product catalogue

SPV120

Pre-Compensated
Load Sensing Proportional Valve

Load Independent Proportional Control	Precise Control & Efficiency	Advanced Customized Controls

SPV120

Pre-Compensated Load Sensing Proportional Valve

Index

All the specifications shown in this catalogue are mainly standard configurations. Please contact our Sales Department for other requests.
We reserve the right to introduce improvements and make necessary changes without prior notice.
Akon Hidrolik is not responsible for any damage caused by an incorrect use of the product.

General Specifications

Product Features & Benefits

Load Independent Proportional Control

SPV120 is a stackable, load sensing, pressure compensated directional control valve, provides flow control independent of load pressure from 5 to 130 lpm.

Precise Control & Efficiency

SPV120 offers precise control and efficieny with for a wide range of applications from mobile cranes, fire engines, agricultural machineries, aerial platforms & lifts, concrete pumps to mining and drillings machines. Energy saving *Load Sensing Technology* increase efficiency.

Time Saving Modular Structure

Modular structure enables unlimited configurations to the user with less effort.

Pressure Compensator

With pressure compensators in each section, actuators are compensated and maintained a constant pressure drop against changes in load.

Advanced Customized Control

Thanks to the careful design engineering SPV120 offers advanced customized control with antishock / anticavitation valves, LSA/LSB pressure relief valves, spool stoke limitors, precise spool adjustments specific for the application requirements. The valve completes advanced control abilities through various actuator options; manual, hydraulic proportional, open and close loop electro-hydraulic proportional controls.

Working Conditions

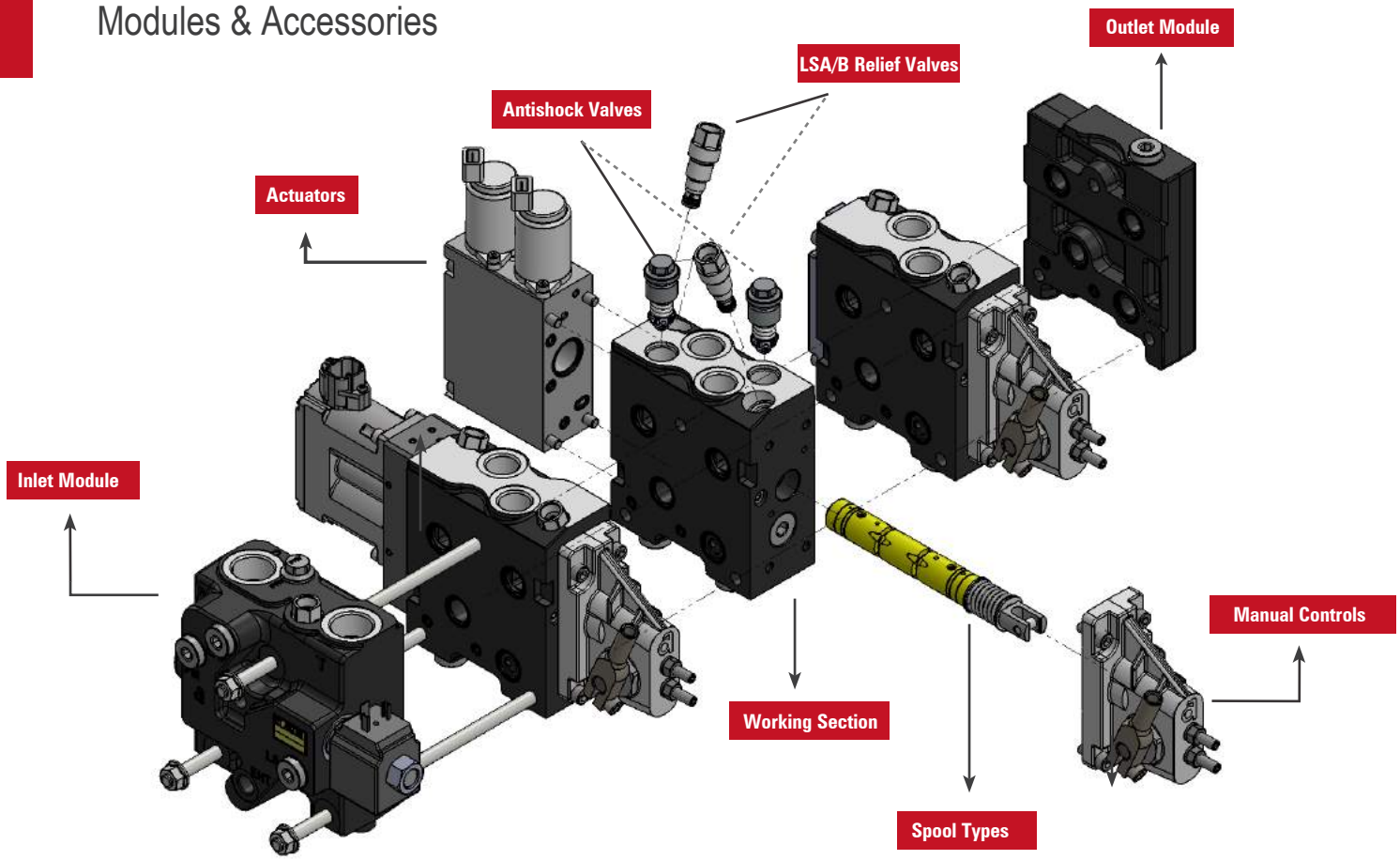
Recommended Oil Viscosity Operating Range	**12 cSt to 75 cSt**	
Minimum / Maximum Viscosity	**10 cSt / 400 cSt**	
Recommended Fluid Temperature Range (°C)	**-20 to +90**	
Ambient Temperature in Operating Conditions (°C)	/ e ni on ro s **-30 to +60**	w/ electric actuators **-30 to +50**
Maximum Contamintation Level	**Class 9 (NAS 1638)**	**20/18/15 (ISO 4406)**

