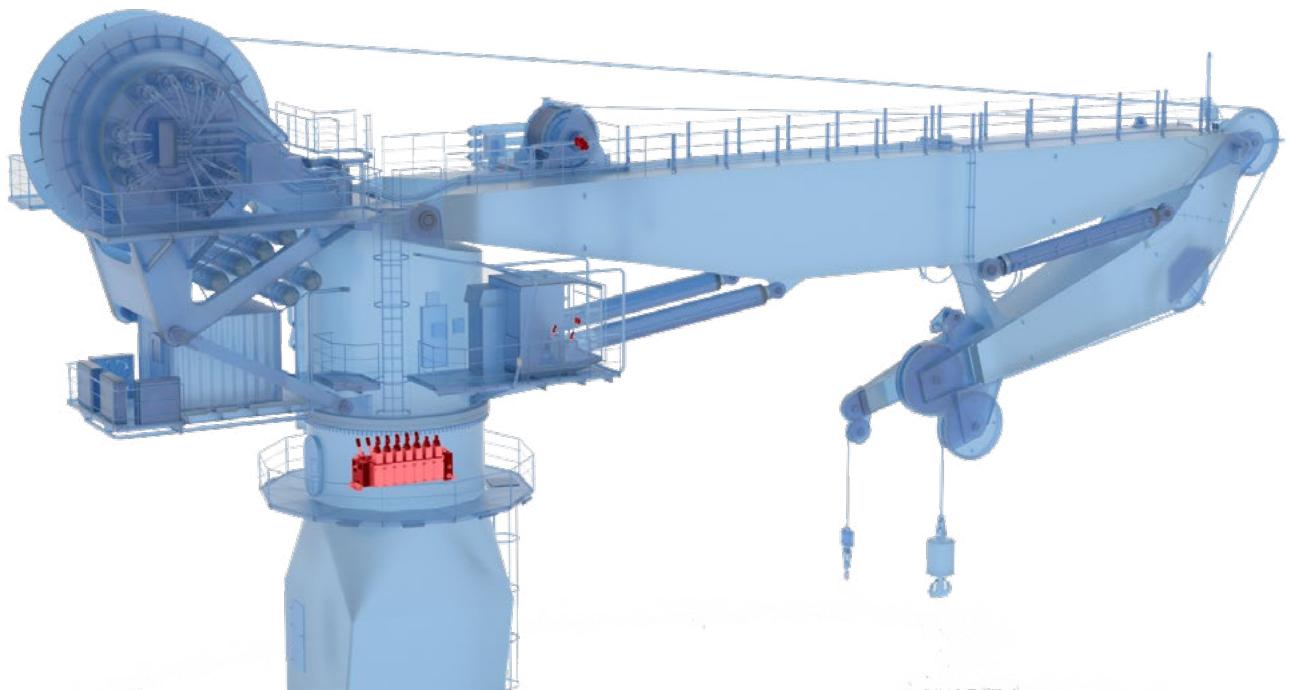
The **PDS** spool neutral position ④ unload the LS pump signal to tank, so that the swashplate angle is towards the minimum displacement and pressure in stand-by setting.

The spool position determines the flow demands (speed rotation) of the two **HPM** motors ⑤.

The PDS main spool compares the pressure drop before and after the spool notches (differential pressure Δp), and therefore, the pump flow remain constant.

If the differential pressure increase, the pump swashplate is swivelled back towards the minimum displacement, and if the differential pressure decrease, the swashplate angle increase towards the max flow displacement until balance is restored within the valve.

Actuators load determines the working pressure, and the built-in pressure compensator ③ enable simultaneously function regardless of different working pressure.



- 1. PPV90 load sensing piston pump**
- 2. Pump slitter gear box**
- 3. I/O controller PHSI7101008**
- 4. PDV74/6 closed centre inlet**
- 5. Electronic double axis joystick PEJD**
- 6. Graphic display PDHI703000**
- 7. PPM40 piston motors**

The hydraulic features listed in this chart, are typical measured data obtained by using mineral based hydraulic oil according to DIN 51524 with a viscosity of 21 mm²/sec [102 SUS] and a temperature of 50 °C [122 °F]

Oil flow rate	PDI inlet section, P port		600 l/min (max)	158 US gal/min		
	PDIM - Mid inlet section, P port		600 l/min	158 US gal/min		
	A, B port with pressure compensator		500 l/min	132 US gal/min		
Max. pressure	P port	Pressure relief valve setting	400 bar	5800 psi		
		Working pressure	370 bar	5370 psi		
	A, B port		370 bar	5370 psi		
	Ty port, directly to tank					
	T port	Static	25 bar	363 psi		
		Dynamic	35 bar	508 psi		
Max. pilot pressure oil supply			30 bar	435 psi		
Oil temperature	Recommended		30 ÷ 65 °C	86 °F ÷ 149 °F		
	Min		-30 °C	-22 °F		
	Max		90 °C	194 °F		
Ambient temperature			-30 ÷ 60 °C	-22 ÷ 140 °F		
Oil viscosity	Operating range		12 ÷ 75 mm ² /sec	65 ÷ 347 SUS		
	Min		4 mm ² /sec	39 SUS		
	Max		460 mm ² /sec	2128 SUS		
Spool stroke	Standard		9 mm	0,35 in		
	Flow control proportional range		7,5 mm	0,3 in		
	Pressure control proportional range		7,5 mm	0,3 in		
Daed band spool	Flow control		1,5 mm	0,06 in		
	Pressure control		1,5 mm	0,06 in		
Max internal leakage A/B port at 100 bar [1450 psi] and 21 mm ² /sec			A/B T without shock valves	100 cm ³ /min		
			A/B T with shock valves	115 cm ³ /min		
Filtration	Max. contamination: class 9 according to NAS 1638 (20/18/15 according to ISO 4406)					

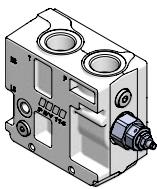
PDH module - hydraulic control

Pilot pressure	Spool start movement	4 bar / 58 psi
	Spool end stroke	15 bar / 218 psi
Max. pilot pressure		30 bar / 436 psi

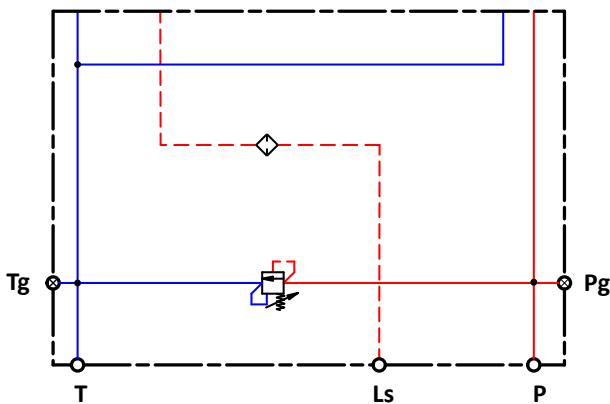
PDV74 internal filters, mesh 100 µm

Mineral oil hydraulic fluid: according to DIN 51524 and 51525 or ISO 6743/4 PDV74 can also be used with phosphate esters (HFDR), water-glycol (HFC) or water oil (HFB) mixes, subject to our Technical Dept. approval

Product



Hydraulic diagram



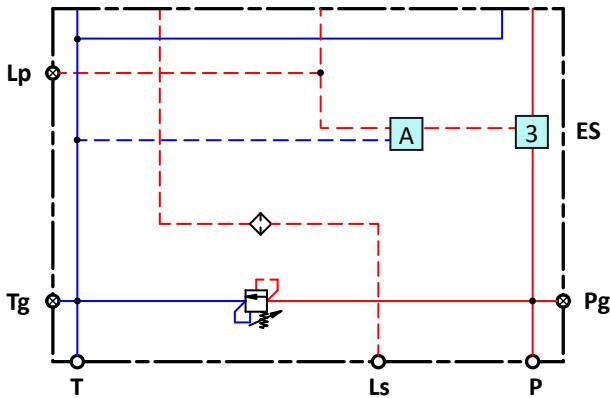
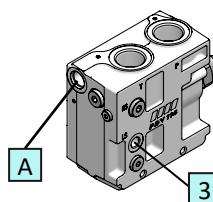
Description

For mechanically actuated valves, only

Code numbers

PDI01C30000	PDI01C30010
BSPP	UN-UNF

Connections thread see page [249](#)

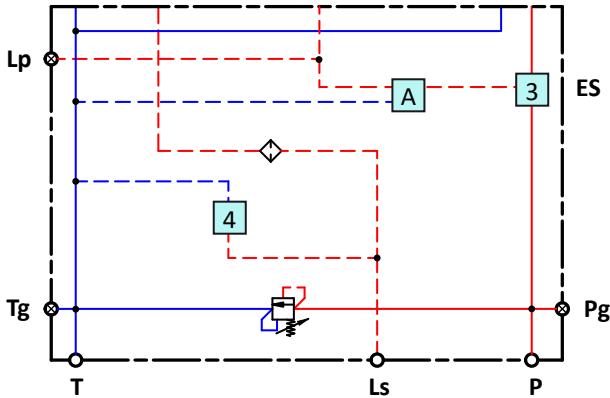
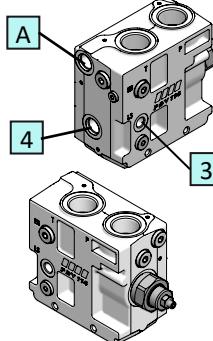


With pilot oil supply for electrically and hydraulic actuated valves [3](#)

Code numbers

PDI01C40000	PDI01C40010
BSPP	UN-UNF

Connections thread see page [249](#)



With pilot oil supply for electrically and hydraulic actuated valves [4](#) and facility for LS unloading [3](#)

Code numbers

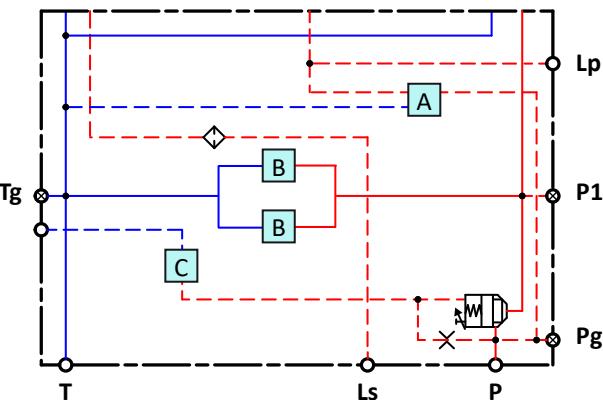
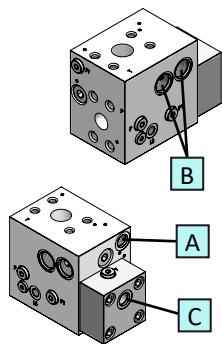
PDI01C41000	PDI01C41010
BSPP	UN-UNF

Connections thread see page [249](#)

Product

Hydraulic diagram

Description



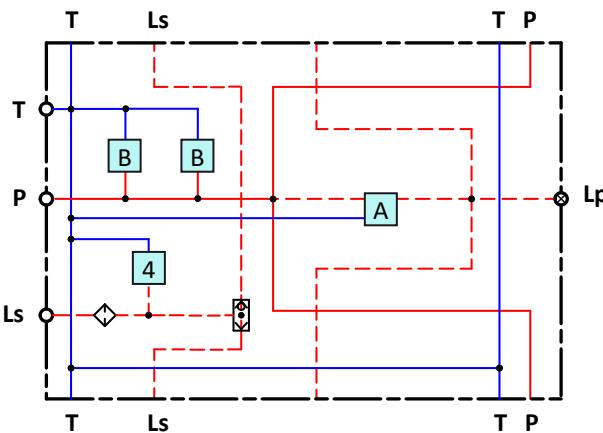
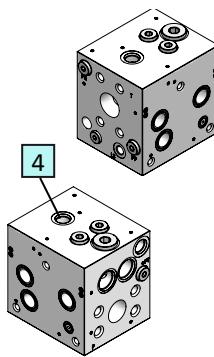
With pilot oil supply for electrically and hydraulic actuated valves [3] and cut-off system

Code numbers

PDI01C44000	PDI01C44010
-------------	-------------

BSPP	UN-UNF
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Connections thread see page [249](#)



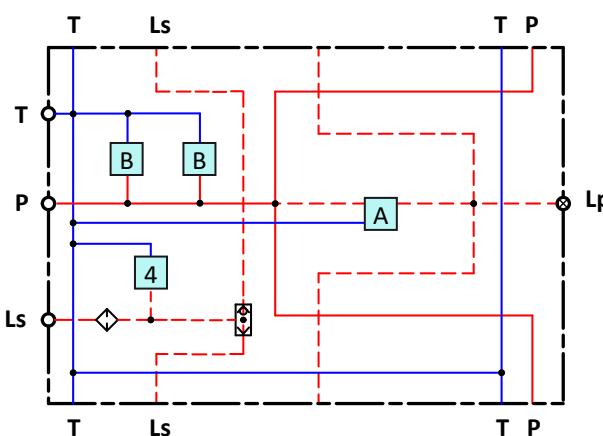
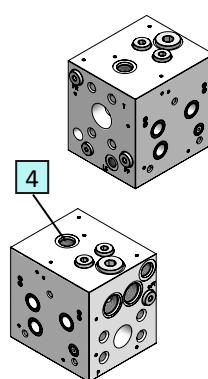
MID inlet PDV114 with pilot oil supply for electrically and hydraulic actuated valves and facility for LS unloading [4]

Code numbers

PDIM1C41000	PDIM1C41010
-------------	-------------

BSPP	UN-UNF
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Connections thread see page [261](#)



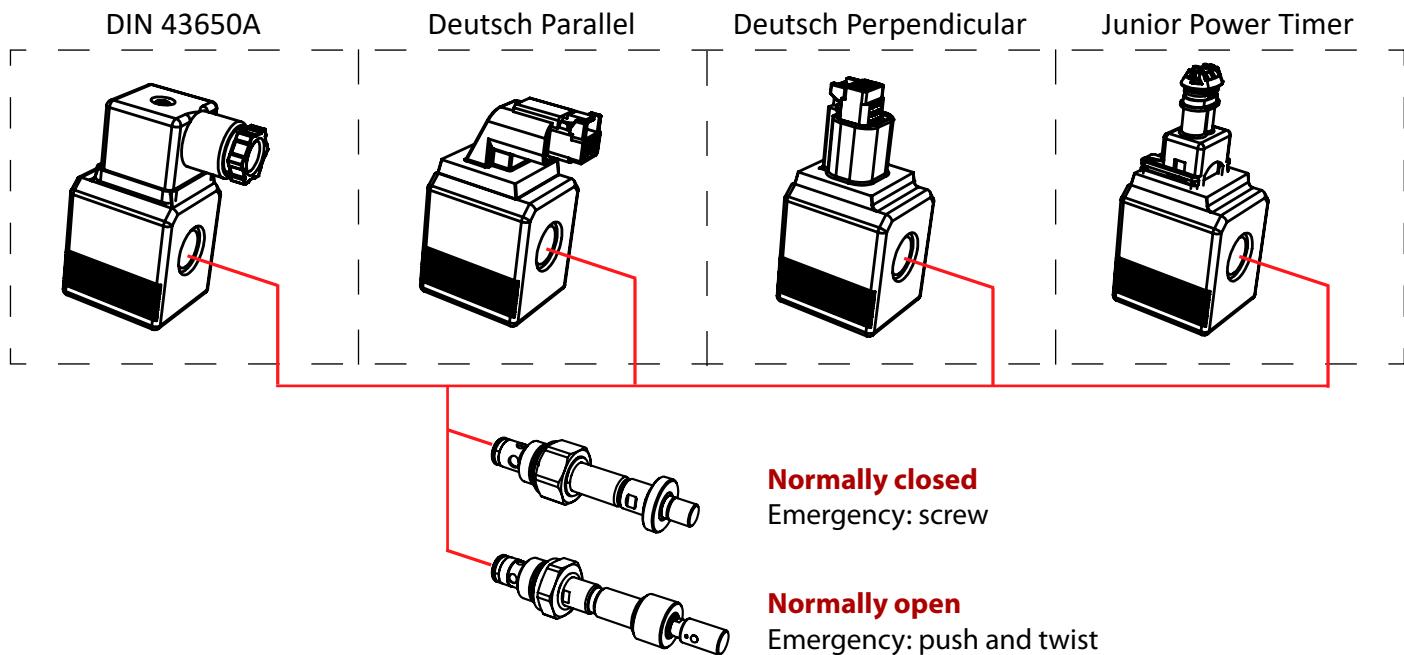
MID inlet PDV117 with pilot oil supply for electrically and hydraulic actuated valves and facility for LS unloading [4]

Code numbers

PDIM4C41000	PDIM4C41010
-------------	-------------

BSPP	UN-UNF
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Connections thread see page [166](#)



Code numbers PIU solenoid LS unloading valve codes			
Cartridge valve type	Connector type	12 Vdc	24 Vdc
Normally closed Emergency: screw 	DIN 43650A	PIU0C023200	PIU0C013200
	Deutsch Parallel	PIU0C021200	PIU0C011200
	Deutsch Perpendicular	PIU0C022200	PIU0C012200
	Junior Power Timer	PIU0C024200	PIU0C014200
Normally open Emergency: push and twist 	DIN 43650A	PIU0A023100	PIU0A013100
	Deutsch Parallel	PIU0A021100	PIU0A011100
	Deutsch Perpendicular	PIU0A022100	PIU0A012100
	Junior Power Timer	PIU0A024100	PIU0A014100

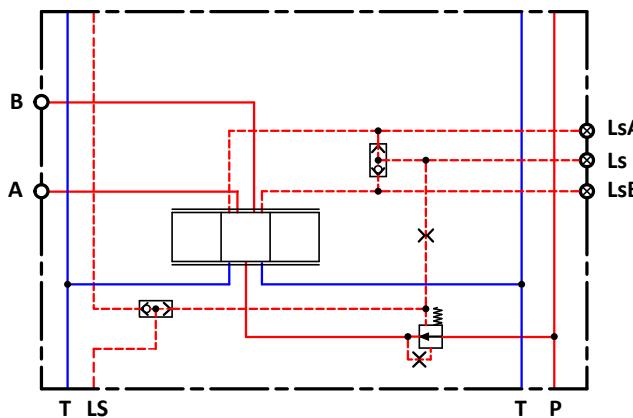
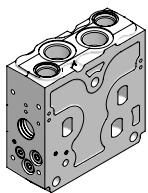
Plug for LS unloading cavity		
Plug cavity	Hydraulic scheme	Code numbers
		PIP10000000