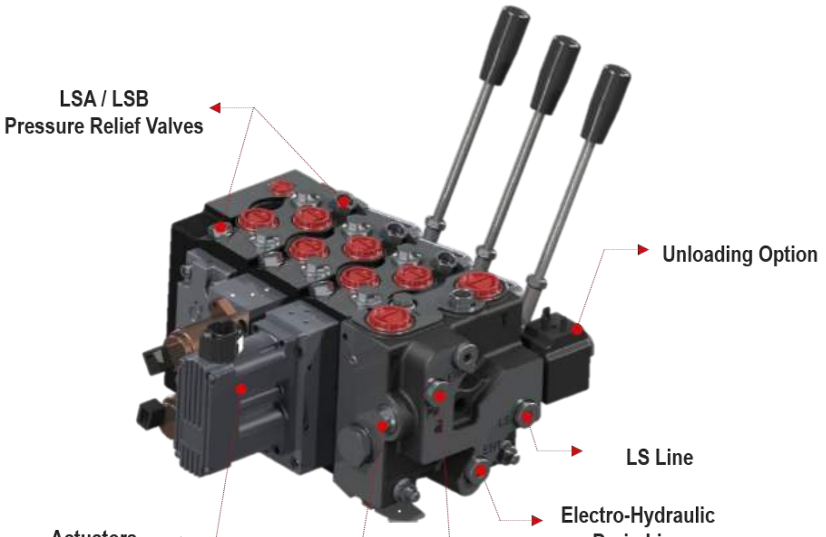
Technical Specifications

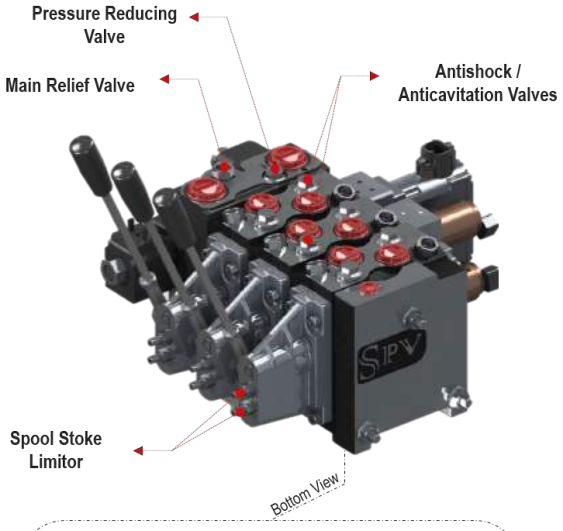
Number of Spools		**1 - 12**	
Nominal Flow on Inlet		**150 lpm**	**40 US gpm**
Nominal Flow on Ports	*Compensated*	**130 lpm**	**34 US gpm**
o in o on or s	*Not Compensated*	**140 lpm**	**36,8 US gpm**
M i or in ress re	*Port P, A/B continous* *Port A/B* *Port LS*	**350 bar** **420 bar** **350 bar**	**5075 psi** **6090 psi** **5075 psi**
Maximum Back Pressure		**30 bar**	**430 psi**
Maximum Internal Leakage	*Without Shock Valves* *With Shock Valves*	**12 cc** **15 cc** **(100 Bar; 32 cSt, 40˚C)**	**0,73 in3/m** **0,92 in3/m** **(1450 psi; 32 cSt, 104°F)**

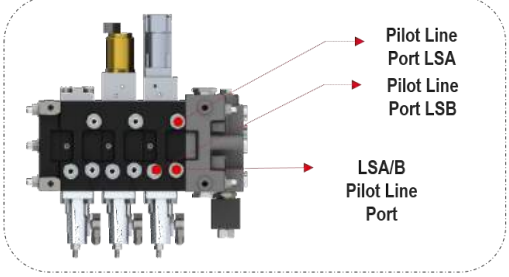
General Specifications

Modules & Accessories







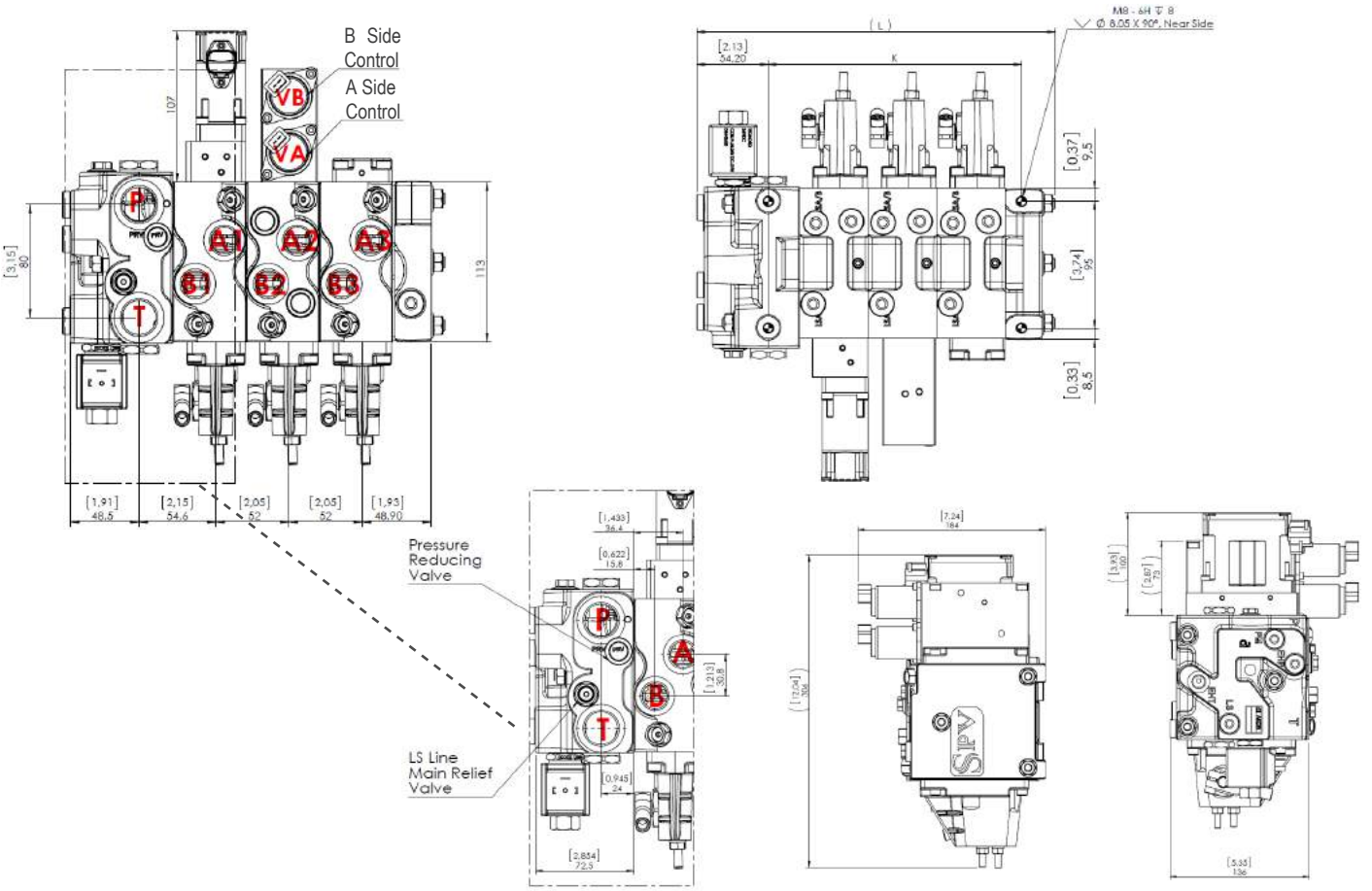


Dimensional Data

Standard & Optional Threads

Thread	Code	P	A/B	T	LSA/B	PM
BSP (Standard)	B	G 3/4"	G 1/2"	G 3/4"	G 1/4"	G 1/4"
	C	G 3/4"	G 3/4"	G 3/4"	G 1/4"	G 1/4"
UN - UNF	M	1 1/16-12 (SAE 12)	7/8 – 14 (SAE 10)	1 1/16-12 (SAE 12)	9/16-18(SAE6)	9/16-18(SAE6)
	N	1 1/16-12 (SAE 12)	1 1/16–12 (SAE 12)	1 1/16-12 (SAE 12)	9/16-18(SAE6)	9/16-18(SAE6)

G1/2" BSP thread is standard. For other demands please contact with our Sales Department.



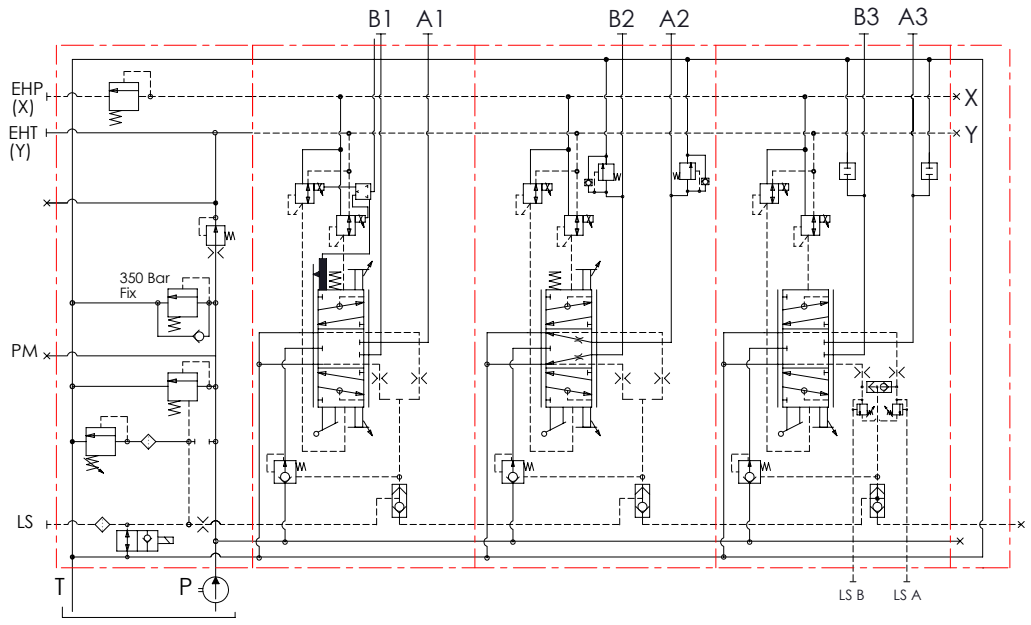
Dimensions

Type	K		L	
	mm	inc	mm	inc
SPV121	68	2.67	88	3.46
SPV122	120	4.72	140	5.51
SPV123	172	6.77	192	7.55
SPV124	224	8.81	244	9.60
SPV125	276	10.86	296	11.65
SPV126	328	12.91	348	13.70
SPV127	380	14.96	400	15.75
SPV128	432	17.00	452	17.79
SPV129	484	19.05	504	19.84

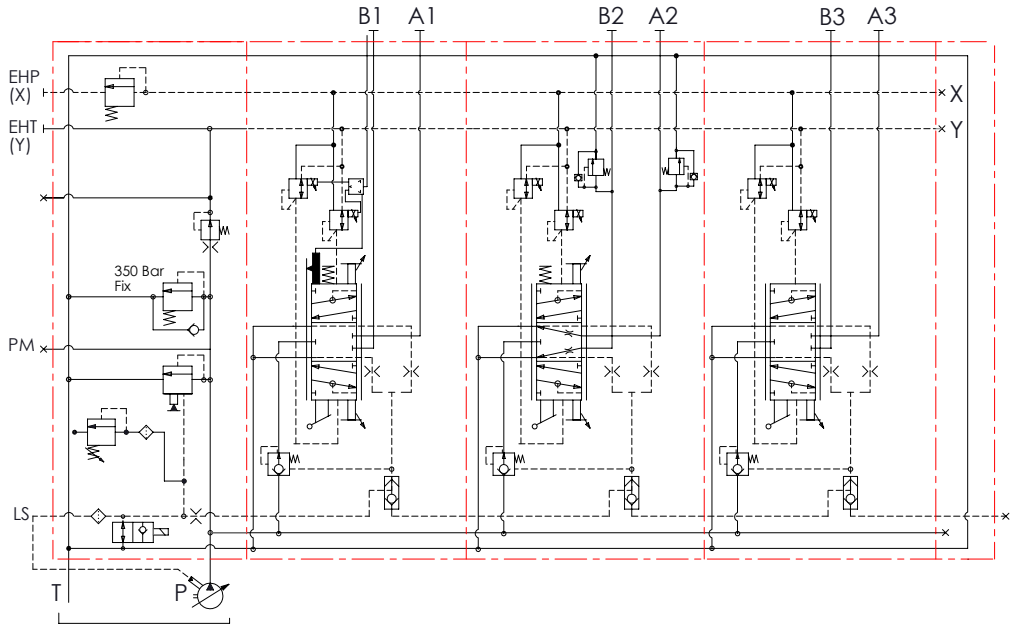
Given dimensions are for standard configurations.