Max. operating pressure	350 bar	
Max. internal leakage	350 bar, 46 mm ² /sec 1 cm ³ /min	
max pressure drop	< 1,5 bar	
Expected life - 350 bar, 0,5 Hz (1s on / 1s off)	10.000.000 cycles	
Response time for LS pressure relief	< 280ms	
Oil temperature	Recommended	30 ÷ 60 °C
	Min.	-30 °C
	Max.	90 °C
Ambient temperature	-30 ÷ 60 °C	
Max. coil surface temperature	160 °C	
Oil viscosity	Operating range	10 ÷ 90 cSt
	Min.	4 mm ² /sec
	Max.	460 mm ² /sec
Degree of enclosure	Connector DIN 43650	IP65
	Connector Deutsch DT04-2p	IP67
		IP69K integrated to coil
Rated voltage	12 Vdc	24 Vdc
Supply voltage	10,6 ÷ 14,6 Vdc	20,4 ÷ 28,6 Vdc
Working temperature	-30 ÷ 80 °C	
Maximum coil surface temperature	175 °C	
Heat insulation	Class H (180 °C)	
Resistance	7,5 Ω	29,9 Ω
Current consumption	1,6 A	0,8 A
Power consumption	19 W	

Product

Hydraulic diagram

Description



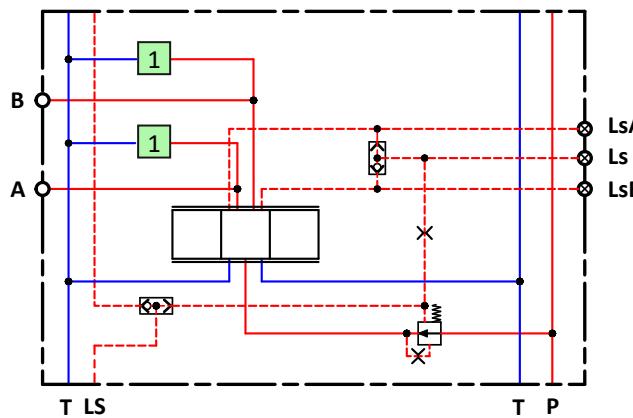
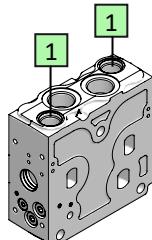
No facilities for shock-suction valves
No facilities for LS A/B pilot relief valves

Code numbers

PDW11000000	PDW11000010
-------------	-------------

BSPP	UN-UNF
------	--------

A/B ports 3/4"	A/B ports
Ls-LsA-LsB remote	1-1/16"-12UNF-2B
pressure connections	Ls-LsA-LsB remote
1/4"	pressure connections
	7/16"-20UNF-2B



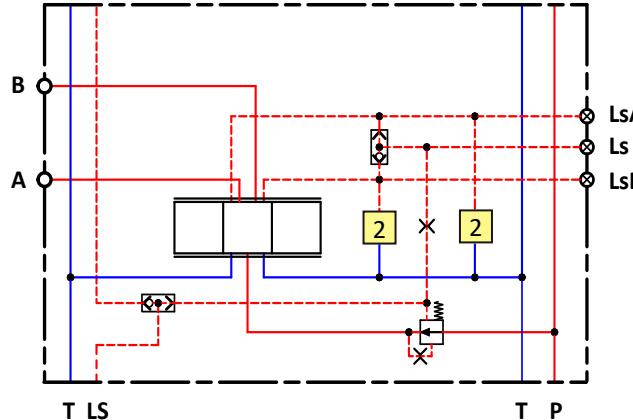
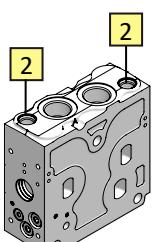
Facilities for shock-suction valves **1**
No facilities for LS A/B pilot relief valves

Code numbers

PDW11010000	PDW11010010
-------------	-------------

BSPP	UN-UNF
------	--------

A/B ports 3/4"	A/B ports
Ls-LsA-LsB remote	1-1/16"-12UNF-2B
pressure connections	Ls-LsA-LsB remote
1/4"	pressure connections
	7/16"-20UNF-2B



No facilities for shock-suction valves
Facilities for LS A/B pilot relief valves **2**

Code numbers

PDW11100000	PDW11100010
-------------	-------------

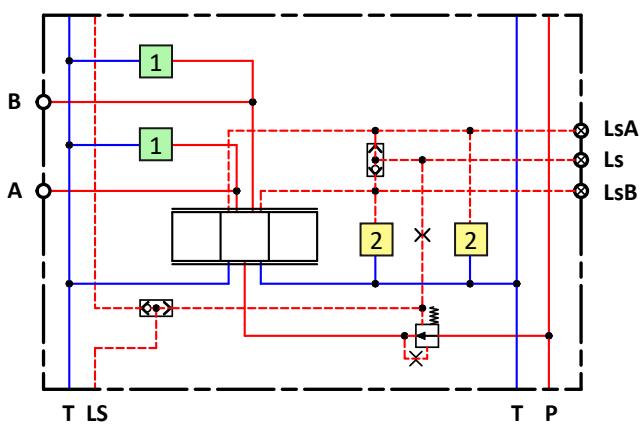
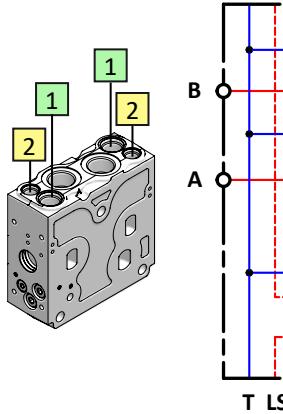
BSPP	UN-UNF
------	--------

A/B ports 3/4"	A/B ports
Ls-LsA-LsB remote	1-1/16"-12UNF-2B
pressure connections	Ls-LsA-LsB remote
1/4"	pressure connections
	7/16"-20UNF-2B

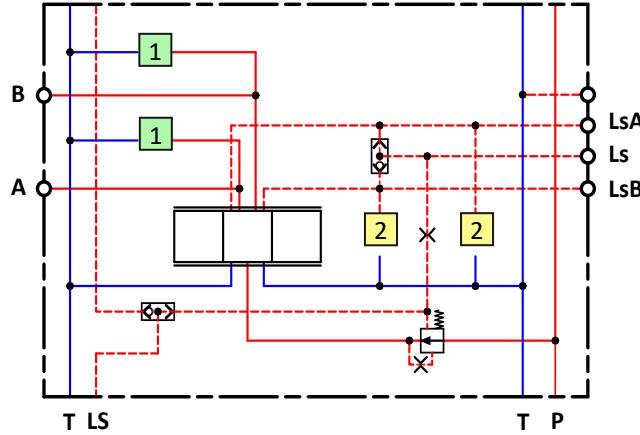
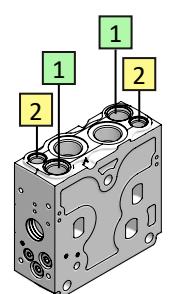
Product

Hydraulic diagram

Description



Facilities for shock-suction valves	1
Facilities for LS A/B pilot relief valves	2
Code numbers	
PDW11110000	PDW11110010
BSPP	UN-UNF
A/B ports 3/4" Ls-LsA-LsB remote pressure connections 1/4"	A/B ports 1-1/16"-12UNF-2B Ls-LsA-LsB remote pressure connections 7/16"-20UNF-2B

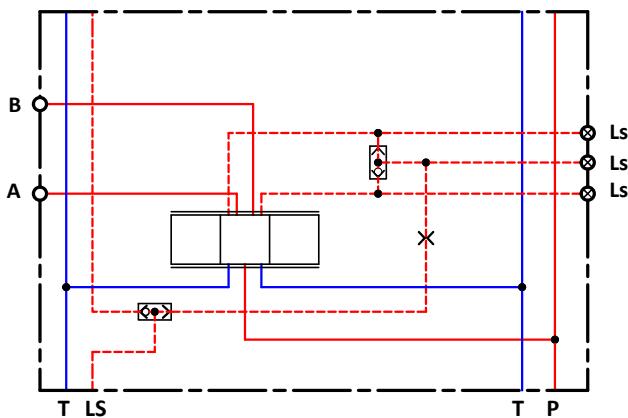
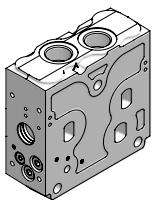


Facilities for shock-suction valves	1
Facilities for LS A/B pilot relief valves and electric unloading LS A/B piloting	2
Code numbers	
PDW11110000	PDW11110010
BSPP	UN-UNF
A/B ports 3/4" Ls-LsA-LsB remote pressure connections 1/4"	A/B ports 1-1/16"-14UNF-2B Ls-LsA-LsB remote pressure connections 7/16"-20UNF-2B

Product

Hydraulic diagram

Description



No facilities for shock-suction valves

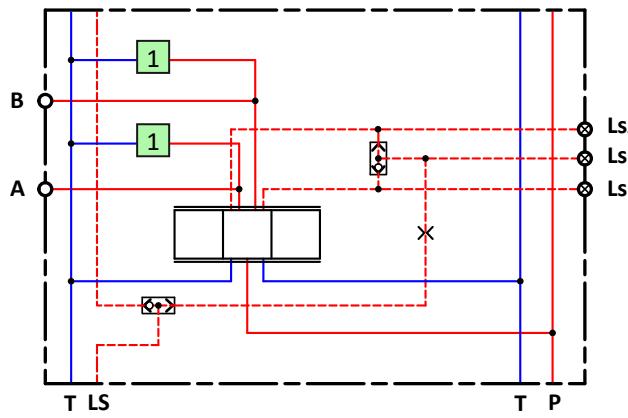
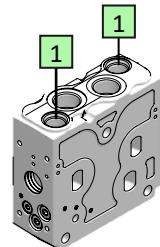
Code numbers

PDW10000000	PDW10000010
-------------	-------------

BSPP

UN-UNF

A/B ports 3/4"
Ls-LsA-LsB piloting
connections 1/4"
A/B ports
1-1/16"-12UNF-2B
Ls-LsA-LsB piloting
connections
7/16"- 20UNF - 2B



Facilities for shock-suction valves 1

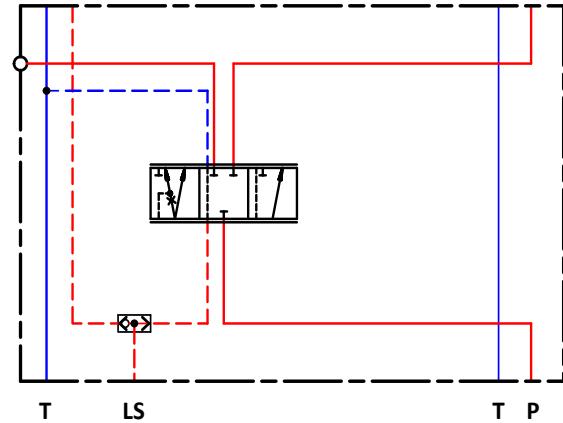
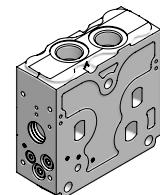
Code numbers

PDW10010000	PDW10010010
-------------	-------------

BSPP

UN-UNF

A/B ports 3/4"
Ls-LsA-LsB piloting
connections 1/4"
A/B ports
1-1/16"-12UNF-2B
Ls-LsA-LsB piloting
connections
7/16"- 20UNF - 2B

Functional safety cut off system
and diverter flow

Code numbers

PDW15000000	PDW15000010
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BSPP

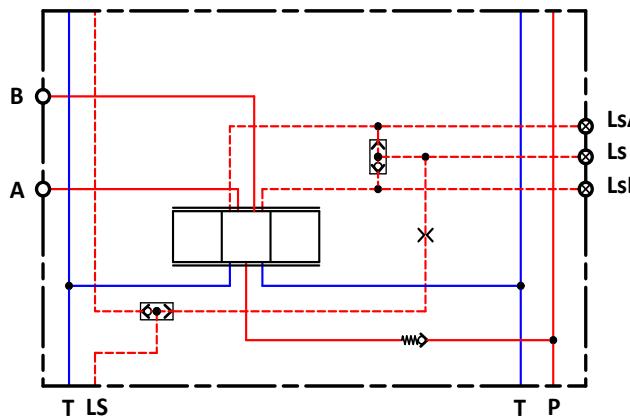
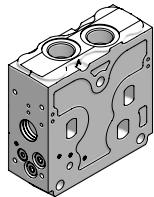
UN-UNF

A/B ports 3/4"
Ls-LsA-LsB piloting
connections 1/4"
A/B ports
1-1/16"-12UNF-2B
Ls-LsA-LsB piloting
connections
7/16"- 20UNF - 2B

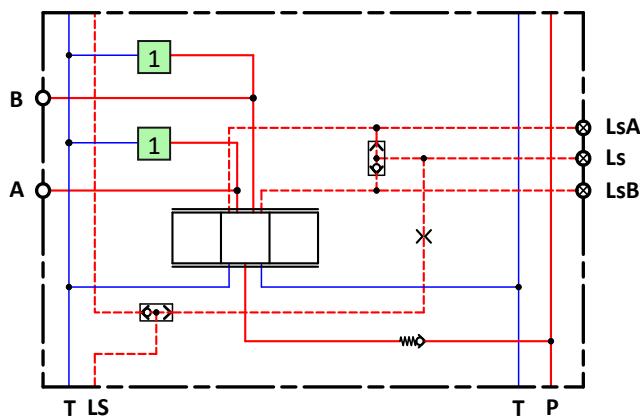
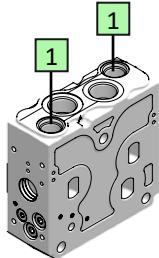
Product

Hydraulic diagram

Description

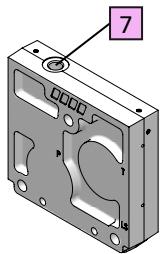


No facilities for shock-suction valves With load drop check valve on P channel	
Code numbers	
PDW13000000	PDW13000010
BSPP	UN-UNF

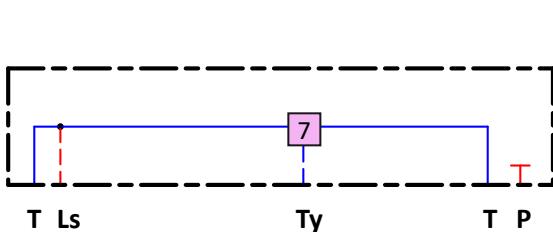


Facilities for shock-suction valve	1
With load drop check valve on P channel	
Code numbers	
PDW13010000	PDW13010010
BSPP	UN-UNF
A/B ports 3/4" Ls-LsA-LsB piloting connections 1/4"	A/B ports 1-1/16"-12UNF-2B Ls-LsA-LsB piloting connections 7/16" - 20UNF - 2B

Product



Hydraulic diagram



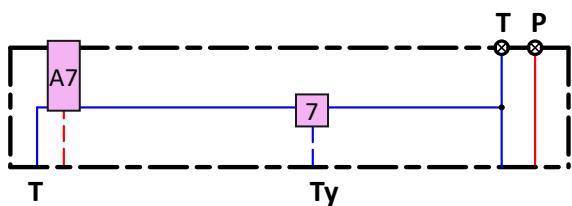
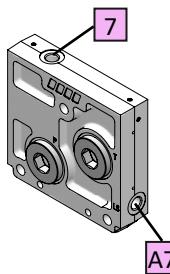
Description

No ported, prearranged for external/internal drain 7

Code numbers

PDE01010000	PDE01010010
BSPP	UN-UNF

Connections thread see page [249](#)

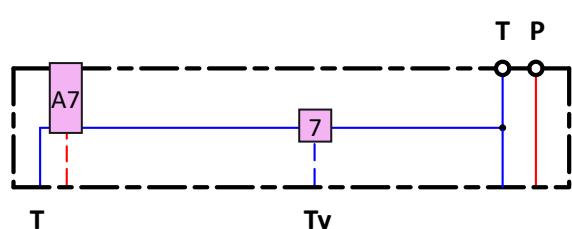
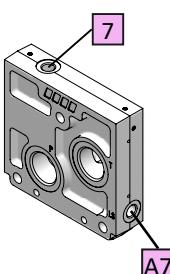


Ls port A7 prearranged for external/internal drain 7

Code numbers

PDE01210000	PDE01210010
BSPP	UN-UNF

Connections thread see page [_____](#)



P-T-Ls ports A7 prearranged for external/internal drain 7

Part number

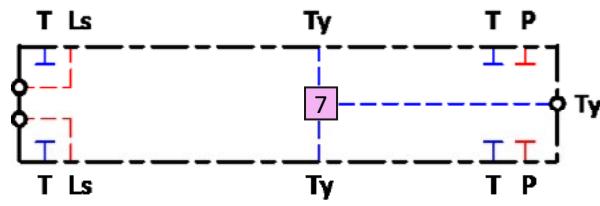
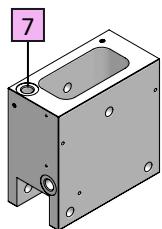
PDE01110000	PDE01110010
BSPP	UN-UNF

Connections thread see page [_____](#)

Product

Hydraulic diagram

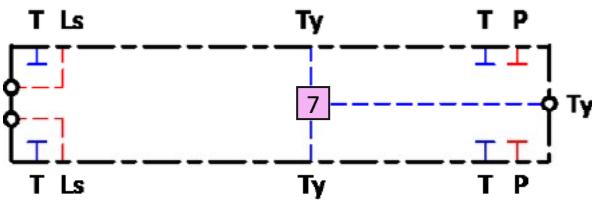
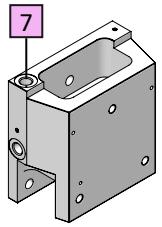
Description



Mid End PDV114

Code numbers

PDEM1010000	PDEM1010010
BSPP	UN-UNF

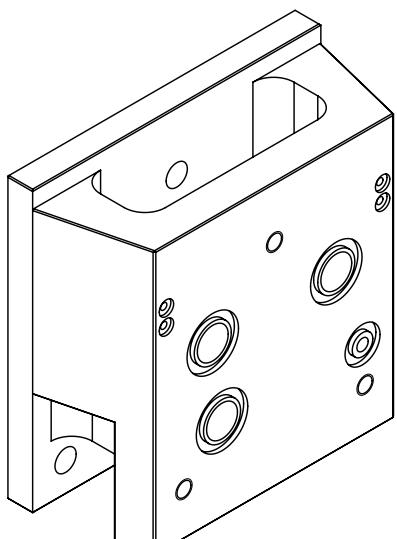
Connections thread see page [255](#)