Hydraulic Specifications

Systems fed by fixed displacement pumps

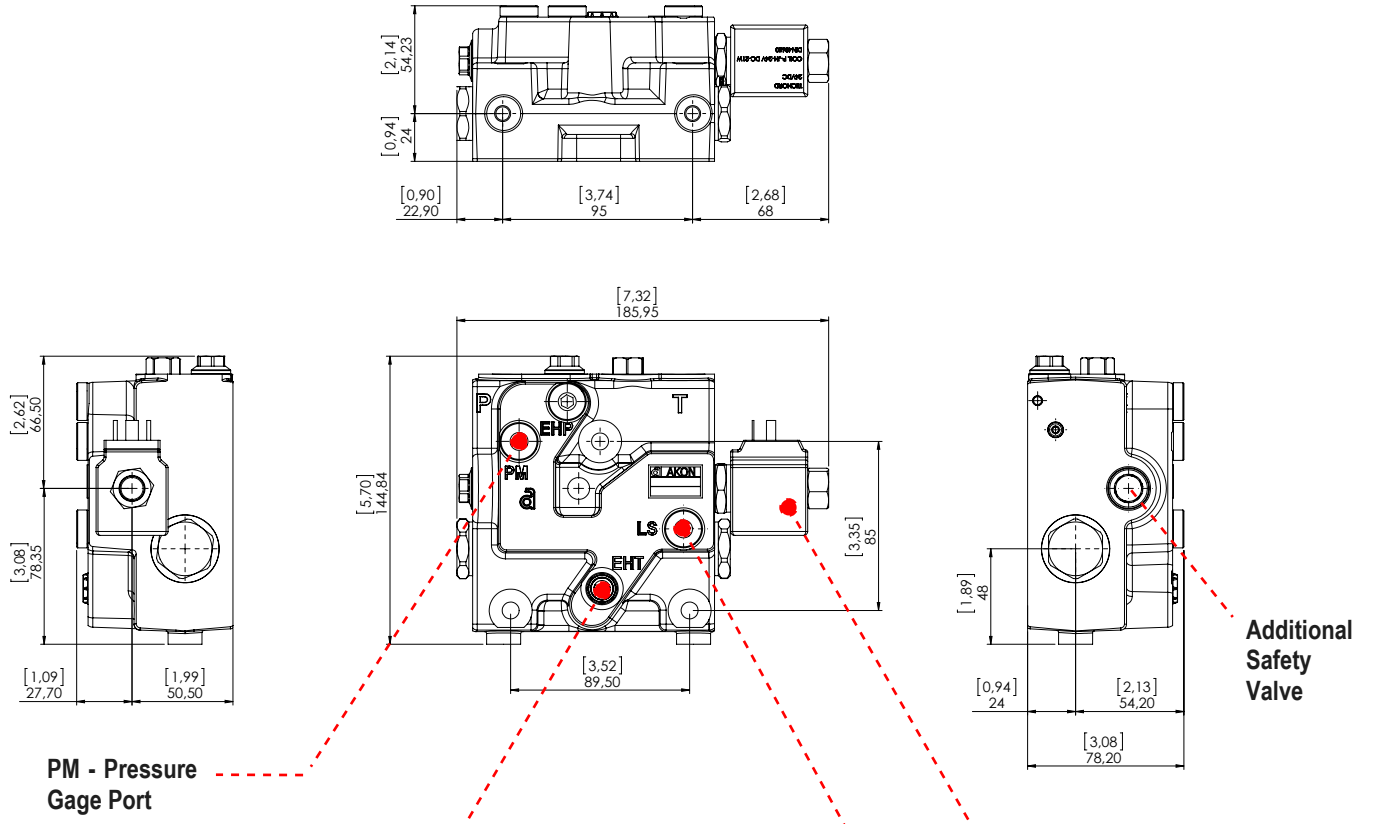


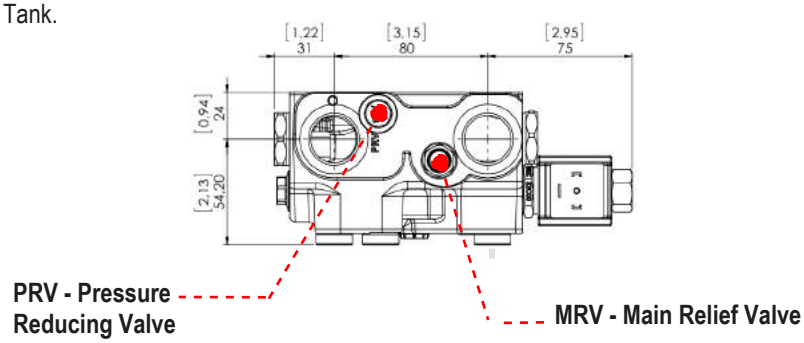
Systems fed by variable displacement pumps



Inlet Section

Dimensions & Weight





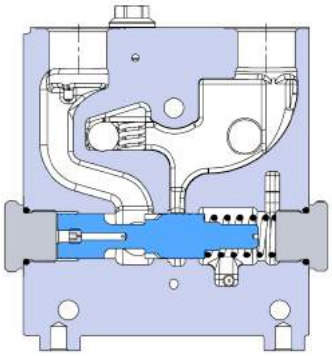
Approximate weight with EHP, PM, EHT, LS, PRV and MRV is 5,50kgs / 12,20lbs.

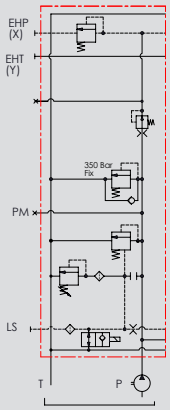
Inlet Modules

POHN

Open Center Inlet Module for fixed displacement pumps with electro-hydraulic and unloading module (For electric actuators)

Port Thread	Size	Order Code
BSP	G3/4"	120POHN1600



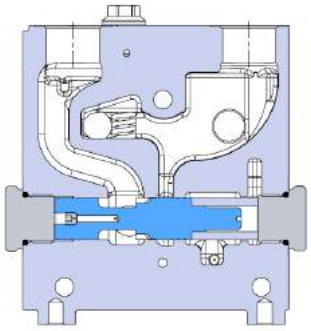


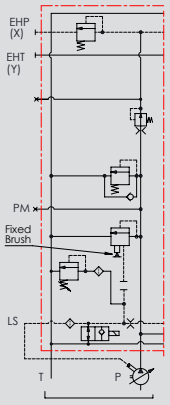
* Inlet module is prearranged & plugged for unloading valve, "Unloading Valve" is not included, please check order unloading seperately.
* Inlet Module incudes "Main Relief Valve"

PCHN

Closed Center Inlet Module for variable displacement pumps with electro-hydraulic and unloading module (For electric actuators)

Port Thread	Size	Order Code
	" 1	C 17

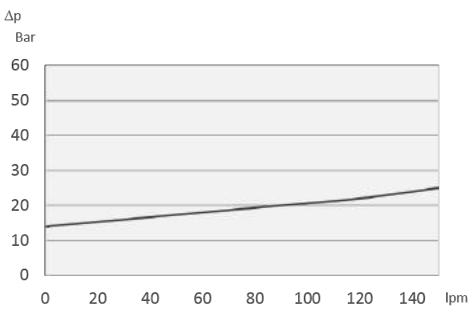




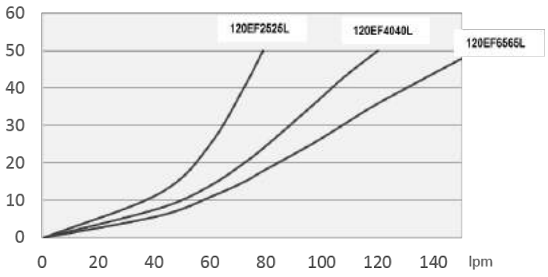
* Inlet module is prearranged & plugged for unloading valve, "Unloading Valve" is not included, please check order unloading seperately.
* Inlet Module incudes "Main Relief Valve"

Performance Curves

P – T / Pressure Drop Inlet Compansator

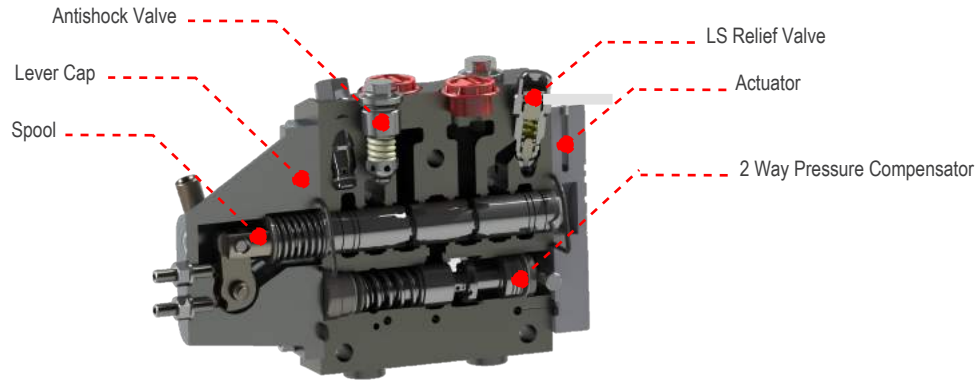


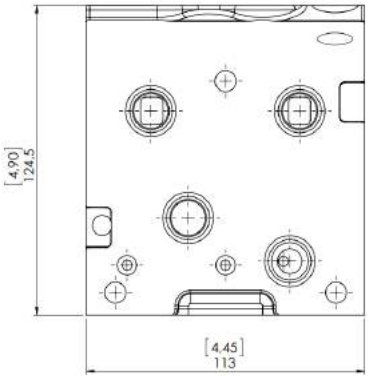
A/B – T Pressure Drop @ Full Stroke

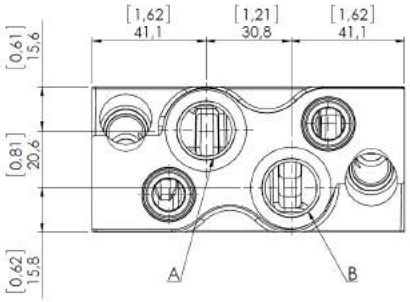


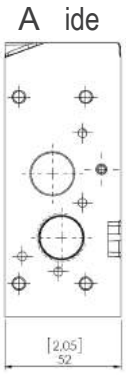
Working Section

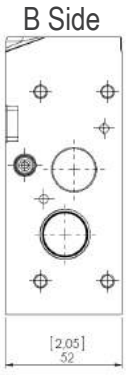
Working Section with 2 Way Pressure Compensator