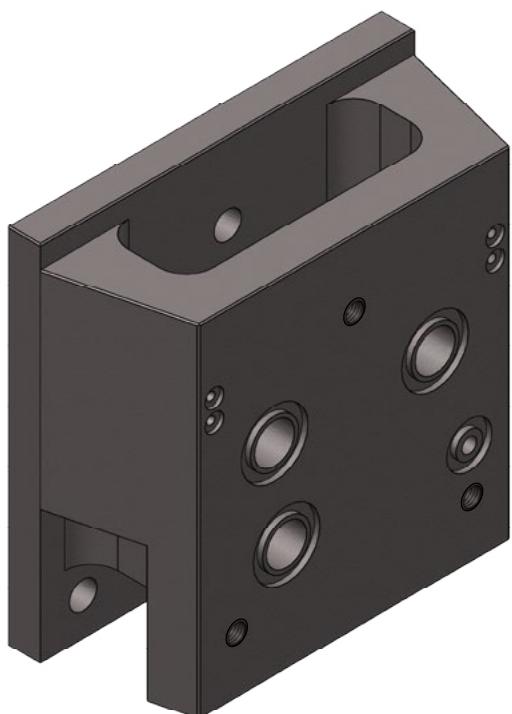
Mid End PDV117

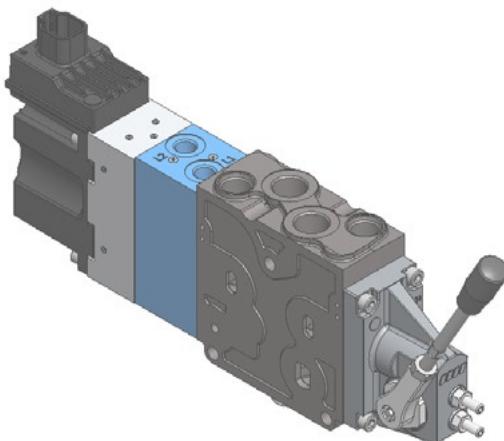
Code numbers

PDEM4010000	PDEM4010010
BSPP	UN-UNF

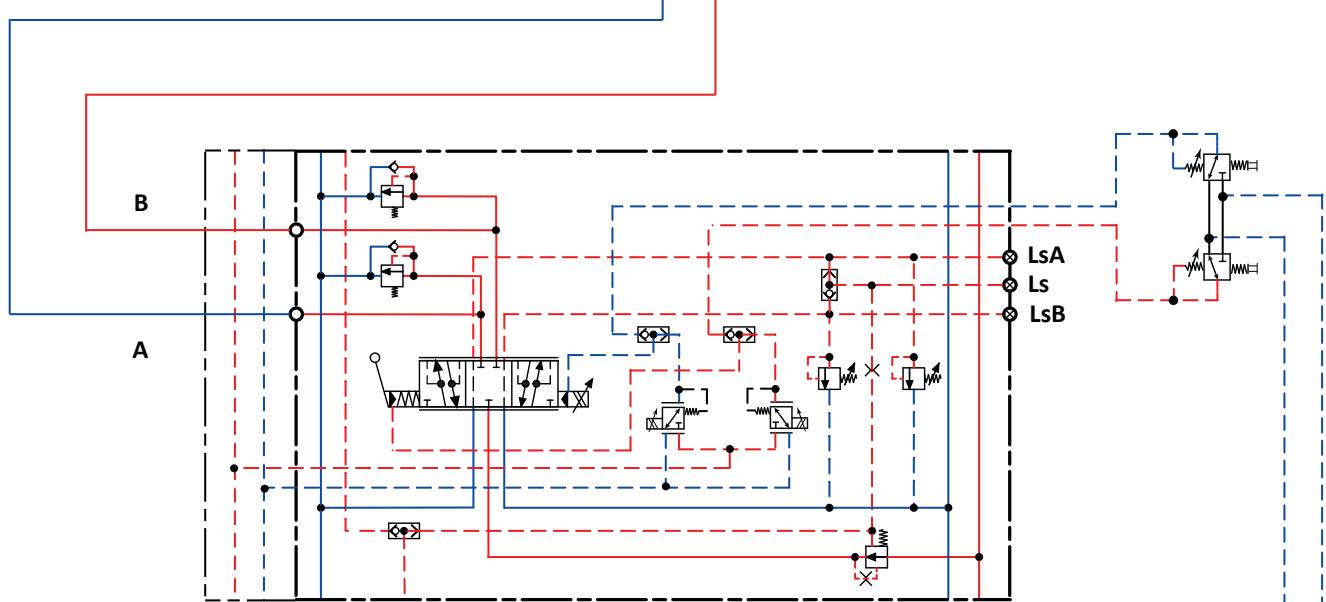
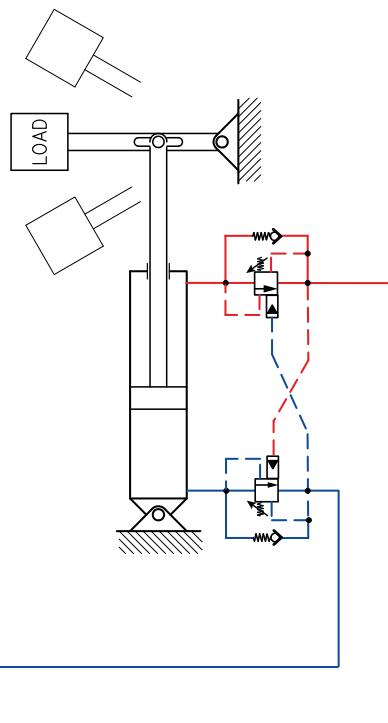
Connections thread see page [265](#)

	Description	
		PDEI4000000





PDZ is a small HIC body that can be matched with any kind of PDV74 working section PDW, to get hydraulic and electro-hydraulic spool control

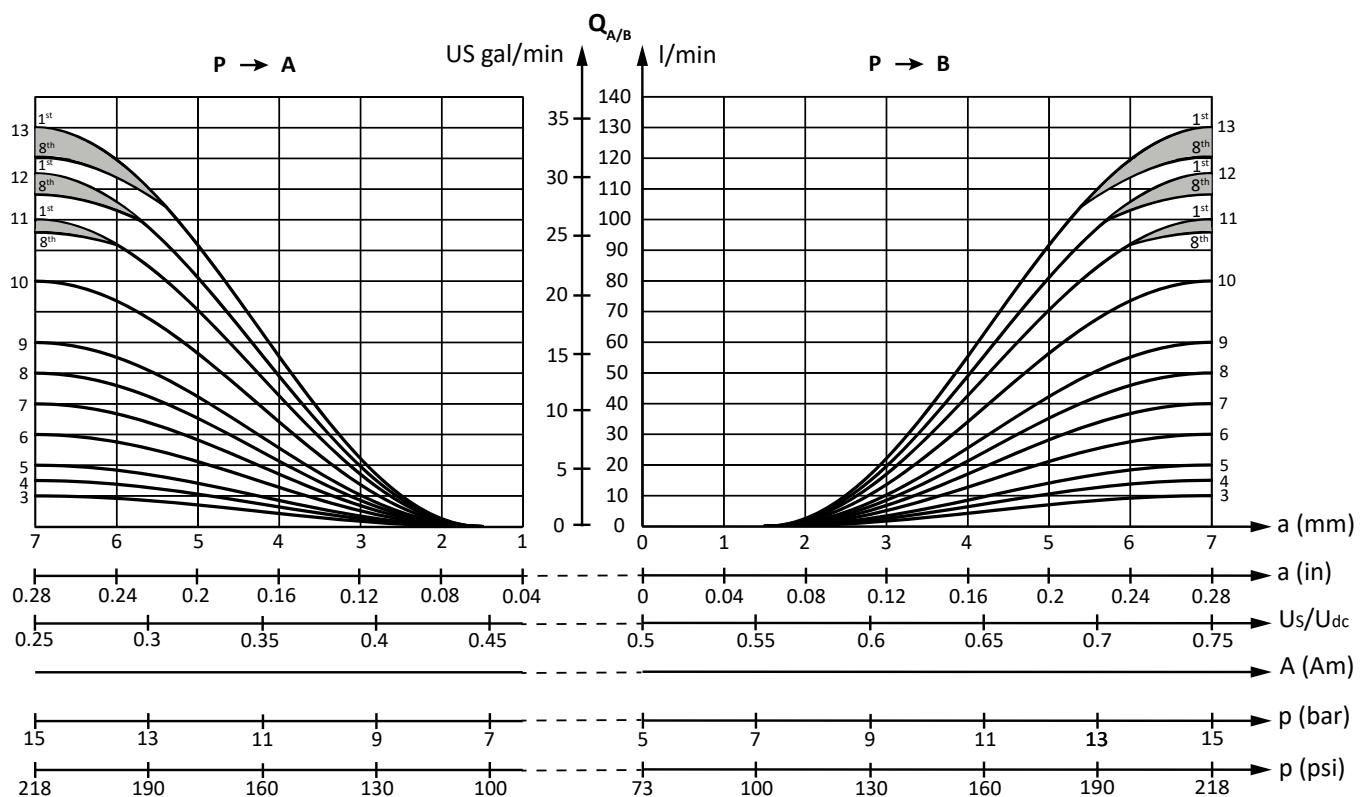
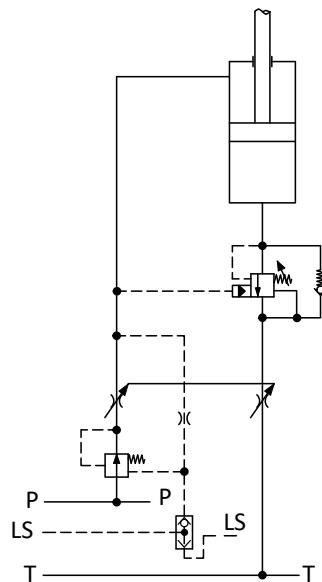


PDZ overall dimensions	For open loop spool control	For closed loop spool control
	PDZ70000000 1/4" BSPP - 12 mm deep	PDZ 1/4" BSPP - 12 mm deep
	PDZ [7/16 in-20 UNF-2B - 0,47 in deep]	PDZ [7/16 in-20 UNF-2B - 0,47 in deep]

Oil flow characteristics

With flow control spool, the oil flow depends on type of PDW module (with or without pressure compensator) and type of pump (fixed or variable displacement).

In the below chart, the ordinate numbers refer to spool size, and the ordinal numbers refer to the same spool size but fitted in a different position with related lost flow.



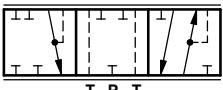
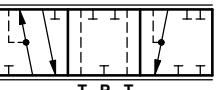
Double acting flow control spool

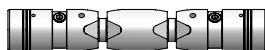
Size	Max oil flow pressure compensated l/min	Code numbers and symbol			
1					
2					
3					
4					
5					
5,5					
6					
7					
8					
9					
10					
11					
12					
13					

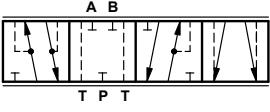
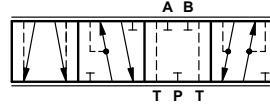
Double acting asymmetric flow control spool

Max oil flow pressure compensated l/min		Code numbers and symbol			
A	B	4-way, 3-position - A, B closed	4-way, 3-position, A, B to T	4-way, 3-position, B to T, A closed	4-way, 3-position, A to T, B closed
15	7,5				
20	40				
25	15				
30	40				
40	20				
40	30				
40	60				
50	30				
60	40				
65	30				
75	30				
80	40				
110	40				
130	60				

Single acting flow control spool

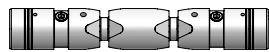
Size	Max oil flow pressure compensated l/min	Symbol and code numbers	
		 3-way, 3-position P → A	 3-way, 3-position P → B
1	7,5		
2	15		
3	20		
4	30		
5	40		
6	50		
7	60		
8	80		
9	100		

Double acting flow control spool, floating position

Size	Max oil flow pressure compensated l/min	Symbol and code numbers	
		 3-way, 4-position floating position on A port	 3-way, 4-position floating position on B port
1	10		
2	15		
3	25		
4	40		
5	50		

Spool centered set, code numbers (needed for any kind of flow control spool)

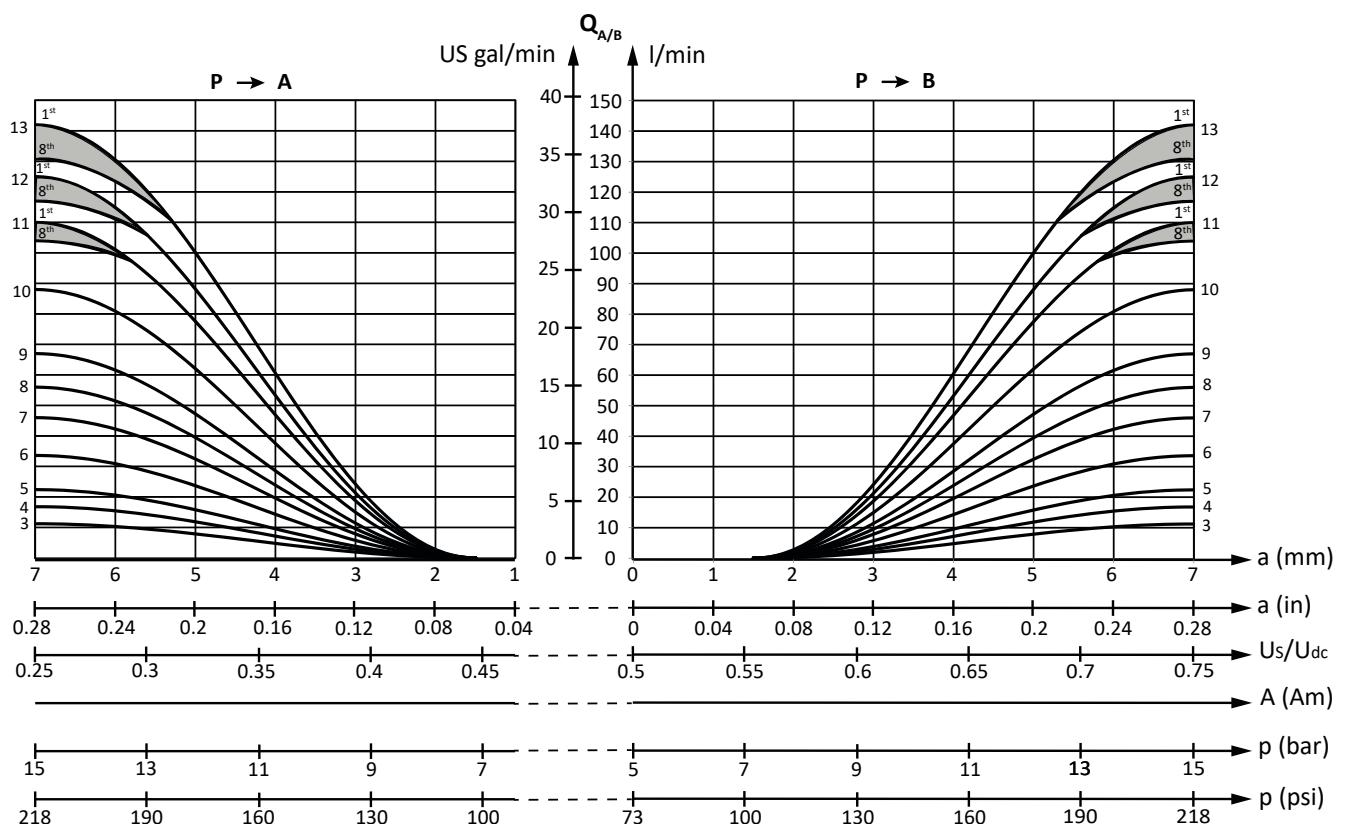
Tightening torque		Tightening torque
6 ⁺¹ ₀ Nm		6 ⁺¹ ₀ Nm
53,1 ^{+8,85} ₀ lb*in		53,1 ^{+8,85} ₀ lb*in
Manual control	PDR00300101	
Hydraulic - Electrohydraulic	PDR00300102	

Double acting flow control, regenerative function

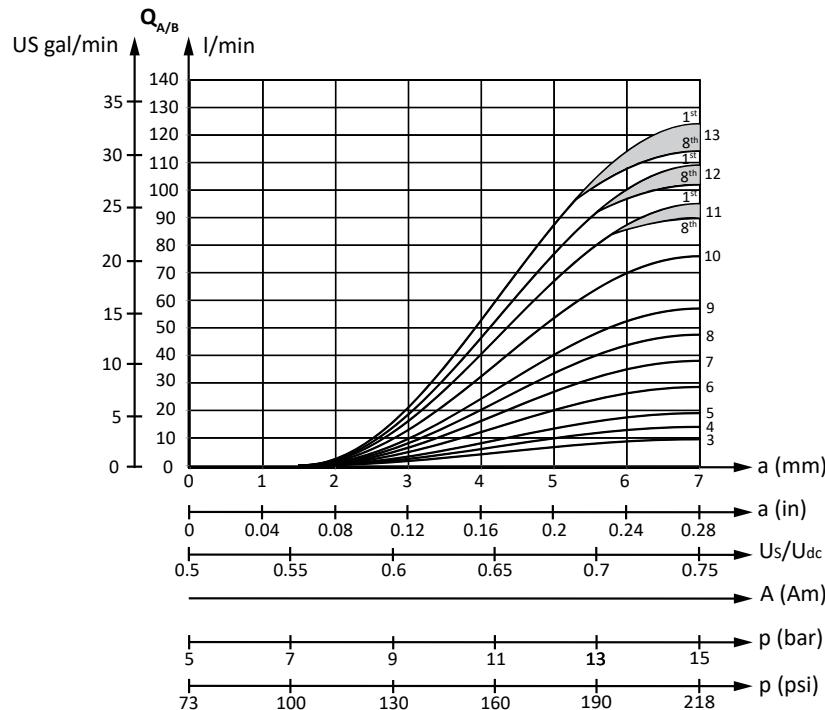
Size	Max oil flow pressure compensated l/min	Symbol and code numbers	
		 A B	 A B
		Regenerative circuit on A port	Regenerative circuit on B port
1	7,5		
2	15		
3	20		
4	30		
5	40		
6	50		
7	60		
8	80		
9	100		
10	130		

Spool centered set, code numbers (needed for any kind of flow control spool)

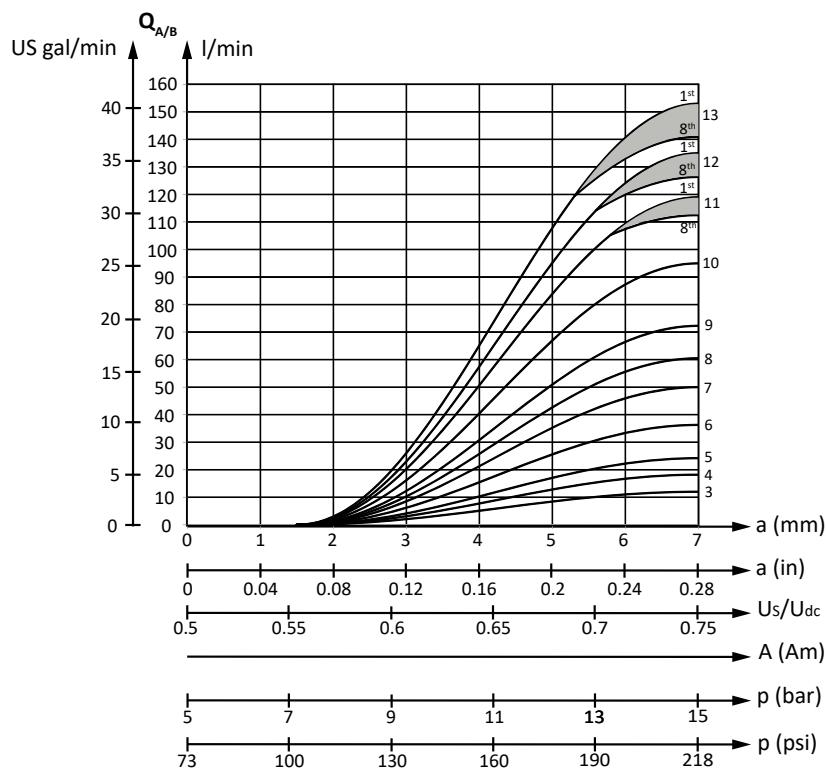
Tightening torque		Tightening torque
6 ^{±1} Nm		6 ^{±1} Nm
53,1 ^{±8,85} lb*in		53,1 ^{±8,85} lb*in
Manual control		PDR00300101
Hydraulic - Electrohydraulic		PDR00300102

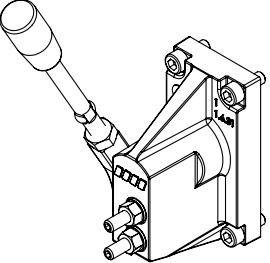
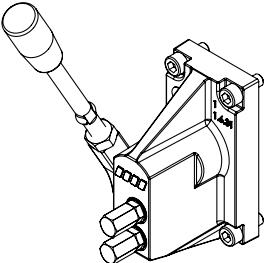
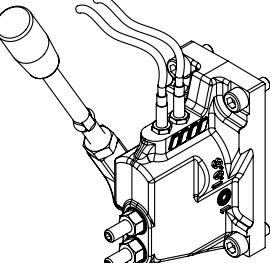
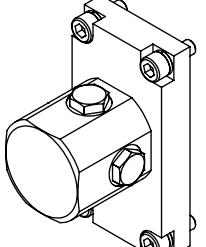
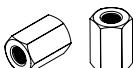


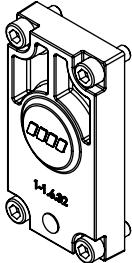
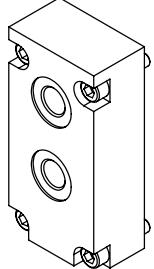
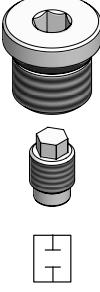
Oil flow characteristics PDW without pressure compensator, and pump differential pressure setting = 16 bar

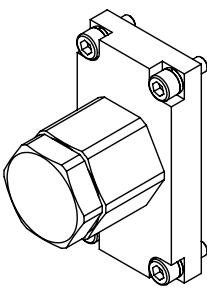
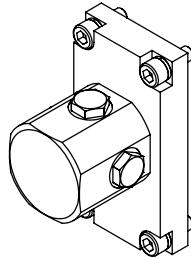


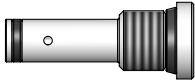
Oil flow characteristics PDW without pressure compensator, and pump differential pressure setting = 25 bar



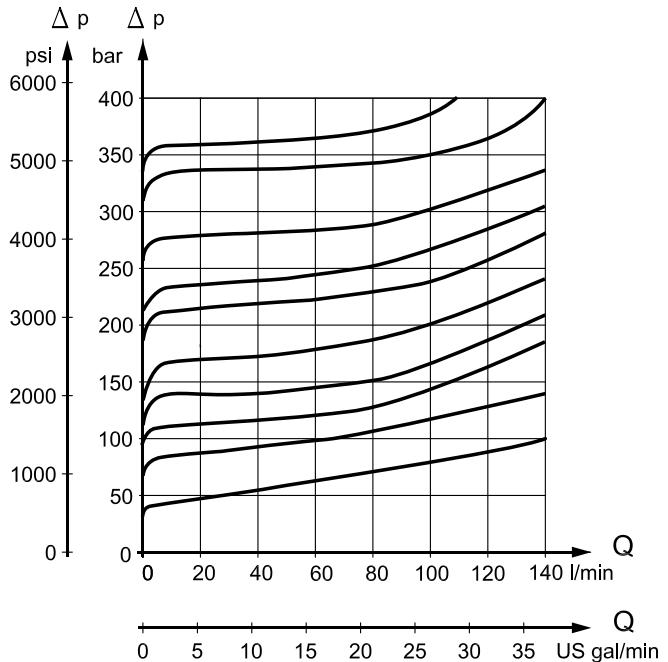
Product	Description	Aluminium	Cast iron
PDM 	Mechanical actuation	With lever	
		PDM10101000	PDM11101000
	Without lever		
		PDM101000000	PDM11100000
PDM 	Mechanical actuation, with flow adjustment nuts protection	PDM10200000	PDM11200000
PDM 	Mechanical actuation with directional sensors for electrical monitoring of spool valve movement  Vcc 10 V ... 30 V IL < 200 mA	With lever	
		Normally closed: PDM1111100	
		Normally open: PDM1112100	
PDF 	Friction detent (for mechanical actuation only)	Cast iron only	
			PDF10000000
	Flow adjustment protection nuts for PDM mechanical control		

Product	Description	Aluminium	Cast iron
PDC 	Rear cover for mechanical actuation	PDC00000000	PDC10000000
PDH 	Hydraulic actuation	A/B pilot port 1/4 BSPP deep: 12 mm (0,47 in) PDH70000000	A/B pilot port 1/4 BSPP deep: 12 mm (0,47 in) PDH71000000
		A/B pilot port 7/16-20UNF-2B deep: 12 mm (0,47 in) PDH70000100	A/B pilot port 7/16-20UNF-2B deep: 12 mm (0,47 in) PDH71000100
	Pilot LS A/B relief valve	10 ÷ 40 bar	PLS0A100000
		41 ÷ 80 bar	PLS0A200000
		81 ÷ 380 bar	PLS0A400000
	Plug for pilot LS A/B relief valve cavity	PLS0P000000	

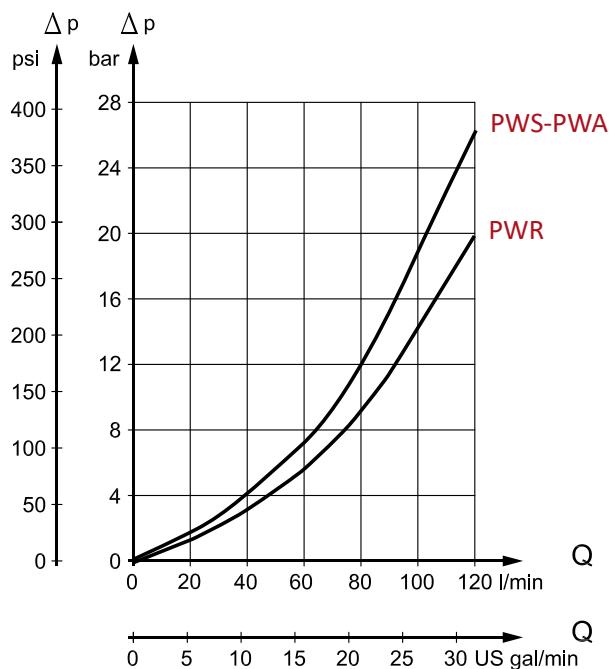
Product	Description	Aluminium	Cast iron
PDD 	Mechanical spool lock device, manual release	P→A - lock P→B - free PDD30100000	
		P→A - free P→B - lock PDD30010000	
		P→A - lock P→B - lock PDD30110000	
		P→A - float P→B - free PDD30200000	
		P→A - free P→B - float PDD30020000	
PDF 	Friction control		PDF12000001

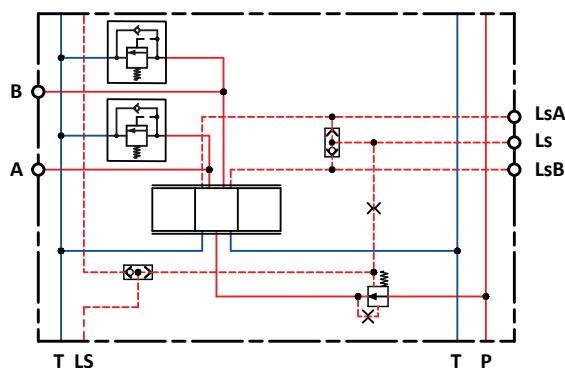
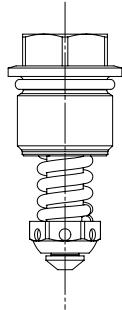
Product	Description	Code numbers	
PIZ 	For PDI with internal pilot oil supply		PIZ10000000
PIY 	For PDI with external pilot oil supply	A/B pilot port 1/4 BSPP deep: 12 mm (0,47 in) PIY10000000	A/B pilot port 7/16-20UNF-2B deep: 12 mm (0,47 in) PIY10000010
	For PDE with external drain line electrical actuation	A/B pilot port 1/4 BSPP deep: 12 mm (0,47 in) PED10000000	A/B pilot port 7/16-20UNF-2B deep: 12 mm (0,47 in) PED10000010
	For PDE with internal drain line electrical actuation		PEI10000000
	For PDE with LS carry-over	A/B pilot port 1/4 BSPP deep: 12 mm (0,47 in) PED20000000	A/B pilot port 7/16-20UNF-2B deep: 12 mm (0,47 in) PED20000010
	For PDE prearranged LS carry-over		PEI10000000

PWS, PWA and **PWB** are shock suction valves design to absorb shock effects only, and they should never be used as a pressure relief valves.
PWS, PWA and **PWB** are set at an oil flow of 10 l/min. If the hydraulic actuator requires a pressure relief valve function, a PDW module with built-in LS A/B pilot pressure limit valves should be used

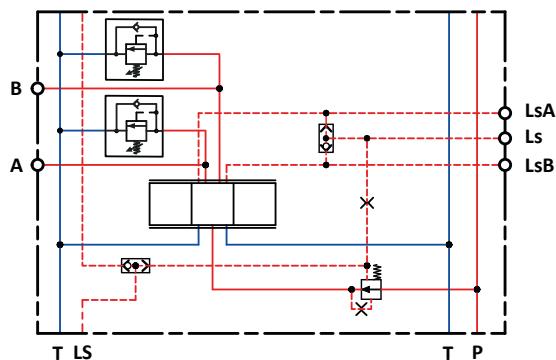
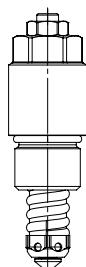


PWR suction valve

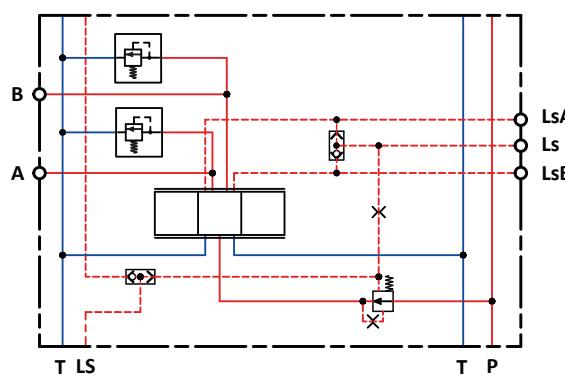
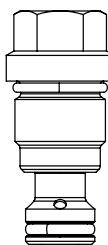


PWS shock and suction valve for A/B port. **Not adjustable**

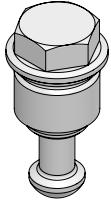
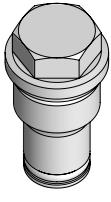
Setting Pressure(bar)	Code numbers
50	PWS7M180050
70	PWS7M180070
90	PWS7M180090
110	PWS7M180110
130	PWS7M180130
150	PWS7M180150
180	PWS7M180180
200	PWS7M180200
230	PWS7M180230
260	PWS7M180260
290	PWS7M180290
320	PWS7M180320
350	PWS7M180350
380	PWS7M180380

PWA shock and suction valve for A/B port. **Adjustable**

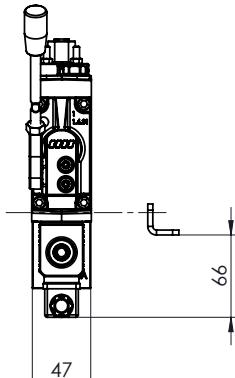
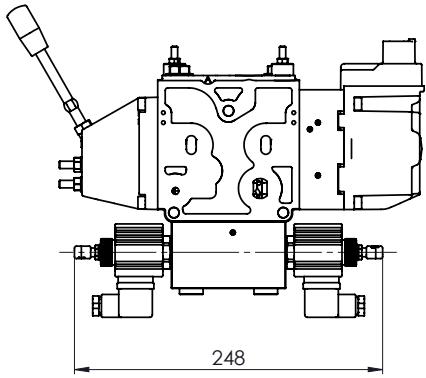
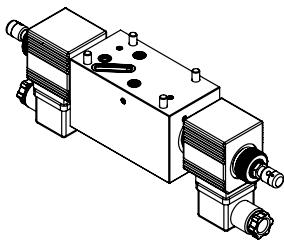
Range setting (bar)	Code numbers
20 ÷ 70	PWA7M180N00
71 ÷ 130	PWA7M180B00
131 ÷ 210	PWA7M180G00
211 ÷ 280	PWA7M180V00
281 ÷ 350	PWA7M180W00
351 ÷ 420	PWA7M180R00

PWB shock valve for A/B port. **Not adjustable**

Setting pressure(bar)	Code numbers
50	PWB7M180050
70	PWB7M180070
90	PWB7M180090
110	PWB7M180110
130	PWB7M180130
150	PWB7M180150
180	PWB7M180180
200	PWB7M180200
230	PWB7M180230
260	PWB7M180260
290	PWB7M180290
320	PWB7M180320
350	PWB7M180350
380	PWB7M180380

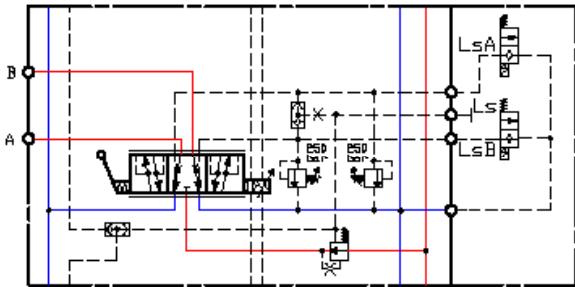
PWR suction valve for A/B port		
Product	Hydraulic diagram	Code numbers
		PWR7M180000
Plug for PWS - PWA - PWB and PWR cavity		
Product	Hydraulic diagram	Code numbers
		PWP7M18000

PDV315 Proportional Valve
PDL module - Electrical LsA/B unloading
ON-OFF actuation normally closed



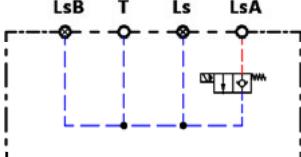
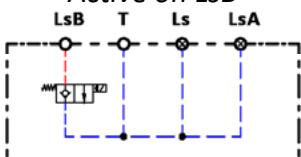
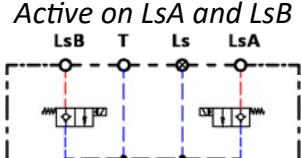
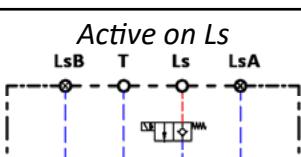
When PDL is energized, the piloting signal is lead to tank and in turn the work port oil flow will be cutted off.

PDL modules is always to be matched with PDW pressure compensated.

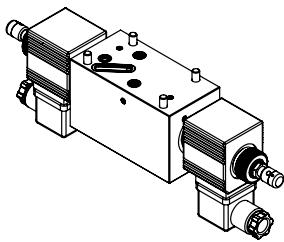


PDL code numbers

Hydraulic diagram	Connector type	12V dc	24V dc
	Deutsch Parallel	PDL12C11200	PDL12C31200
	Deutsch Perpendicular	PDL12C12200	PDL12C32200
	DIN	PDL12C13200	PDL12C33200
	JPT	PDL12C14200	PDL12C34200
	Deutsch Parallel	PDL13C11200	PDL13C31200
	Deutsch Perpendicular	PDL13C12200	PDL13C32200
	DIN	PDL13C13200	PDL13C33200
	JPT	PDL13C14200	PDL13C34200
	Deutsch Parallel	PDL11C11200	PDL11C31200
	Deutsch Perpendicular	PDL11C12200	PDL11C32200
	DIN	PDL11C13200	PDL11C33200
	JPT	PDL11C14200	PDL11C34200
	Deutsch Parallel	PDL14C11200	PDL14C31200
	Deutsch Perpendicular	PDL14C12200	PDL14C32200
	DIN	PDL14C13200	PDL14C33200
	JPT	PDL14C14200	PDL14C34200

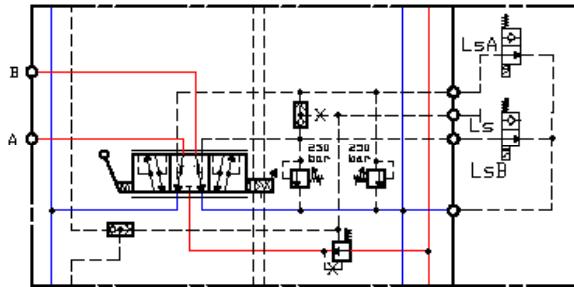
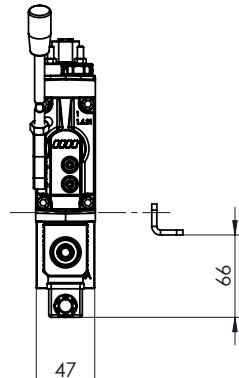
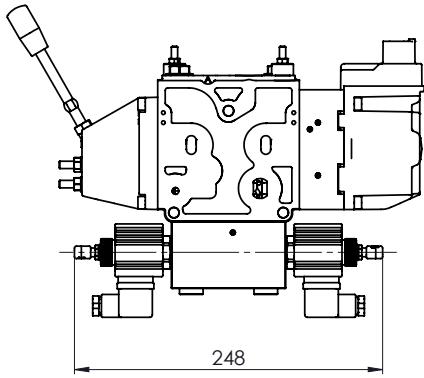
PDL code numbers			
Hydraulic diagram	Connector type	12V dc	24V dc
	Deutsch Parallel	PDL32C11200	PDL32C31200
	Deutsch Perpendicular	PDL32C12200	PDL32C32200
	DIN	PDL32C13200	PDL32C33200
	JPT	PDL32C14200	PDL32C34200
	Deutsch Parallel	PDL33C11200	PDL33C31200
	Deutsch Perpendicular	PDL33C12200	PDL33C32200
	DIN	PDL33C13200	PDL33C33200
	JPT	PDL33C14200	PDL33C34200
	Deutsch Parallel	PDL35C11200	PDL35C31200
	Deutsch Perpendicular	PDL35C12200	PDL35C32200
	DIN	PDL35C13200	PDL35C33200
	JPT	PDL35C14200	PDL35C34200
	Deutsch Parallel	PDL34C11200	PDL34C31200
	Deutsch Perpendicular	PDL34C12200	PDL34C32200
	DIN	PDL34C13200	PDL34C33200
	JPT	PDL34C14200	PDL34C34200

PDV315 Proportional Valve
PDL module - Electrical LS/A/B unloading
ON-OFF actuation normally open



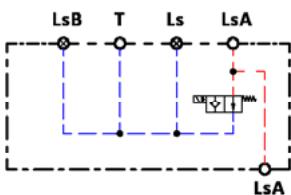
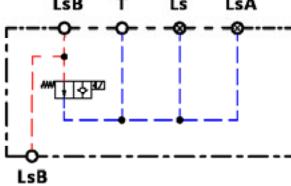
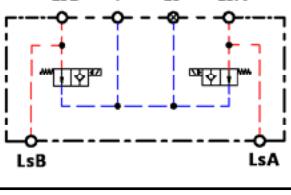
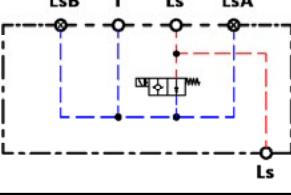
When PDL is deenergized, the piloting signal is lead to tank and in turn the work port oil flow will be cutted off.