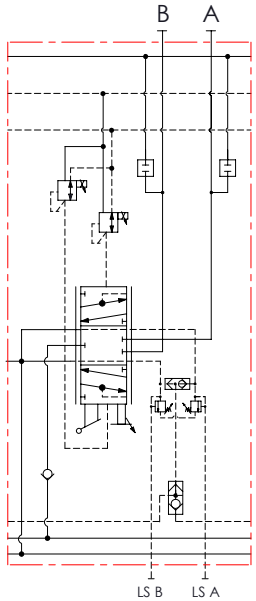








Working Section Configurations

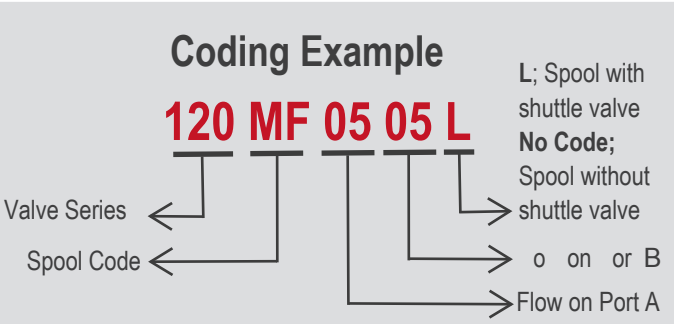


	Thead	Configuration	Code
W/ LSA/LSB (SEPERATE) PILOT LINE PORT AND ADJUSTABLE LSA / LSB PRESSURE RELIEF VALVES	G 1/2"	w/ shock valve cavity	120DL3411
		w/o shock valve cavity	120DL3410
	7/8-14 UNF	s o e i	120DL3422
		o s o e i	120DL3420

Other configurations are available, please contact our Sales Department for other codes & details.

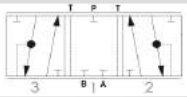
Spool Options

Coding Example



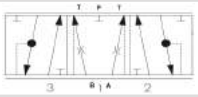
Spools for Mechanical Actuators

MF — Closed Center, A/B Closed in Neutral



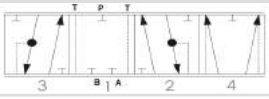
Flow	5 lpm	10lpm	25lpm	40lpm	65lpm	100lpm	135lpm
Code	120MF0505L	120MF1010L	120MF2525L	120MF4040L	120MF6565L	120MF100100L	120MF135135L

MFT — Closed Center, A/B Partially to Tank in Neutral



Flow	5 lpm	10lpm	25lpm	40lpm	65lpm	100lpm	135lpm
Code	120MF0505L	120MF1010L	120MF2525L	120MF4040L	120MF6565L	120MF100100L	120MF135135L

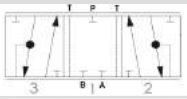
MFF — Closed Center, Float in 4th Position



Flow	5 lpm	10lpm	25lpm	40lpm	65lpm	100lpm	135lpm
Code	120MFF0505L	120MFF1010L	120MFF2525L	120MFF4040L	120MFF6565L	120MFF100100L	120MFF135135L

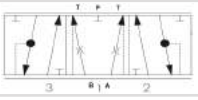
Spools for Electric Actuators

EF — Closed Center, A/B Closed in Neutral



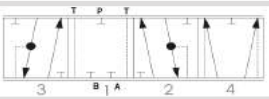
Flow	5 lpm	10lpm	25lpm	40lpm	65lpm	100lpm	135lpm
Code	120EF0505L	120EF1010L	120EF2525L	120EF4040L	120EF6565L	120EF100100L	120EF135135L

EFT — Open Center, A/B Partially to Tank in Neutral



Flow	5 lpm	10lpm	25lpm	40lpm	65lpm	100lpm	135lpm
Code	120EFT0505L	120EFT1010L	120EFT2525L	120EFT4040L	120EFT6565L	120EFT100100L	120EFT135135L

FF — Closed Center, Float in 4th Position

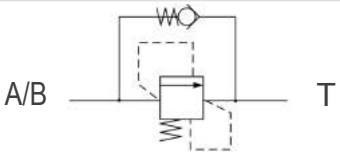


Flow	5 lpm	10lpm	25lpm	40lpm	65lpm	100lpm	135lpm
Code	120F 0505L	120F 1010L	120F 2525L	12F 4040L	120 F6565L	120 F100100L	120 F135135L

Please contact our Sales Department for asymmetric spools demands.

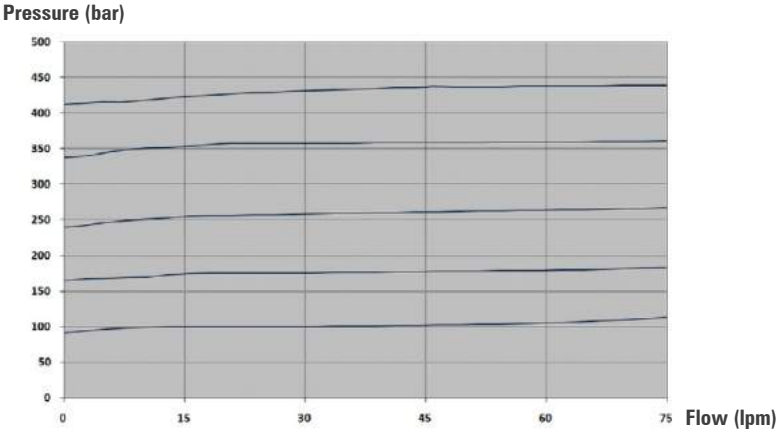
Auxiliary Valves

ASV Antishock & Anticavitation Valves

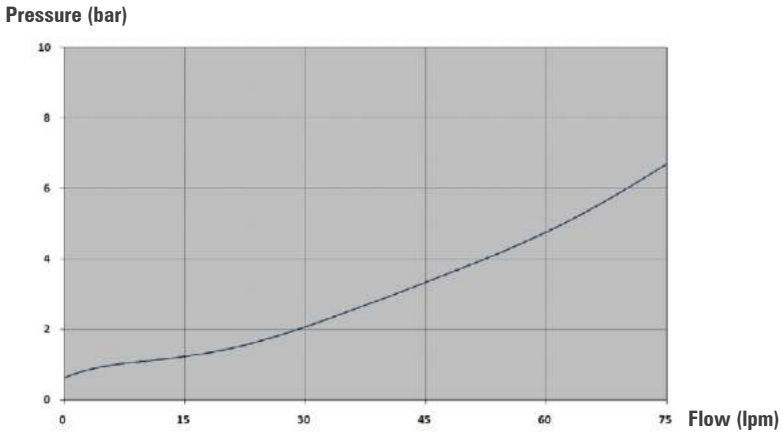


Performance Curves

Relief Valve Function



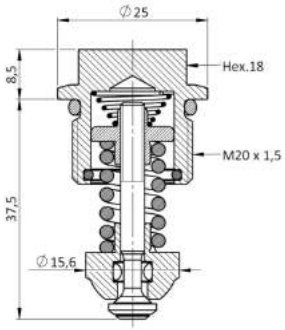
Anticavitation Function



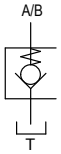
Bar / Psi	Code	Bar / Psi	Code
30 / *435*	120ASV6030	210 / 3045	120ASV6210
40 / *580*	120ASV6040	220 / 3190	120ASV6220
50 / 725	120ASV6050	230 / 3335	120ASV6230
60/ 870	120ASV6060	240 / 3480	120ASV6240
70/ 1015	120ASV6070	250 / 3625	120ASV6250
80 / 1160	120ASV6080	260 / 3770	120ASV6260
90/ 1305	120ASV6090	270 / 3915	120ASV6270
100 / 1450	120ASV6100	280 / 4060	120ASV6280
110/ 1595	120ASV6110	290 / 4205	120ASV6290
120 / 1740	120ASV6120	300 / 4350	120ASV6300
130/ 1885	120ASV6130	310 / 4495	120ASV6310
140 / 2030	120ASV6140	320 / 4640	120ASV6320
150/ 2175	120ASV6150	330 / 4785	120ASV6330
160/ 2320	120ASV6160	340 / 4930	120ASV6340
170/ 2465	120ASV6170	350 / 5075	120ASV6350
180 / 2610	120ASV6180	360 / 5220	120ASV6360
190 / 2755	120ASV6190	370 / 5365	120ASV6370
200 / 2900	120ASV6200	380 / 5510	120ASV6380
Cavity Plug	1 V 1		

** Antishock & Anticavitation valves are non-adjustable type.*

** Pressure setting @ 10lpm.*



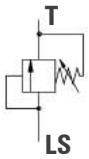
SV Anticavitation Valves



Code
120SV6003

Auxiliary Valves

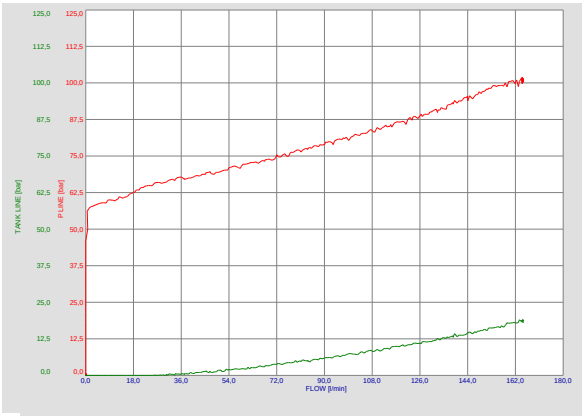
LRV LS Relief Valves



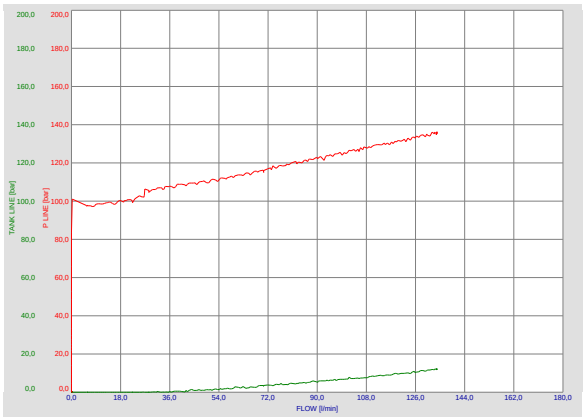
Bar / Psi	Code	Bar / Psi	Code
30 / *435*	120LRV6030	210 / 3045	120LRV6210
40 / *580*	120LRV6040	220 / 3190	120LRV6220
50 / 725	120LRV6050	230 / 3335	120LRV6230
60/ 870	120LRV6060	240 / 3480	120LRV6240
70/ 1015	120LRV6070	250 / 3625	120LRV6250
80 / 1160	120LRV6080	260 / 3770	120LRV6260
90/ 1305	120LRV6090	270 / 3915	120LRV6270
100 / 1450	120LRV6100	280 / 4060	120LRV6280
110/ 1595	120LRV6110	290 / 4205	120LRV6290
120 / 1740	120LRV6120	300 / 4350	120LRV6300
130/ 1885	120LRV6130	310 / 4495	120LRV6310
140 / 2030	120LRV6140	320 / 4640	120LRV6320
150/ 2175	120LRV6150	330 / 4785	120LRV6330
160/ 2320	120LRV6160	340 / 4930	120LRV6340
170/ 2465	120LRV6170	350 / 5075	120LRV6350
180 / 2610	120LRV6180	360 / 5220	120LRV6360
190 / 2755	120LRV6190	370 / 5365	120LRV6370
200 / 2900	120LRV6200	380 / 5510	120LRV6380
Cavity Plug	1120LRV-P6002		

** Pressure setting @ 15lpm.*

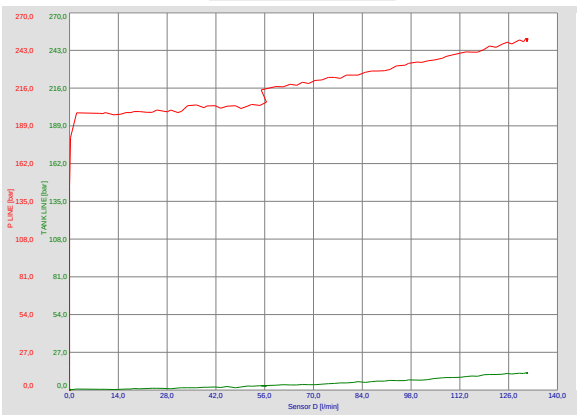
50 bar



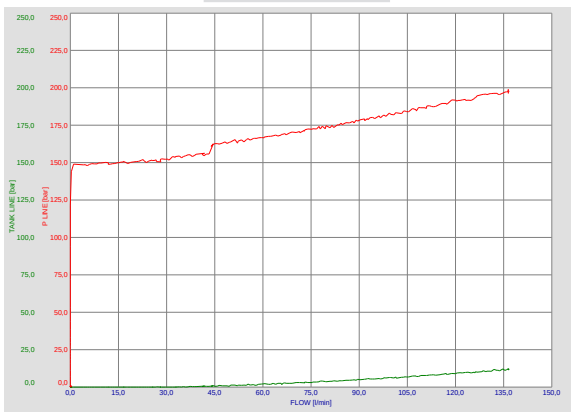
100 bar



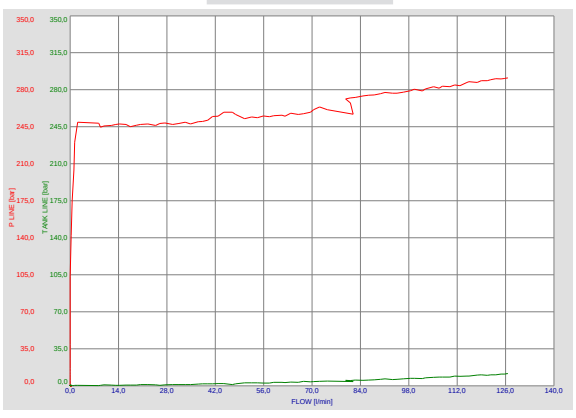
200 bar



150 bar

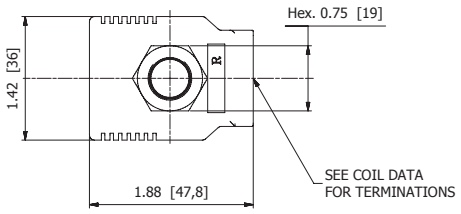


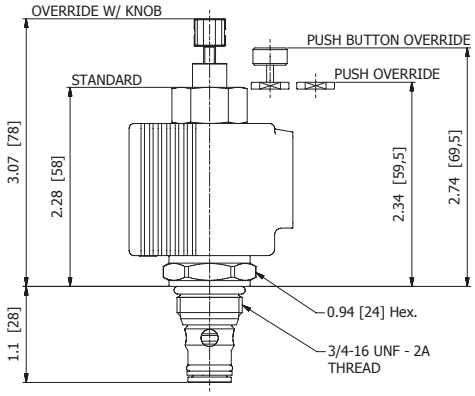
250 bar

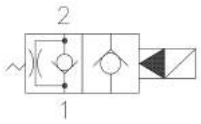


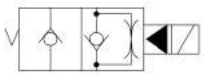
Auxiliary Valves

UN Unloading Modules





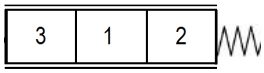
Normally Open with Manual Override 	DIN 43650 (Hirschmann)	**Supply**	**Code**
		12VDC	120UN5040
		24VDC	120UN5050
	AMP	12VDC	120UN5041
		24VDC	120UN5051