PDL modules is always to be matched with PDW pressure compensated.



PDL code numbers

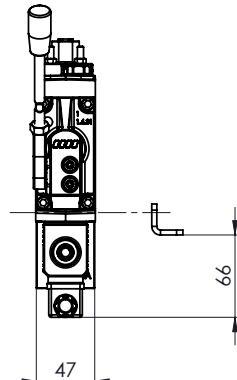
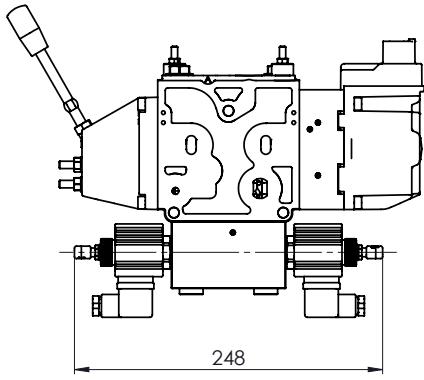
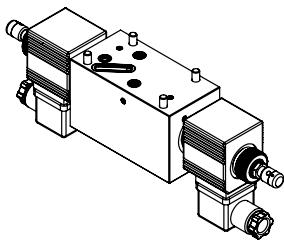
Hydraulic diagram	Connector type	12V dc	24V dc
	Deutsch Parallel	PDL32A11100	PDL32A31100
	Deutsch Perpendicular	PDL32A12100	PDL32A32100
	DIN	PDL32A13100	PDL32A33100
	JPT	PDL32A14100	PDL32A34100
	Deutsch Parallel	PDL33A11100	PDL33A31100
	Deutsch Perpendicular	PDL33A12100	PDL33A32100
	DIN	PDL33A13100	PDL33A33100
	JPT	PDL33A14100	PDL33A34100
	Deutsch Parallel	PDL35A11100	PDL35A31100
	Deutsch Perpendicular	PDL35A12100	PDL35A32100
	DIN	PDL35A13100	PDL35A33100
	JPT	PDL35A14100	PDL35A34100
	Deutsch Parallel	PDL34A11100	PDL34A31100
	Deutsch Perpendicular	PDL34A12100	PDL34A32100
	DIN	PDL34A13100	PDL34A33100
	JPT	PDL34A14100	PDL34A34100

PDL code numbers			
Hydraulic diagram	Connector type	12V dc	24V dc
 <p>Active on LsA</p> <p>LsB T Ls LsA</p>	Deutsch Parallel	PDL12A11100	PDL12A31100
	Deutsch Perpendicular	PDL12A12100	PDL12A32100
	DIN	PDL12A13100	PDL12A33100
	JPT	PDL12A14100	PDL12A34100
 <p>Active on LsB</p> <p>LsB T Ls LsA</p>	Deutsch Parallel	PDL13A11100	PDL13A31100
	Deutsch Perpendicular	PDL13A12100	PDL13A32100
	DIN	PDL13A13100	PDL13A33100
	JPT	PDL13A14100	PDL13A34100
 <p>Active on LsA and LsB</p> <p>LsB T Ls LsA</p>	Deutsch Parallel	PDL11A11100	PDL11A31100
	Deutsch Perpendicular	PDL11A12100	PDL11A32100
	DIN	PDL11A13100	PDL11A33100
	JPT	PDL11A14100	PDL11A34100
 <p>Active on Ls</p> <p>LsB T Ls LsA</p>	Deutsch Parallel	PDL14A11100	PDL14A31100
	Deutsch Perpendicular	PDL14A12100	PDL14A32100
	DIN	PDL14A13100	PDL14A33100
	JPT	PDL14A14100	PDL14A34100

PDV315 Proportional Valve

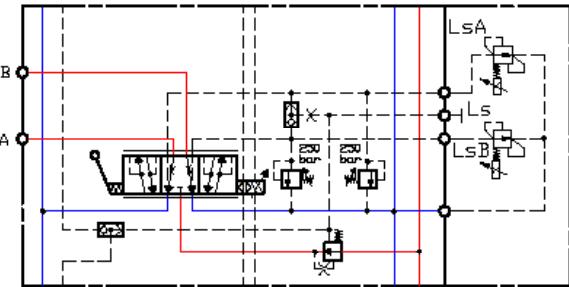
PDLD module - **Electrical LS_{A/B} unloading**

Proportional actuation normally open (current signal mA)

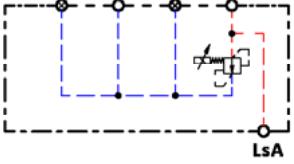
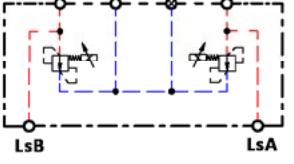
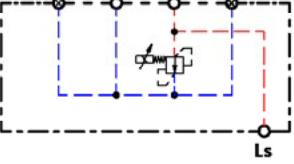


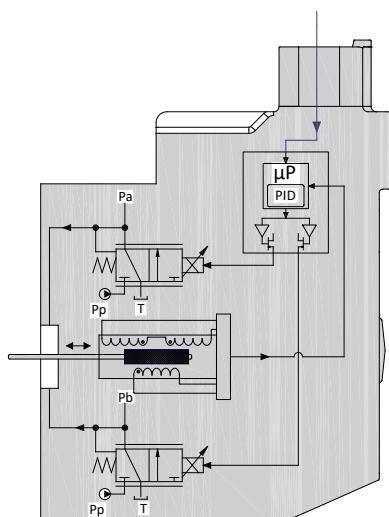
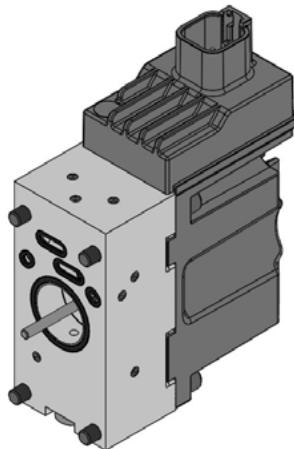
PDLD is an electro-hydraulic device that allows the A/B port working pressure to be remotely and proportionally operated according to a current signal (mA). When the working pressure exceed the setting pressure value, the A/B port oil flow will be cutted off.

When PDLD is not energized, PDW is almost pressureless, as well as the A-B oil flow is cutted off.



PDLD code numbers

Hydraulic diagram	Connector type	12V dc	24V dc
<i>Active on LsA</i> 	Deutsch Parallel	PDL12D11000	PDL12D31000
<i>Active on LsB</i> 	Deutsch Parallel	PDL13D11000	PDL13D31000
<i>Active on LsA and LsB</i> 	Deutsch Parallel	PDL11D11000	PDL11D31000
<i>Active on Ls</i> 	Deutsch Parallel	PDL14D11000	PDL14D31000



PEAC131 is a proportional high performance PDV spool actuation with integrated electronics and inductive transducer (LVDT) that operates safely and precisely the main spool movement according to an electrical signal coming from a remote control.

The input signal by means of the PCB and the two proportional pressure reducing valves, determines the level of the pilot pressure which moves the main spool.

The spool position is detected in the LVDT transducer which generates an electric feed-back signal registered by the electronics.

The variation between the input signal and the feed-back signal, actuates the solenoid valves accordingly, so that, the hydraulic pilot pressure will drive the main spool in the right position.

All PEAC131 modules comes with integrated fault monitoring system, available in two version:

Active version

Passive version

Active fault monitoring

When an error state is detected, the two proportional solenoid valves will be automatically deactivated, a red lamp will light-up and drive the spool in neutral position (if it's not seized up).

The system will only react to failures of more than 500 ms (in other words there is delay of half a second before anything happens). An alarm signal is sent out through the connector, and minus is opened.

This error state is memorized, and continues until the system is being reset by switching off the supply voltage.

Shortly, when the active fault monitoring system is connected and an error state is detected, the system ensures a fast and operator free reaction, that will put the complete hydraulic circuit into venting conditions, thus preventing uncontrollable machine movements.

Passive fault monitoring

When an error state is detected, the two proportional solenoid valves will not be deactivated, a red lamp will light-up, but still control the main spool.

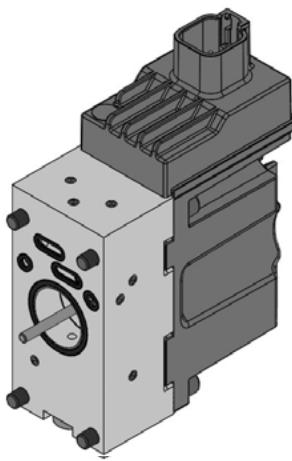
When a fault condition occurs, after a delay of 250 ms an alarm signal is sent out through a devoted pin

This state is not memorized, and when the faulty state disappears, the alarm signal will turn to passive again.

In order to prevent the electronic from going into an undefined state, any time the system is being triggered or reset, a general check of power supply and the internal clock frequency is made.

The use of PEAC131 module both passive or active version, allows the machines hydraulic system to be made with different level of safety degree that for the choice of which it is essential to know the exactly required functions.

When the PEAC131 module active version is connected with the pump unloading system, the level of safety degree protection for the complete hydraulic system becomes very high, operator free, and helps OEM to meet the PL (Performance Level) required to be comply with the safety demands of Machinery Directive 2006/42/EC.



PEAC131 is defined by:

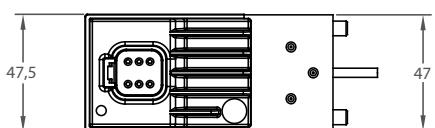
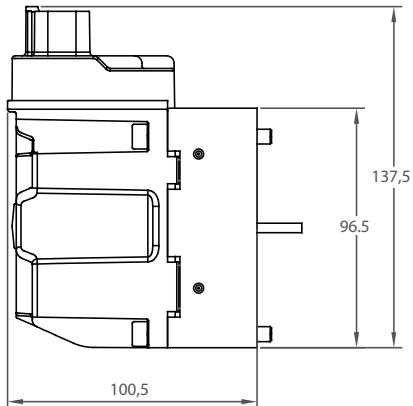
- Inductive transducer with resolution < 12 µm
- Integrated diagnosis and error memory
- Fault monitoring transistor output for signal source
- Higher spool control accuracy
- EMC performance according to Directive 2014/30/UE
- Low hysteresis
- Quicker reaction time
- Spool direction movement output
- Integrated PWM/Pulse Width Modulation
- Low electrical power

PEAC131 Technical data

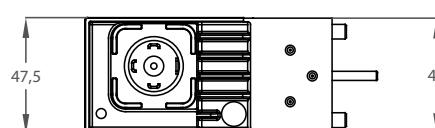
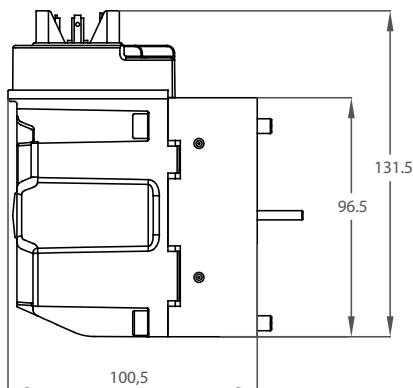
Rated supply voltage	10 ÷ 30 Vdc
Max ripple	5%
Signal control	0,5 Udc
Range control signal	0,25 Udc to 0,75 Udc
Neutral spool position	0,5 Udc
Max threshold signal, A port	1 V
Max threshold signal, B port	1 V
Max current signal @ rated voltage	48 mA
Input capacitor	100 nF
Signal control impedance	25 kΩ
Power consumption	8,7 W
Heat insulation	Class H (180°C)
Duty cycle	ED 100%
Max current consumption	650 mA
Current consumption in neutral position	80 mA
Coil impedance @ 20°C	8,9 Ω
Dither frequency	50-200 Hz
Recommended frequency	100 Hz
Enclosure degree	(Electrical wiring excepted)
Weight cast iron body	1,8 kg
Weight aluminium body	1,3 kg

Bootloader function, debugging parameters and set-up function available only with Deutsch connector DT06-6S

Fault monitoring system	Max current on safety output (pin 5)	50 mA
	Reaction time a fault	500 ms
	Max current output signal for spool direction movement	50 mA
Reaction time (constant voltage)	From neutral position to max spool travel	110 - 140 ms
	From max spool travel to neutral	70 - 90 ms
Reaction time (neutral switch)	From neutral position to max spool travel	130 - 170 ms
	From max spool travel to neutral	70 - 90 ms

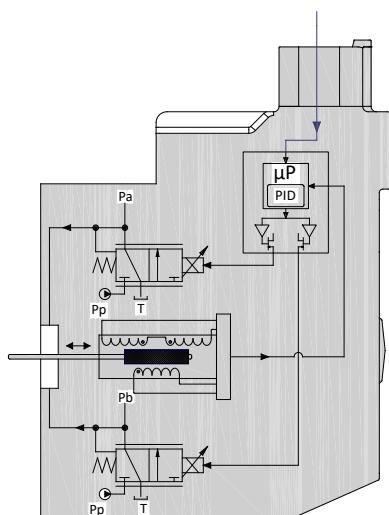
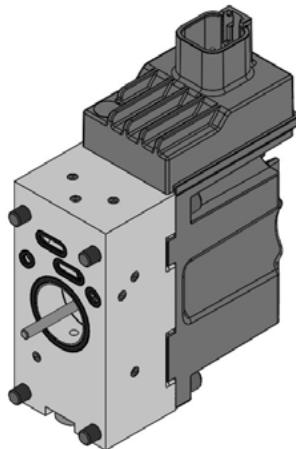


Deutsch connector DT06-6S Enclosure degree IP 69K PIN-assignment		
1	Power supply	
2	Input signal control	
3	CAN-high	A port-spool movement signal
4	CAN-low	B port-spool movement signal
5	Fault monitoring signal	
6	Ground	



Hirschmann connector DIN 43650 Enclosure degree IP 65 PIN-assignment		
1	Power supply	
2	Input signal control	
3	Fault monitoring signal	
4	Ground	

Connector version	Code numbers			
	Active version		Passive version	
	Cast-iron body	Aluminium body	Cast-iron body	Aluminium body
Deutsch DT06-6S	PEAC0181000	PEAC1181000	PEAC0171000	PEAC1171000
DIN 43650	PEAC0181200	PEAC1181200	PEAC0171200	PEAC1171200



PEAC132 is a proportional high performance PDV spool actuation with integrated electronics and inductive transducer (LVDT) that operates safely and precisely the main spool movement according to an electrical signal coming from a remote control.

The input signal by means of the PCB and the two proportional pressure reducing valves, determines the level of the pilot pressure which moves the main spool.

The spool position is detected in the LVDT transducer which generates an electric feed-back signal registered by the electronics.

The variation between the input signal and the feed-back signal, actuates the solenoid valves accordingly, so that, the hydraulic pilot pressure will drive the main spool in the right position.

All PEAC132 modules comes with integrated fault monitoring system, available in two version:

Active version

Passive version

Active fault monitoring

When an error state is detected, the two proportional solenoid valves will be automatically deactivated, a red lamp will light-up and drive the spool in neutral position (if it's not seized up).

The system will only react to failures of more than 500 ms (in other words there is delay of half a second before anything happens). An alarm signal is sent out through the connector, and minus is opened.

This error state is memorized, and continues until the system is being reset by switching off the supply voltage.

Shortly, when the active fault monitoring system is connected and an error state is detected, the system ensures a fast and operator free reaction, that will put the complete hydraulic circuit into venting conditions, thus preventing uncontrollable machine movements.

Passive fault monitoring

When an error state is detected, the two proportional solenoid valves will not be deactivated, a red lamp will light-up, but still control the main spool.

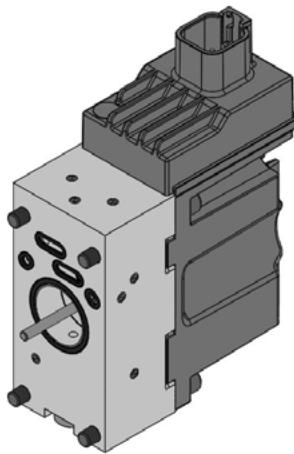
When a fault condition occurs, after a delay of 250 ms an alarm signal is sent out through a devoted pin

This state is not memorized, and when the faulty state disappears, the alarm signal will turn to passive again.

In order to prevent the electronic from going into an undefined state, any time the system is being triggered or reset, a general check of power supply and the internal clock frequency is made.

The use of PEAC132 module both passive or active version, allows the machines hydraulic system to be made with different level of safety degree that for the choice of which it is essential to know the exactly required functions.

When the PEAC132 module active version is connected with the pump unloading system, the level of safety degree protection for the complete hydraulic system becomes very high, operator free, and helps OEM to meet the PL (Performance Level) required to be comply with the safety demands of Machinery Directive 2006/42/EC.