Normally Closed with Manual Override 	irs nn	**Supply**	**Code**
		1 V	1 6
		V	1 7
	AMP	1 V	1 1
		V	1 1

Actuators

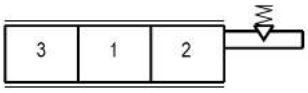
Spring Return to Neutral

Code
MP8000



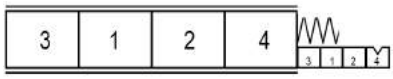
Friction Detent

Code
MPS8010



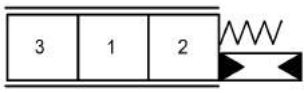
Float with Detent in 4th Position

Code
M F 2



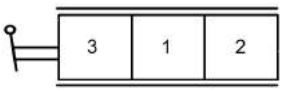
Hydraulic Control

Thread	Code
G1/4"	MPF8030
9/16-18 UNF	MPF8031



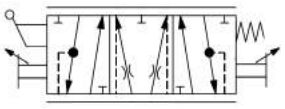
Lever Cap

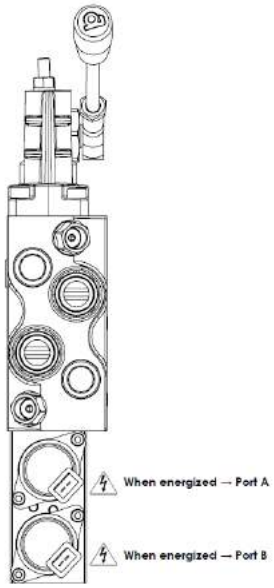
Type	Material	Code
With Spool Stroke Limitor	Aluminium	MPF8050
	Cast Iron	MPF8060
i out oo ro e i i or	ini	MPF8051
	s ron	MPF8061

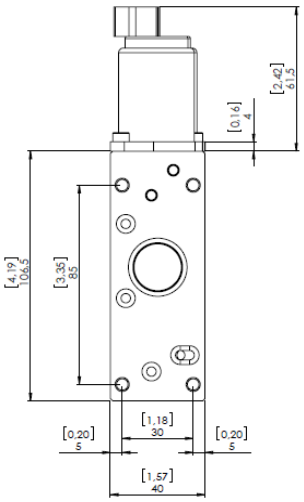


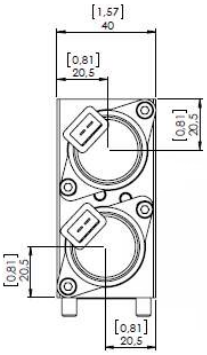
Actuators

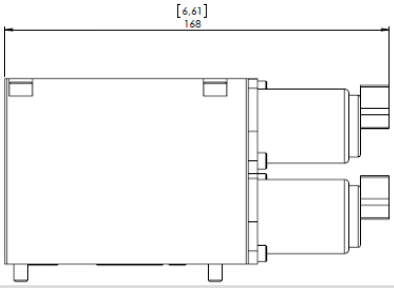
Electro-Hydraulic open Loop PWM Proportional Control











Features

PWM current control signals,
Connectior options; AMP, JPT, Deutsch DT
Supply options; 12 / 24 VDC
Pilot Pressure; Minimum 25 bar

Parameter	Control Range	
	12V	24V
Control Output Current Range	0-1500 mA	0-750 mA
Pressure Control Range	5-17 Bar	
Resistance	4.75 Ω ± %5	20,8 Ω ± %5

	Code	
Supply	Deutsch	AMP
12 VDC	120EHP5402	120EHP5401
24 VDC	120EHP5412	120EHP5411

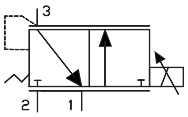
Actuators

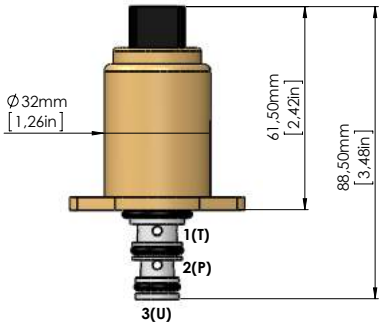
Solenoid Valve Specifications

Nominal Flow	1 GPM (3.8 LPM) @ 8 bar Delta P
Max Inlet Pressure “H” version	5000 PSI (350 bar)
Max Inlet Pressure “L” version	700 PSI (50 bar)
Controlled Pressure Range	0 ÷ 25 bar / 0 ÷ 30 bar (see graph)
Reduced Pressure Tolerance	±5%
Max Back-Pressure at T port	20 bar
Internal Leakage	15 ml/min @ 500 PSI (35 bar) inlet 35 ml/min @ 5000 PSI (350 bar) inlet
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/15/13
Media Operating Temp. Range	-25°C / +90°C
Weight	.54 lbs (.25 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cavity	T043
Cavity Tool Kit	K-T043
Flange Mounting Screws	M4x10 / torque 3ft-lbs (4 Nm)

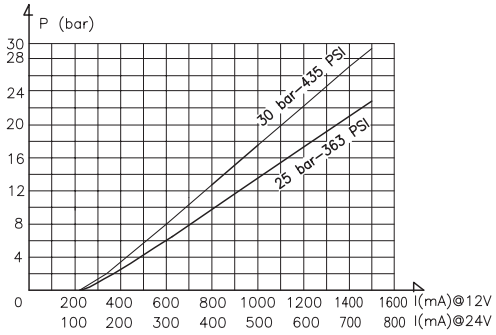
Coil Specifications

Current Supply Characteristics	PWM (Pulse Width Modulation)
Rated Current Range	200 ÷ 1500 (12 V coil) 100 ÷ 750 (24 V coil)
PWM or Super-Imposed Dither Frequency	100 - 200 Hz
Coil Resistance (12 VDC)	5.4 Ohm ±5% at 68°F (20°C)
Coil Resistance (24 VDC)	22 Ohm ±5% at 68°F (20°C)
Max Power Consumption	12 Watt (20°C)
Protection Degree	IP 67 according to IEC 529
Coil Termination	Deutsch-Integral DT04-2P AMP Junior Timer 84-9419
Color Connectors	Black