PEAC132 is defined by:

- Inductive transducer with resolution < 12 µm
- Integrated diagnosis and error memory
- Fault monitoring transistor output for signal source
- Higher spool control accuracy
- EMC performance to
- Low hysteresis
- Quicker reaction time
- Spool direction movement output
- Integrated PWM/Pulse Width Modulation
- Low electrical power

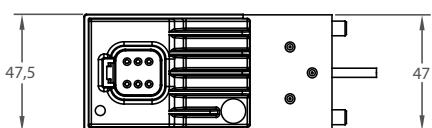
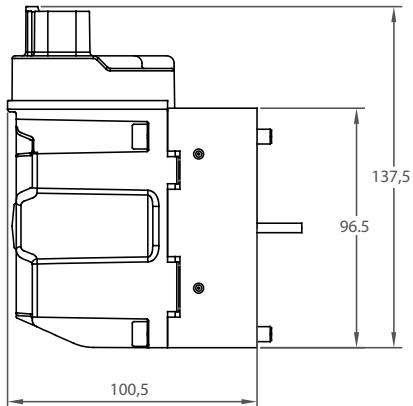
PEAC132 Technical data

Rated supply voltage	10-30 Vdc
Max ripple	5%
Signal control	0-10 V
Range control signal	2,5 V to 7,5 V
Neutral spool position	5 V
Max threshold signal, A port	1 V
Max threshold signal, B port	1 V
Max current signal @ rated voltage	48 mA
Input capacitor	100 nF
Signal control impedance	25 kΩ
Power consumption	8,7 W
Heat insulation	Class H (180°C)
Duty cycle	ED 100%
Max current consumption	650 mA
Current consumption in neutral position	80 mA
Coil impedance @ 20°C	8,9 Ω
Dither frequency	50-200 Hz
Recommended frequency	100 Hz
Enclosure degree	(Electrical wiring excepted)
Weight cast iron body	1,8 kg
Weight aluminium body	1,3 kg

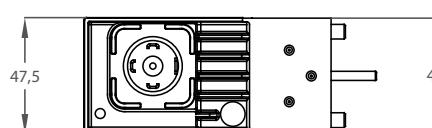
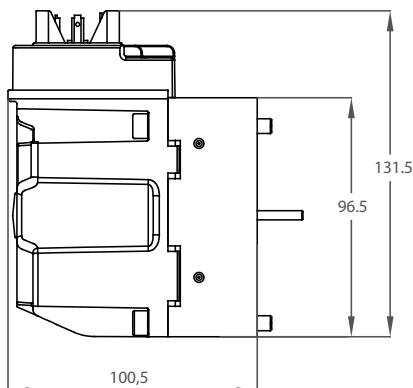
Bootloader function, debugging parameters and set-up function available only with Deutsch connector DT06-6S

Fault monitoring system	Max current on safety output (pin 5)	50 mA
	Reaction time a fault	500 ms
Max current output signal for spool direction movement		50 mA
Reaction time (constant voltage)	From neutral position to max spool travel	110 - 140 ms
	From max spool travel to neutral	70 - 90 ms
Reaction time (neutral switch)	From neutral position to max spool travel	130 - 170 ms
	From max spool travel to neutral	70 - 90 ms

PDV315 - PEAC132 Electro-hydraulic proportional actuation
Closed loop spool control, high performance resolution
Input signal 0 ÷ 10 V - Electrical connectors

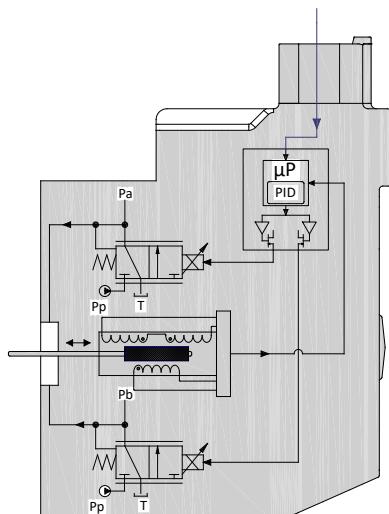
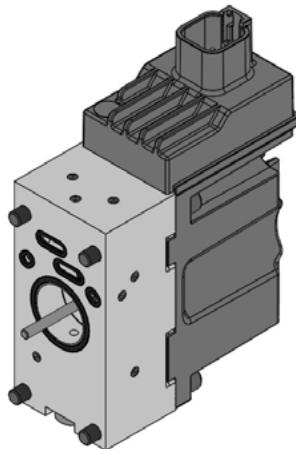


Deutsch connector DT06-6S Enclosure degree IP 69K PIN-assignment		
1	Power supply	
2	Input signal control	
3	CAN-high	A port-spool movement signal
4	CAN-low	B port-spool movement signal
5	Fault monitoring signal	
6	Ground	



Hirschmann connector DIN 43650 Enclosure degree IP 65 PIN-assignment		
1	Power supply	
2	Input signal control	
3	Fault monitoring signal	
4	Ground	

Connector version	Code numbers			
	Active version		Passive version	
	Cast-iron body	Aluminium body	Cast-iron body	Aluminium body
Deutsch DT06-6S	PEAC0182000	PEAC1182000	PEAC0172000	PEAC1172000
DIN 43650	PEAC0182200	PEAC1182200	PEAC0172200	PEAC1172200



PEAC136 is a proportional high performance PDV spool actuation with integrated electronics and inductive transducer (LVDT) that operates safely and precisely the main spool movement according to an electrical signal coming from a remote control.

The input signal by means of the PCB and the two proportional pressure reducing valves, determines the level of the pilot pressure which moves the main spool.

The spool position is detected in the LVDT transducer which generates an electric feed-back signal registered by the electronics.

The variation between the input signal and the feed-back signal, actuates the solenoid valves accordingly, so that, the hydraulic pilot pressure will drive the main spool in the right position.

All PEAC136 modules comes with integrated fault monitoring system, available in two version:

Active version

Passive version

Active fault monitoring

When an error state is detected, the two proportional solenoid valves will be automatically deactivated, a red lamp will light-up and drive the spool in neutral position (if it's not seized up).

The system will only react to failures of more than 500 ms (in other words there is delay of half a second before anything happens). An alarm signal is sent out through the connector, and minus is opened.

This error state is memorized, and continues until the system is being reset by switching off the supply voltage.

Shortly, when the active fault monitoring system is connected and an error state is detected, the system ensures a fast and operator free reaction, that will put the complete hydraulic circuit into venting conditions, thus preventing uncontrollable machine movements.

Passive fault monitoring

When an error state is detected, the two proportional solenoid valves will not be deactivated, a red lamp will light-up, but still control the main spool.

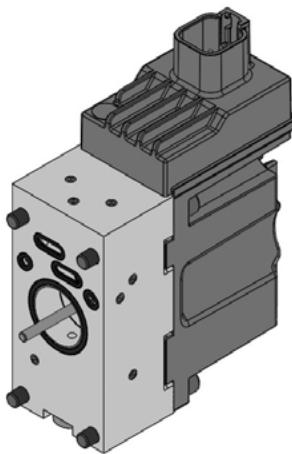
When a fault condition occurs, after a delay of 250 ms an alarm signal is sent out through a devoted pin

This state is not memorized, and when the faulty state disappears, the alarm signal will turn to passive again.

In order to prevent the electronic from going into an undefined state, any time the system is being triggered or reset, a general check of power supply and the internal clock frequency is made.

The use of PEAC136 module both passive or active version, allows the machines hydraulic system to be made with different level of safety degree that for the choice of which it is essential to know the exactly required functions.

When the PEAC136 module active version is connected with the pump unloading system, the level of safety degree protection for the complete hydraulic system becomes very high, operator free, and helps OEM to meet the PL (Performance Level) required to be comply with the safety demands of Machinery Directive 2006/42/EC.



PEAC136 is defined by:

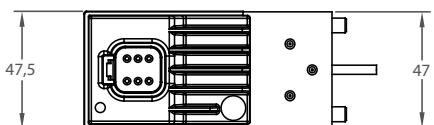
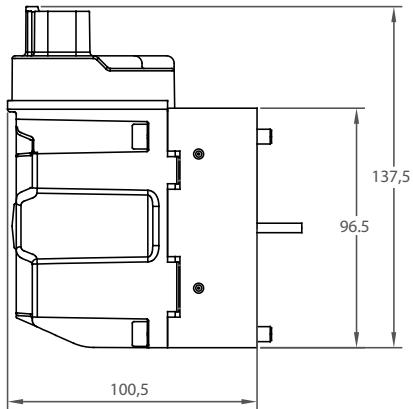
- Inductive transducer with resolution < 12 μ m
- Integrated diagnosis and error memory
- Fault monitoring transistor output for signal source
- Higher spool control accuracy
- EMC performance according to Directive 2014/30/UE
- Low hysteresis
- Quicker reaction time
- Spool direction movement output
- Integrated PWM/Pulse Width Modulation
- Low electrical power
- Robust and reliable design

PEAC136 Technical data

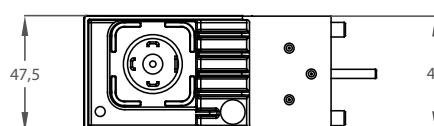
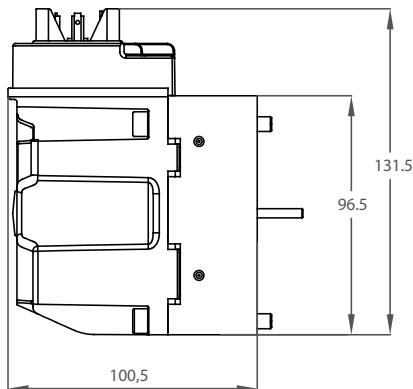
Rated supply voltage	10 ÷ 30 Vdc
Max ripple	5%
Signal control	4 ÷ 20 mA
Range control signal	4 mA to 20 mA
Neutral spool position	12 mA
Max threshold signal, A port	1,5 mA
Max threshold signal, B port	1,5 mA
Max current signal @ rated voltage	48 mA
Input capacitor	100 μ F
Signal control impedance	220 Ω
Power consumption	8,7 W
Heat insulation	Class H (180°C)
Duty cycle	ED 100%
Max current consumption	650 mA
Current consumption in neutral position	80 mA
Coil impedance @ 20°C	8,9 Ω
Dither frequency	50 ÷ 200 Hz
Recommended frequency	100 Hz
Enclosure degree	(Electrical wiring excepted)
	IP65 - IP66 - IP69K
Weight cast iron body	1,8 kg
Weight aluminium body	1,3 kg

Bootloader function, debugging parameters and set-up function available with Deutsch connector DT06-6S, only

Fault monitoring system	Max current on safety output (pin 5)	50 mA
	Reaction time a fault	500 ms
Max current output signal for spool direction movement		50 mA
Reaction time (constant voltage)	From neutral position to max spool travel	110 ÷ 140 ms
	From max spool travel to neutral	70 ÷ 90 ms
Reaction time (neutral switch)	From neutral position to max spool travel	130 ÷ 170 ms
	From max spool travel to neutral	70 ÷ 90 ms

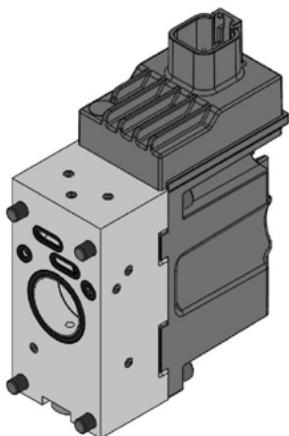


Deutsch connector DT06-6S Enclosure degree IP 69K PIN-assignment		
1	Power supply	
2	Input signal control	
3	CAN-high	A port-spool movement signal
4	CAN-low	B port-spool movement signal
5	Fault monitoring signal	
6	Ground	



Hirschmann connector DIN 43650 Enclosure degree IP 65 PIN-assignment		
1	Power supply	
2	Input signal control	
3	Fault monitoring signal	
4	Ground	

Connector version	Code numbers			
	Active version		Passive version	
	Cast-iron body	Aluminium body	Cast-iron body	Aluminium body
Deutsch DT06-6S	PEAC0186000	PEAC1186000	PEAC0176000	PEAC1176000
DIN 43650	PEAC0186200	PEAC1186200	PEAC0176200	PEAC1176200

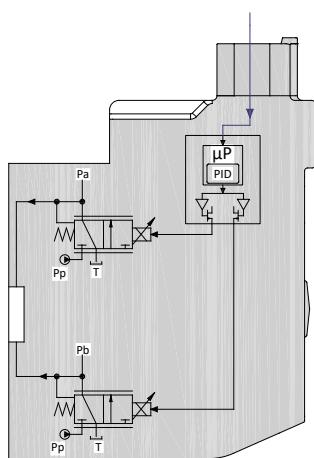


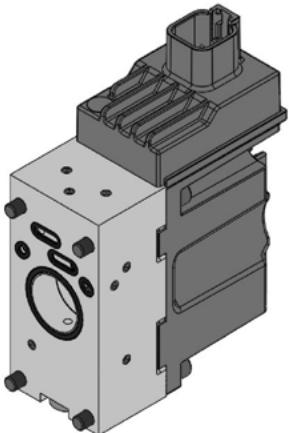
PEAC031 is a proportional open loop spool actuation with integrated electronics that operates the main spool movement according to an electrical signal coming from a remote control.

The input signal by means of the PCB and the two proportional pressure reducing valves, determines the level of the pilot pressure which moves the main spool.

PEAC031 does not have neither the transducer spool position control nor fault monitoring system, this means that any forces which override the pilot pressure spool forces, may change the spool position with no error signal, and the safety of the whole system is left to the operator's visual control, only.

PEAC031 is recommended where a simple proportional control is required, and where hysteresis and reaction time are not so critical.





PEAC031 is defined by:

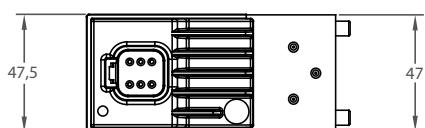
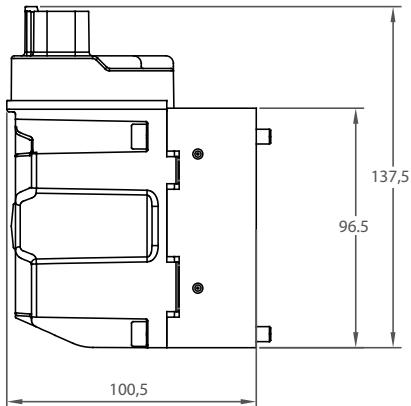
- High spool control accuracy
- EMC performance according to Directive 2014/30/UE
- Quick reaction time
- Integrated PWM/Pulse Width Modulation
- Low electrical power
- Robust and reliable design

PEAC031 Technical data

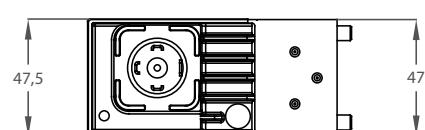
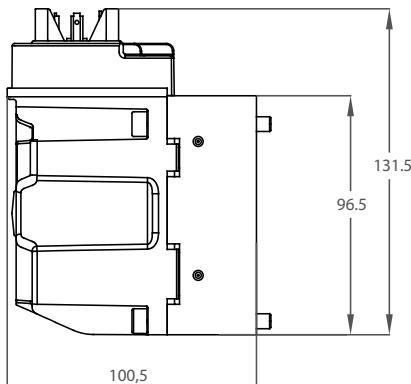
Rated supply voltage	10-30 Vdc
Max ripple	5%
Signal control	0,5 Udc
Range control signal	0,25 Udc to 0,75 Udc
Neutral spool position	0,5 Udc
Max threshold signal, A port	1 V
Max threshold signal, B port	1 V
Max current signal @ rated voltage	48 mA
Input capacitor	100 nF
Signal control impedance	25 kΩ
Power consumption	8,7 W
Heat insulation	Class H (180°C)
Duty cycle	ED 100%
Max current consumption	650 mA
Current consumption in neutral position	80 mA
Coil impedance @ 20°C	8,9 Ω
Dither frequency	50-200 Hz
Recommended frequency	100 Hz
Enclosure degree	(Electrical wiring excepted)
Weight cast iron body	1,8 kg
Weight aluminium body	1,3 kg

Bootloader function, debugging parameters and set-up function available only with Deutsch connector DT06-6S

Reaction time (constant voltage)	From neutral position to max spool travel	110 - 140 ms
	From max spool travel to neutral	70 - 90 ms
Reaction time (neutral switch)	From neutral position to max spool travel	130 - 170 ms
	From max spool travel to neutral	70 - 90 ms

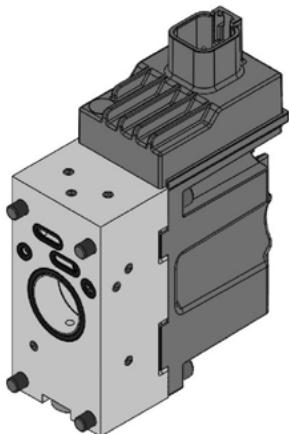


Deutsch connector DT06-6S Enclosure degree IP 69K PIN-assignment	
1	Power supply
2	Input signal control
3	CAN-high
4	CAN-low
5	Free
6	Ground



Hirschmann connector DIN 43650 Enclosure degree IP 65 PIN-assignment	
1	Power supply
2	Input signal control
3	Free
4	Ground

Connector version	Code numbers			
	Active version		Passive version	
	Cast-iron body	Aluminium body	Cast-iron body	Aluminium body
Deutsch DT06-6S	PEAC0081000	PEAC1081000	PEAC0071000	PEAC1071000
DIN 43650	PEAC0081200	PEAC1081200	PEAC0071200	PEAC1071200

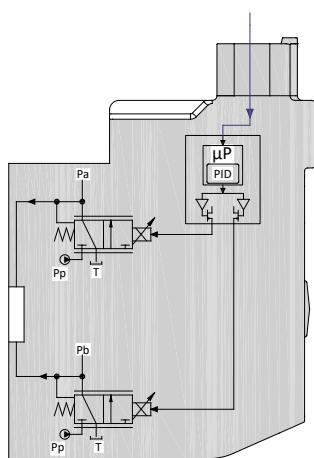


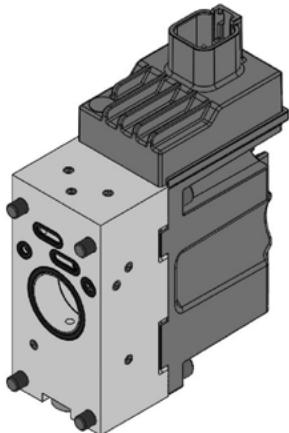
PEAC032 is a proportional open loop spool actuation with integrated electronics that operates the main spool movement according to an electrical signal coming from a remote control.

The input signal by means of the PCB and the two proportional pressure reducing valves, determines the level of the pilot pressure which moves the main spool.

PEAC032 does not have neither the transducer spool position control nor fault monitoring system, this means that any forces which override the pilot pressure spool forces, may change the spool position with no error signal, and the safety of the whole system is left to the operator's visual control, only.

PEAC032 is recommended where a simple proportional control is required, and where hysteresis and reaction time are not so critical.