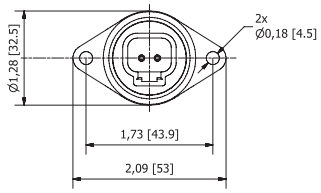


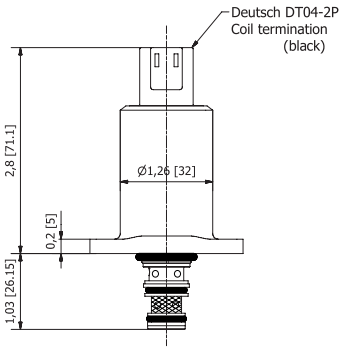
Performance



Dimensions

Deutsch

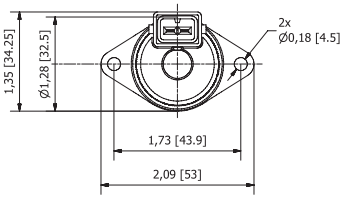


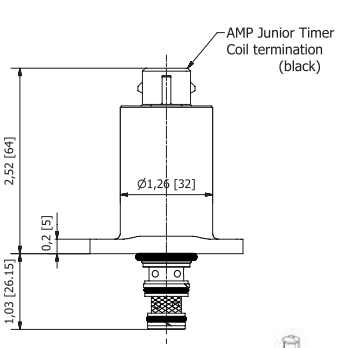


Connector

Protection Class:IP 67

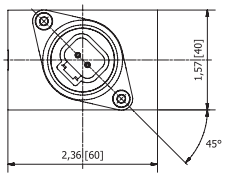
AMP

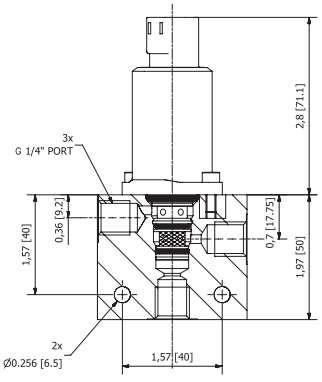




Connector

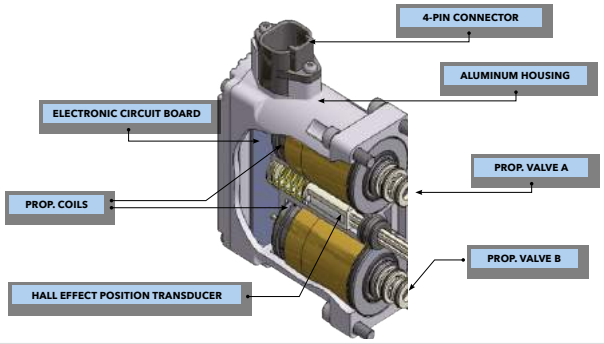
ro e ion ss 6



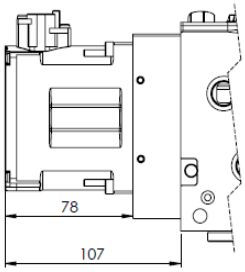


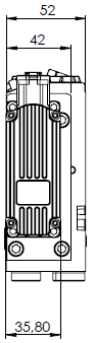
Actuators

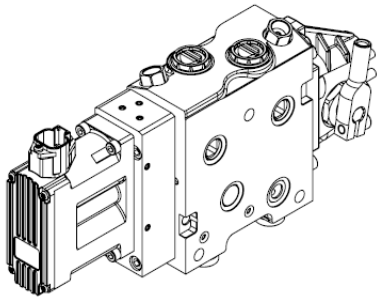
Electro-Hydraulic Close Loop Proportional Control



Dimensions





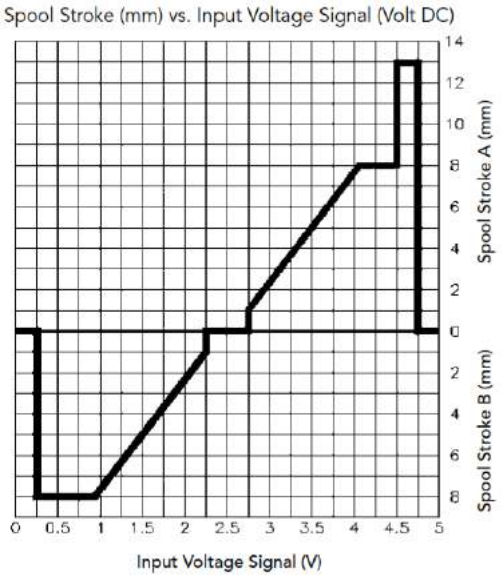


Hydraulic Specifications

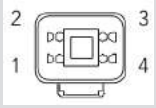
Max. supply pressure..... 35 bar
Min. supply pressure ..... 12 bar
Max. back pressure..... 1.5 bar
Pilot flow requirement..... 0.2 lt/section
Oil temperature range ..... -20/+95°C
Oil viscosity range ..... 3-650 cSt
Filtration ..... 18/15 (ISO 4406)

Electric Specifications

Operating voltage ..... 8-30 VDC
Max. current consumption 750mA/section
Operating temperature..... -20/+105°C
Analog input impedance ..... >40 kOhm
Typical ctrl pot. resistance..... 1-10 kOhm
Analog input signal 0-5V
Degree of protection..... IP 68



Control Type	Code
Digital Control w/ +5V auxiliary power supply for the control potentiometer	120EHP5462
Digital Control w/ 0-5V spool position feedback ouput	120EHP5472
i i on ro / CANBus	120EHP5482



120EHP5462
1. + Power Supply
2. + 5V Aux. Supply voltage
3. Control Signal
4. - Power Supply (GND)

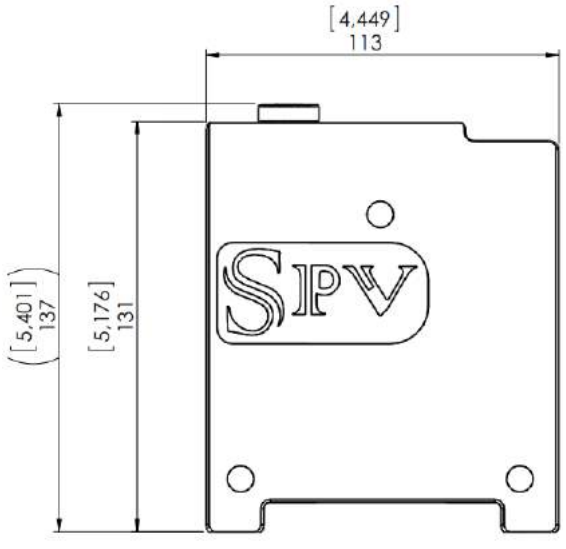
120EHP5482
1. + Power Supply
2. CANL
3. CANH
4. - Power Supply (GND)

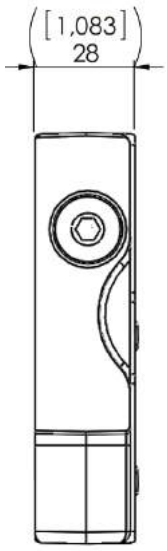
120EHP5472
1. + Power Supply
2. Sensor Feedback Output
3. Control Signal
4. - Power Supply (GND)

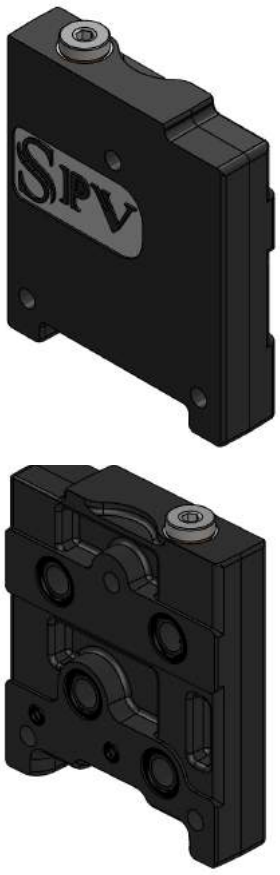
Outlet Section

Standard Outlet Section without LS Connection

Dimensions







Configuration & Code

View	Hydraulic Scheme	Material	Code
		Cast Iron	120ES4010

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export@akon.com.tr
sales@akon.com.tr