PEAC032 is defined by:

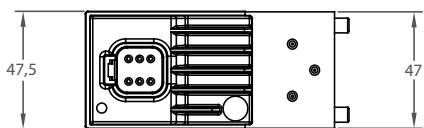
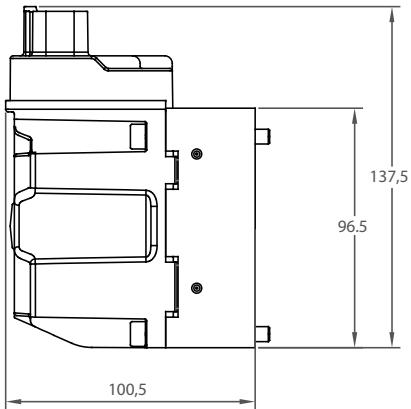
- High spool control accuracy
- EMC performance according to Directive 2014/30/UE
- Quick reaction time
- Integrated PWM/Pulse Width Modulation
- Low electrical power
- Robust and reliable design

PEAC032 Technical data

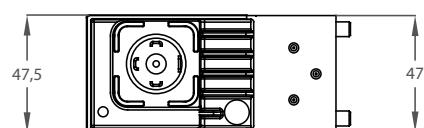
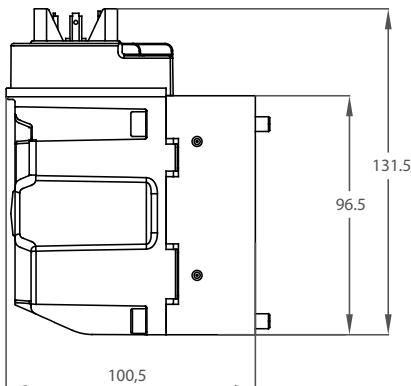
Rated supply voltage	10-30 Vdc
Max ripple	5%
Signal control	0-10 V
Range control signal	2,5 V to 7,5 V
Neutral spool position	5 V
Max threshold signal, A port	1 V
Max threshold signal, B port	1 V
Max current signal @ rated voltage	48 mA
Input capacitor	100 nF
Signal control impedance	25 kΩ
Power consumption	8,7 W
Heat insulation	Class H (180°C)
Duty cycle	ED 100%
Max current consumption	650 mA
Current consumption in neutral position	80 mA
Coil impedance @ 20°C	8,9 Ω
Dither frequency	50-200 Hz
Recommended frequency	100 Hz
Enclouser degree	(Electrical wiring excepted)
Weight cast iron body	1,8 kg
Weight aluminium body	1,3 kg

Bootloader function, debugging parameters and set-up function available only with Deutsch connector DT06-6S

Reaction time (constant voltage)	From neutral position to max spool travel	110 - 140 ms
	From max spool travel to neutral	70 - 90 ms
Reaction time (neutral switch)	From neutral position to max spool travel	130 - 170 ms
	From max spool travel to neutral	70 - 90 ms

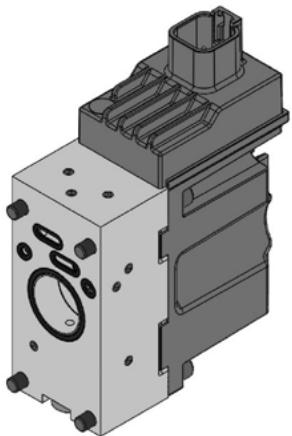


Deutsch connector DT06-6S Enclosure degree IP 69K PIN-assignment	
1	Power supply
2	Input signal control
3	CAN-high
4	CAN-low
5	Free
6	Ground



Hirschmann connector DIN 43650 Enclosure degree IP 65 PIN-assignment	
1	Power supply
2	Input signal control
3	Free
4	Ground

Connector version	Code numbers			
	Active version		Passive version	
	Cast-iron body	Aluminium body	Cast-iron body	Aluminium body
Deutsch DT06-6S	PEAC0082000	PEAC1082000	PEAC0072000	PEAC1072000
DIN 43650	PEAC0082200	PEAC1082200	PEAC0072200	PEAC1072200

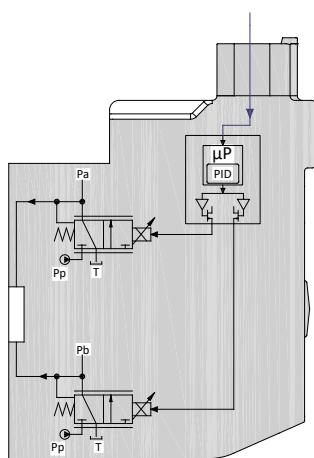


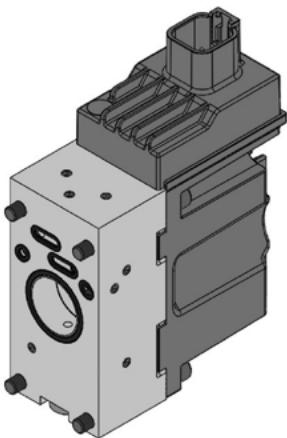
PEAC036 is a proportional open loop spool actuation with integrated electronics that operates the main spool movement according to an electrical signal coming from a remote control.

The input signal by means of the PCB and the two proportional pressure reducing valves, determines the level of the pilot pressure which moves the main spool.

PEAC036 does not have neither the transducer spool position control nor fault monitoring system, this means that any forces which override the pilot pressure spool forces, may change the spool position with no error signal, and the safety of the whole system is left to the operator's visual control, only.

PEAC036 is recommended where a simple proportional control is required, and where hysteresis and reaction time are not so critical.





PEAC036 is defined by:

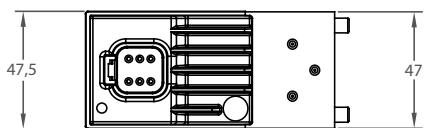
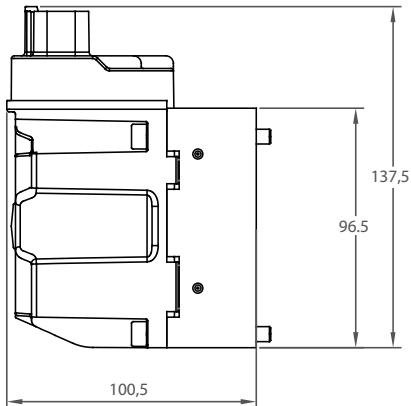
- High spool control accuracy
- EMC performance according to Directive 2014/30/UE
- Quick reaction time
- Integrated PWM/Pulse Width Modulation
- Low electrical power
- Robust and reliable design

PEAC036 Technical data

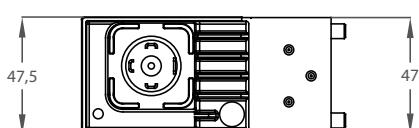
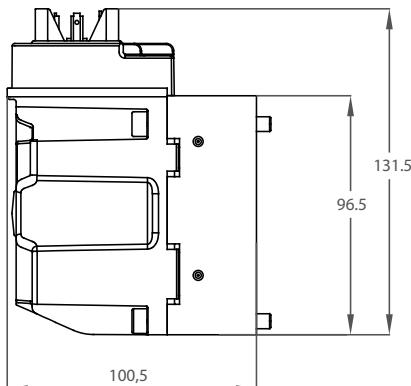
Rated supply voltage	10-30 Vdc
Max ripple	5%
Signal control	4-20 mA
Range control signal	4 mA to 20 mA
Neutral spool position	12 mA
Max threshold signal, A port	1,5 mA
Max threshold signal, B port	1,5 mA
Input capacitor	100 nF
Input impedance	220 Ω
Power consumption	8,7 W
Heat insulation	Class H (180°C)
Duty cycle	ED 100%
Max current consumption	650 mA
Current consumption in neutral position	80 mA
Max current start spool travel	140 mA
Max current end spool travel	450 mA
Coil impedance @ 20°C	8,9 Ω
Signal control impedance	50 KΩ
Dither frequency	50-200 Hz
Recommended frequency	100 Hz
Enclosure degree	(Electrical wiring excepted)
	IP65 - IP66 - IP69K

**Bootloader function, debugging parameters and set-up function available
with Deutsch connector DT06-6S, only**

Reaction time (constant voltage)	From neutral position to max spool travel	110 - 140 ms
	From max spool travel to neutral	70 - 90 ms
Reaction time (neutral switch)	From neutral position to max spool travel	130 - 170 ms
	From max spool travel to neutral	70 - 90 ms

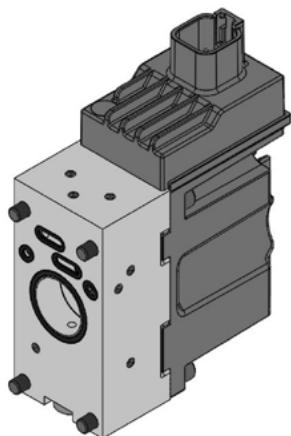


Deutsch connector DT06-6S Enclosure degree IP 69K PIN-assignment	
1	Power supply
2	Input signal control
3	CAN-high
4	CAN-low
5	Free
6	Ground



Hirschmann connector DIN 43650 Enclosure degree IP 65 PIN-assignment	
1	Power supply
2	Input signal control
3	Free
4	Ground

Connector version	Code numbers			
	Active version		Passive version	
	Cast-iron body	Aluminium body	Cast-iron body	Aluminium body
Deutsch DT06-6S	PEAC0086000	PEAC1086000	PEAC0076000	PEAC1076000
DIN 43650	PEAC0086200	PEAC1086200	PEAC0076200	PEAC1076200

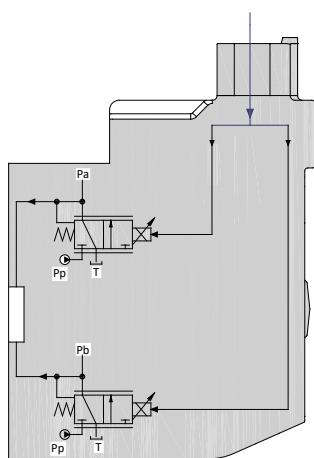


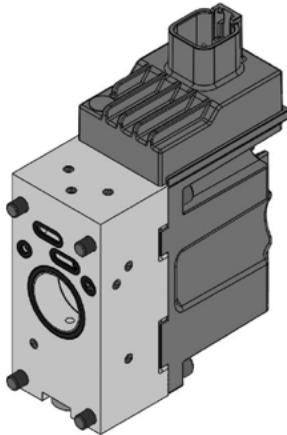
PEAD3 is a proportional open loop spool actuation without integrated electronics that operates the main spool movement according to an electrical signal coming from a remote control.

The input signal by means of the two proportional pressure reducing valves, determines the level of the pilot pressure which moves the main spool.

PEAD3 does not have neither the transducer spool position control nor fault monitoring system, this means that any forces which override the pilot pressure spool forces, may change the spool position with no error signal, and the safety of the whole system is left to the operator's visual control, only.

PEAD3 is recommended where a simple proportional control is required, and where hysteresis and reaction time are not so critical.



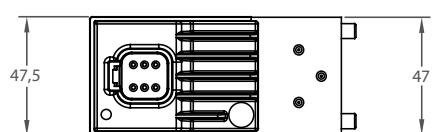
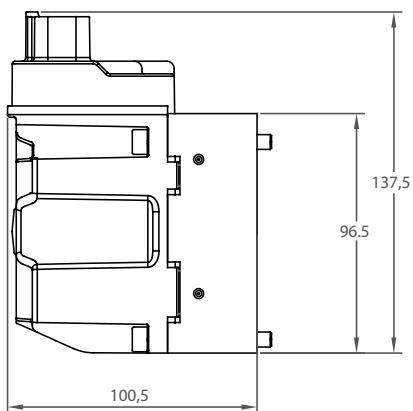


PEAD3 is defined by:

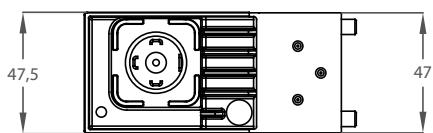
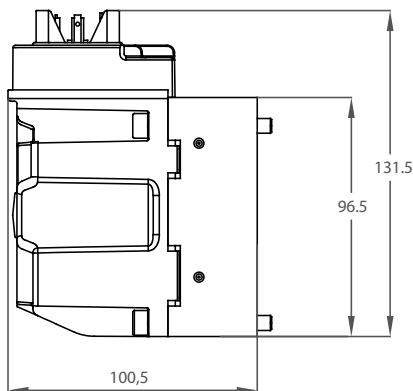
- High spool control accuracy
- EMC performance according to Directive 2014/30/UE
- Quick reaction time
- Integrated PWM/Pulse Width Modulation
- Low electrical power
- Robust and reliable design

PEAD3 Technical data

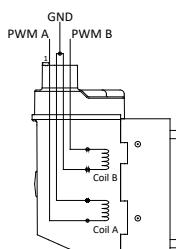
Supply voltage	12 Vdc	24 Vdc
Voltage range	10-16 V	20-30 V
Max ripple	5%	5%
Current consumption at rated voltage	750 mA @ 12 Vdc	400 mA @ 24 Vdc
Power consumption	9 W	9,6 W
R @ 20°C	8,9 Ω	35 Ω
Start spool travel	220 mA	140 mA
End spool travel flow control	650 mA	350 mA
Max spool flow in pre-floating position	650 mA	350 mA
Spool floating position	750 mA	400 mA
Heat insulation	Class H (180°C)	
Oil temperature (Recommended)	20 ÷ 60 °C	
Oil temperature (Min)	-30 °C	
Oil temperature (Max)	80 °C	
Ambient temperature	-30 ÷ 60 °C	
PWM frequency	50 ÷ 200 Hz	
Best frequency	100 Hz	
Duty cycle	100% ED	
Plug connector	6 pins Deutsch or 4 pins DIN	
Enclosure degree (Electrical wiring excepted)	IP69K	
Weight cast iron body	1,8 kg	
Weight Aluminium body	1,3 kg	
Max current output signal for spool direction movement	50 mA	
Reaction time (constant voltage)	From neutral position to max spool travel	110 - 140 ms
	From max spool travel to neutral	70 - 90 ms
Reaction time (neutral switch)	From neutral position to max spool travel	130 - 170 ms
	From max spool travel to neutral	70 - 90 ms



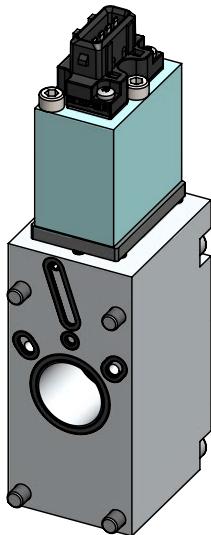
Deutsch connector DT06-6S Enclosure degree IP 69K PIN-assignment	
1	A port +
2	Free
3	A port -
4	B port +
5	Free
6	B port -



Hirschmann connector DIN 43650 Enclosure degree IP 65 PIN-assignment	
1	A port +
2	B port +
3	Free
4	Ground



Connector version	Code numbers			
	12V		24V	
	Cast-iron body	Aluminium body	Cast-iron body	Aluminium body
Deutsch DT06-6S	PEAD0100002	PEAD1100002	PEAD0200002	PEAD1200002
DIN 43650	PEAD0120002	PEAD1120002	PEAD0220002	PEAD1220002

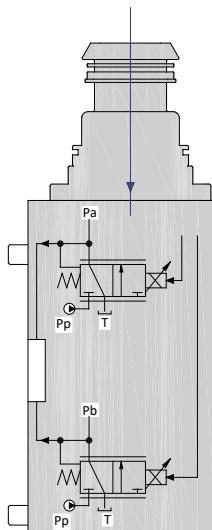


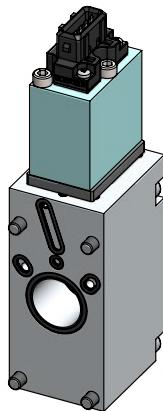
PEAP3 is a proportional open loop spool actuation without integrated electronics that operates the main spool movement according to an electrical signal coming from a remote control.

The input signal by means of the two proportional pressure reducing valves, determines the level of the pilot pressure which moves the main spool.

PEAP3 does not have neither the transducer spool position control nor fault monitoring system, this means that any forces which override the pilot pressure spool forces, may change the spool position with no error signal, and the safety of the whole system is left to the operator's visual control, only.

PEAP3 is recommended where a simple proportional control is required, and where hysteresis and reaction time are not so critical.



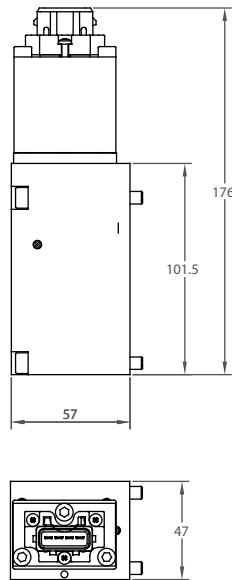


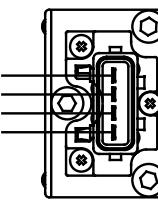
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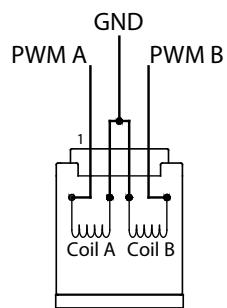
- High spool control accuracy
- EMC performance according to Directive 2014/30/UE
- Quick reaction time
- Integrated PWM/Pulse Width Modulation
- Low electrical power
- Robust and reliable design

PEAP3 Technical data

Supply voltage	12 Vdc	24 Vdc
Voltage range	10-16 V	20-30 V
Max ripple	5%	5%
Current consumption at rated voltage	1330 mA @ 12 Vdc	630 mA @ 24 Vdc
Power consumption	23 W	21 W
R @ 20°C	6,3 Ω	27 Ω
Start spool travel	220 mA	140 mA
End spool travel flow control	650 mA	350 mA
Max spool flow in pre-floating position	650 mA	350 mA
Spool floating position	750 mA	400 mA
Heat insulation	Class H (180°C)	
Oil temperature (Recommended)	-20 ÷ 60 °C	
Oil temperature (Min)	-30 °C	
Oil temperature (Max)	80 °C	
Ambient temperature	-30 ÷ 60 °C	
PWM frequency	50 ÷ 200 Hz	
Best frequency	100 Hz	
Duty cycle	100% ED	
Plug connector	Amp Junior Power Timer 4 pins	
Enclosure degree	(Electrical wiring excepted)	
IP69K		
Max current output signal for spool direction movement	50 mA	
Reaction time (constant voltage)	From neutral position to max spool travel	110 - 140 ms
	From max spool travel to neutral	70 - 90 ms
Reaction time (neutral switch)	From neutral position to max spool travel	130 - 170 ms
	From max spool travel to neutral	70 - 90 ms

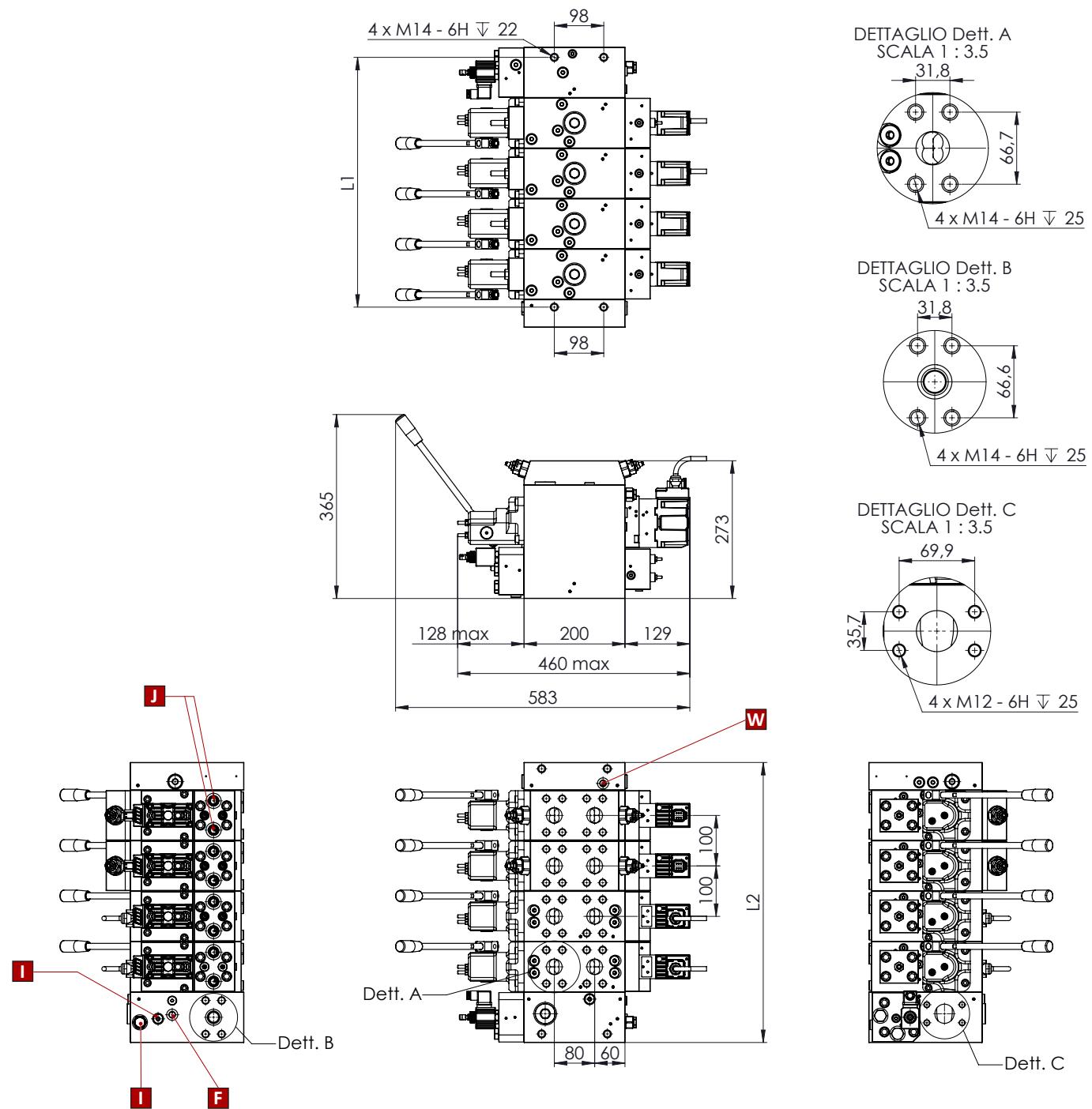


Amp Junior Power Timer 4 pin connector Enclosure degree IP 65 PIN-assignment	
	1 A port +
	2 A port -
	3 B port -
	4 B port +



Connector version	Code numbers			
	12V		24V	
	Cast-iron body	Aluminium body	Cast-iron body	Aluminium body
AMP Junior timer 4 Pin	PEAP0312002	PEAP1312002	PEAP0412002	PEAP1412002

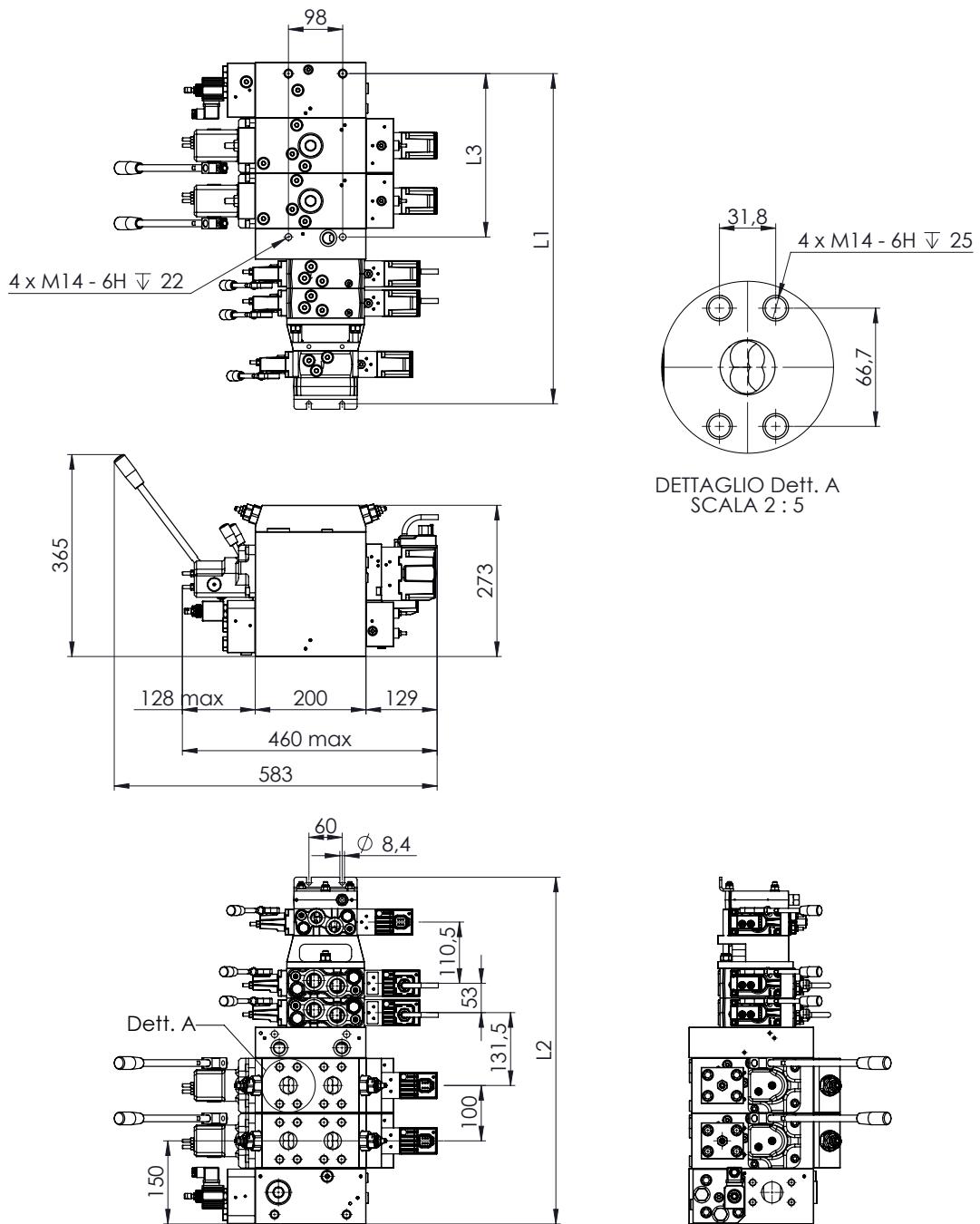
PDV315 Proportional valve
Overall dimensions drawing with standard inlet section
Right assembly version



PDW	1	2	3	4	5	6	7	8	9	10	11	12
L1	mm	180	228	276	324	372	420	468	516	564	612	660
	in	7,09	8,98	10,87	12,76	14,65	16,54	18,43	20,31	22,20	24,09	25,98
L2	mm	200	248	296	344	392	440	488	536	584	632	680
	in	7,87	9,76	11,65	13,54	15,43	17,32	19,21	21,10	22,99	24,88	26,77

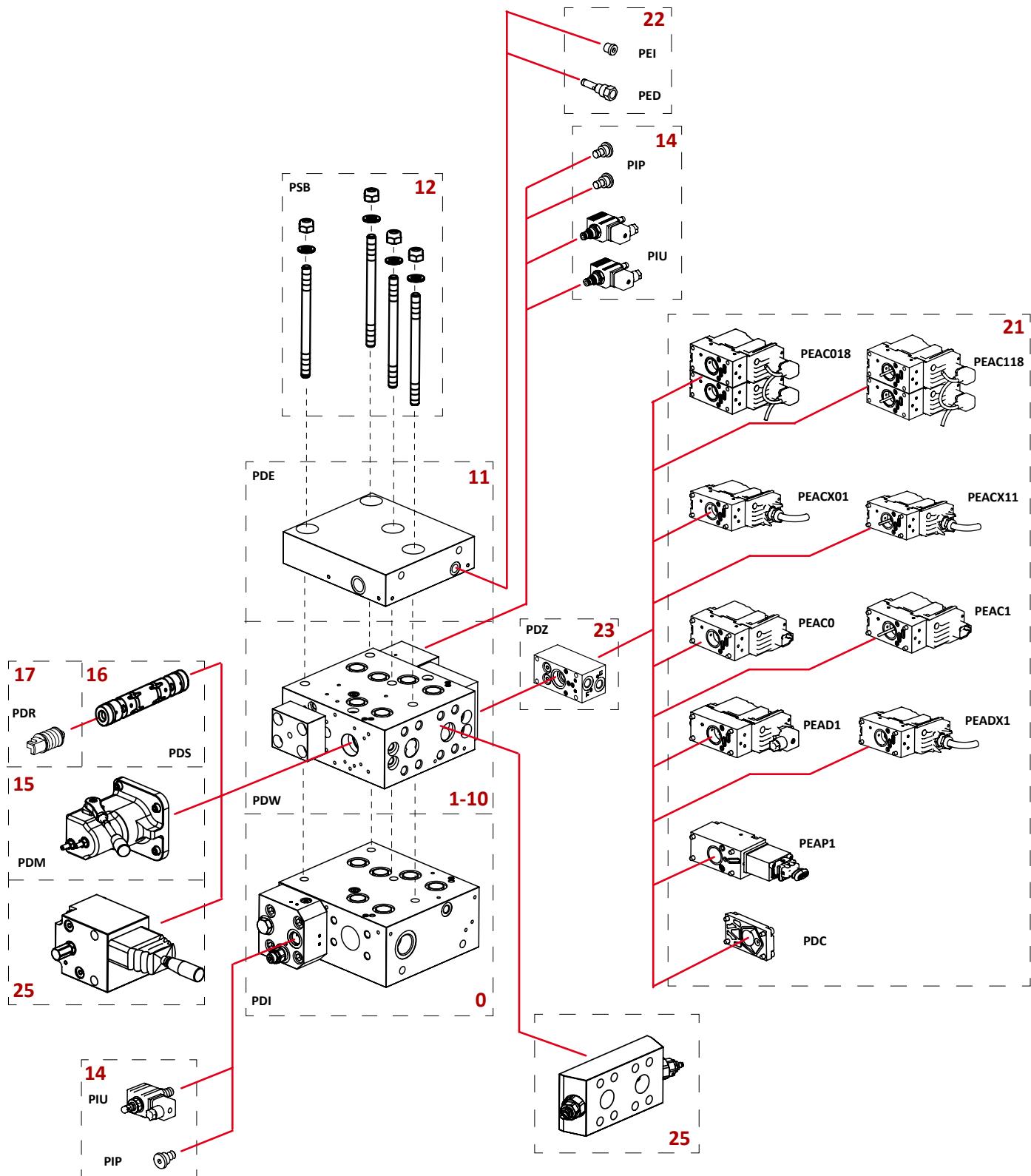
- A** = Pump side port - 3/4" BSPP - 17 mm deep [1 1/16 in 12 UN-2B - 0,67 in deep]
- B** = T port - 3/4" BSPP - 17 mm deep [1 1/16 in 12 UN - 2B - 0,67 in deep]
- C** = Main pressure relief valve
- D** = Main pressure reducing valve
- E** = Pump pressure gauge connection - 1/4" BSPP - 12 mm deep [7/16 in-20 UNF-2B - 0,47 in deep]
- F** = LS connection 1/4" BSPP - 12 mm deep [7/16 in-20 UNF-2B - 0,47 in deep]
- G** = External pilot pressure supply connection 1/4" BSPP - 12 mm deep [7/16 in-20 UNF-2B - 0,47 in deep]
- H** = External feeding main pressure reducing valve 1/4" BSPP - 12 mm deep [7/16 in-20 UNF-2B - 0,47 in deep]
- I** = Tank pressure gauge connection 1/4" BSPP - 12 mm deep [7/16 in-20 UNF-2B - 0,47 in deep]
- J** = Electrical LS/pump unloading function
- K** = Pump unloading drain port, 1/4" BSPP - 12 mm deep [7/16 in-20 UNF - 2B - 0,47 in deep]
- L** = Pump unloading mechanical override
- M** = A-B port mechanical flow adjustment
- N** = LSA
- O** = LSB } remote pilot pressure connection 1/4" BSPP - 12 mm deep [7/16 in-20 UNF - 2B - 0,47 in deep]
- P** = LS
- Q** = Port A } 1/2" BSPP - 17 mm deep [7/8 in-14 UNF-2B - 0,67 in deep]
- R** = Port B }
- S** = Lsb } pilot pressure relief valve
- T** = Lsa }
- U** = Shock/suction valve B port
- V** = Shock/suction valve A port
- W** = External drain connection electric actuations - 1/4" BSPP - 12 mm deep [7/16 in-20 UNF-2B - 0,47 in deep]

PDV315 Proportional valve
Overall dimensions drawing with double inlet
and MID end section



PDW		2	3	4	5	6	7	8	9	10	11	12
L1	mm	331	379	427	475	523	571	619	667	715	763	811
	in	13,03	14,92	16,81	18,70	20,59	22,48	24,37	26,26	28,15	30,04	31,93
L2	mm	351	399	447	495	543	591	639	687	735	783	831
	in	13,82	15,71	17,60	19,49	21,38	23,27	25,16	27,05	28,94	30,83	32,72

- A** = Pump side port - 3/4" BSPP - 17 mm deep [1 1/16 in-12 UN-2B - 0,67 in deep]
- B** = T port - 3/4" BSPP - 17 mm deep [1 1/16 in-12 UN - 2B - 0,67 in deep]
- C** = Main pressure relief valve
- D** = Main pressure reducing valve
- E** = Pump pressure gauge connection - 1/4" BSPP - 12 mm deep [7/16 in-20 UNF-2B - 0,47 in deep]
- F** = LS connection 1/4" BSPP - 12 mm deep [7/16 in-20 UNF-2B - 0,47 in deep]
- G** = External pilot pressure supply connection 1/4" BSPP - 12 mm deep [7/16 in-20 UNF-2B - 0,47 in deep]
- H** = External feeding main pressure reducing valve 1/4" BSPP - 12 mm deep [7/16 in-20 UNF-2B - 0,47 in deep]
- I** = Tank pressure gauge connection 1/4" BSPP - 12 mm deep [7/16 in-20 UNF-2B - 0,47 in deep]
- J** = Electrical LS/pump unloading function
- K** = Pump unloading drain port, 1/4" BSPP - 12 mm deep [7/16 in-20 UNF - 2B - 0,47 in deep]
- L** = Pump unloading mechanical override
- M** = A-B port mechanical flow adjustment
- N** = LSA
- O** = LSB } remote pilot pressure connection 1/4" BSPP - 12 mm deep [7/16 in-20 UNF - 2B - 0,47 in deep]
- P** = LS
- Q** = Port A } 1/2" BSPP - 17 mm deep [7/8 in-14 UNF-2B - 0,67 in deep]
- R** = Port B }
- S** = Lsb } pilot pressure relief valve
- T** = Lsa }
- U** = Shock/suction valve B port
- V** = Shock/suction valve A port
- W** = External drain connection electric actuations - 1/4" BSPP - 12 mm deep [7/16 in-20 UNF-2B - 0,47 in deep]



Reference field	Description			Code numbers see pag
0	Inlet sections	Open centre	PDI	
		Closed centre		
1-10	Working sections	with pressure compensator	PDW	
		without pressure compensator		
11	End sections		PDE	
12	Stay bolt set		PSB	
14	Solenoid Ls unloading		PIU	
	Plug for LS unloading cavity		PIP	
15	Mechanical actuation		PDM	
16	Spool		PDS	
17	Spool centered set		PDR	
21	Proportional electro-hydraulic actuations	Open loop spool control current signal for PWM and ON-OFF control	PEAD1	
		Open loop spool control high resolution	PEAC0	
		Closed loop spool control high performance resolution	PEAC1	
		Open loop spool control high resolution CAN-Bus	PEAC018	
		Closed loop spool control high performance resolution CAN-Bus	PEAC118	
		Open loop spool control high resolution ATEX	PEACX01	
		Closed loop spool control high performance resolution ATEX version	PEACX11	
		Open loop spool control current signal for PWM and ON-OFF control ATEX version	PEADX1	
		Open loop spool control current input signal for PWM and ON-OFF control - AMP JPT 4 pin	PEAP1	
	Rear cover for	Hydraulic control	PDH	
		Detent	PDD	
		Friction detent	PDF	
		Mechanical actuation	PDC	
22	End sections	External drain line cartridge	PED	
		Internal plug	PEI	
23	Dual function control body		PDZ	
25	Antishock body			

Code: PDV315

Date: / /

Review index: -

Review date: -

Customer:

Customer ref:

Issued by:

OMFB sales ref:

I	Valve type:	PDV 315	v	Working sections Up:	8	IX	Rated voltage [V]:	12
II	Type of threads:	BSPP	vi	Working sections Down:		X	Certifications:	None
III	Type of inlet:	standard	vii	Inlet section side:	Right version	XI		
IV	Pump type:	Open Center	viii	2 nd pump type:		XII	Pump flow [l/min]:	
	Notes							Notes
0			B Port	0	bar	13	A Port	
				23	bar	14		
			Actuation side				Handle side	
1			21	1	bar	16	15	
			17	20	bar	20		
				19	bar	19		
				18	bar	23		
2			21	2	bar	16	15	
			17	20	bar	20		
				19	bar	19		
				18	bar	23		
3			21	3	bar	16	15	
			17	20	bar	20		
				19	bar	19		
				18	bar	23		
4			21	4	bar	16	15	
			17	20	bar	20		
				19	bar	19		
				18	bar	23		
5			21	5	bar	16	15	
			17	20	bar	20		
				19	bar	19		
				18	bar	23		
6			21	6	bar	16	15	
			17	20	bar	20		
				19	bar	19		
				18	bar	23		
7			21	7	bar	16	15	
			17	20	bar	20		
				19	bar	19		
				18	bar	23		
8			21	8	bar	16	15	
			17	20	bar	20		
				19	bar	19		
				18	bar	23		
9			21	9	bar	16	15	
			17	20	bar	20		
				19	bar	19		
				18	bar	23		
10			21	10	bar	16	15	
			17	20	bar	20		
				19	bar	19		
				18	bar	23		
11			11			12		
			22					



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