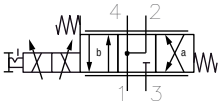
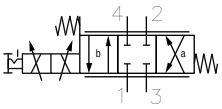
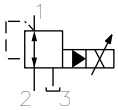
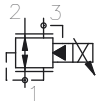
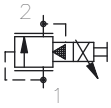
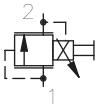
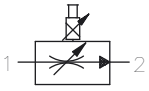
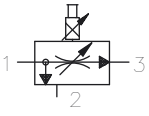
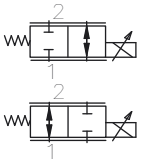
11

Proportional Valves

	MODEL	DESCRIPTION	FLOW	CAVITY
	PDFC-4M	4/3 PROPORTIONAL DIRECTIONAL VALVE	8 GPM	C1040
	PDFC-4L			
	EPRR-10	PROPORTIONAL PRESS. REDUCING/RELIEVING	1 GPM	C1030
	EPRT-08	PROPORTIONAL PRESS. REDUCING/RELIEVING	7 GPM	C0830/AM
	EPRS-10 EPRS-12	PROP. P.O. PRESSURE REDUCING/RELIEVING	12 GPM 24 GPM	C1030 C1230
	ERVP-10 ERVP-12	PROPORTIONAL P.O. PRESSURE RELIEF	25 GPM 60 GPM	C1020 C1220
	ERVD-10	PROPORTIONAL PRESS. RELIEF, LOW FLOW	1 GPM	C1020
	EPFI-10 EPFI-12 EPFC-16	PROPORTIONAL PRESS. COMP. FLOW CONTROL	8 GPM 15 GPM 20 GPM	C1020 C1220 C1620
	EPFB-10 EPFB-12 EPFD-16	PROP. PRIORITY PRESS. COMP. FLOW CONTROL	8 GPM 15 GPM 20 GPM	C1030 C1230 C1630
	PFCV-10 PFCV-12 PFCV-16	PROPORTIONAL NON-COMP. FLOW CONTROL	16 GPM 24 GPM 36 GPM	C1020 C1220 C1620

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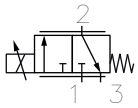
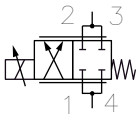
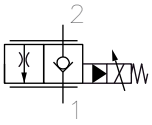
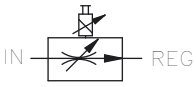
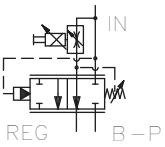
Proportional Valves

	MODEL	DESCRIPTION	FLOW	CAVITY
	MDR32GN	PROPORTIONAL 3/2 THROTTLE CARTRIGE	8 GPM	AM
	MDR42A	PROPORTIONAL 4 /2 THROTTLE CARTRIGE	8 GPM	AN
	MVRPSBA-2G	PROPORTIONAL THR OTTLE CARTRIGE	13 GPM	C0820/AL
	PIFC-10 PIFC-12 PIFC-16	PROP. FLOW CONTROL WITH COMPENSATOR	16 GPM 24 GPM 36 GPM	C1020 C1220 C1620
	PBFC-10 PBFC-12 PBFC-16	PROP. PRIORITY FLOW CONTROL WITH COMP.	16 GPM 24 GPM 36 GPM	C1030 C1230 C1630

PWM-1400	PWM MICRO PROPORTIONAL VALVE DRIVER
PWM-1401	PWM PROPORTIONAL DRIVER, COIL MOUNTED
PWM-1404	PWM PROPORTIONAL DRIVER CONTROL BOX

4/3 Proportional Directional Valve, Size SAE 10

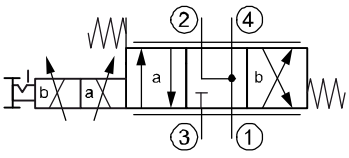
Q_{max} = 8.0 gpm [30 l/min], p_{max} = 4000 psi [280 bar]
Direct acting, sliding-spool design, with solenoid operation
Series PDFC-10…

- Compact construction for cavity type C1040 – 7/8-14 UNF
- Operated by a proportional high pressure wet-armature solenoid
- Minimum current threshold/ dead band (position b) is factory set for better consistency
- Manual over-ride optionally available, detented in neutral position
- Excellent reproducibility and repeatability, and low hysteresis
- All exposed parts with zinc-nickel plating
- The slip-on coil can be rotated, and it can be replaced without opening the hydraulic envelope
- Various plug-connector systems and voltages are available
- Can be fitted in a line-mounting body

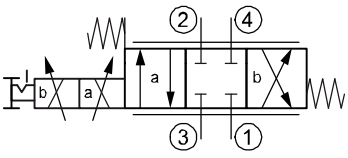
1 Description

Series PDFC-10… proportional directional valves are direct acting screw-in cartridges with a sliding spool design and a 7/8-14 UNF mounting thread. In the neutral position, port 3 is closed and depending on the spool type, ports 2 and 4 are connected to tank (1) (spool configuration M) or ports 1, 2 and 4 are all blocked (spool configuration L). The version with the M spool is used in motor control circuits where free-wheeling in the neutral position is required. The L configuration is the version to use for cylinder applications. These cartridges are particularly suitable for precise and controlled lifting and lowering movements and can also be used for reliable operation in mobile and industrial applications. Best controllability is achieved when using the valve with a bypass pressure compensator to control pressure drop through the valve. Using the valve without pressure compensator is not recommended because higher pressure drops cause the flow to be more restricted (see performance graph). The proportional directional valves is optionally equipped with a manual over-ride which is detented in the neutral position. To unlatch the detent mechanism, the button on the back can be pushed. That allows shifting the valve in both directions. Pushing the knob shifts the valve to position (a) (3→2 and 4→1) and pulling shifts it to position (b) (3→4 and 2→1). All external parts of the cartridge are zinc plated and chromited (CrVI-free). The slip-on coils can be replaced without opening the hydraulic envelope and can be positioned at any angle through 360°. If you intend to manufacture your own cavities or are designing a line-mounting installation, please refer to the section “Related data sheets”.

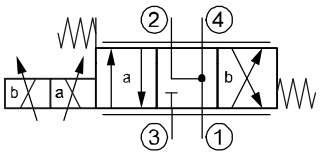
2 Symbol



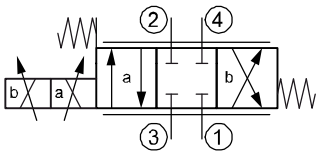
PDFC-10-…-4M-M…



PDFC-10-…-4L-M…



PDFC-10-…-4M-0…



PDFC-10-…-4L-0…

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3 Technical data

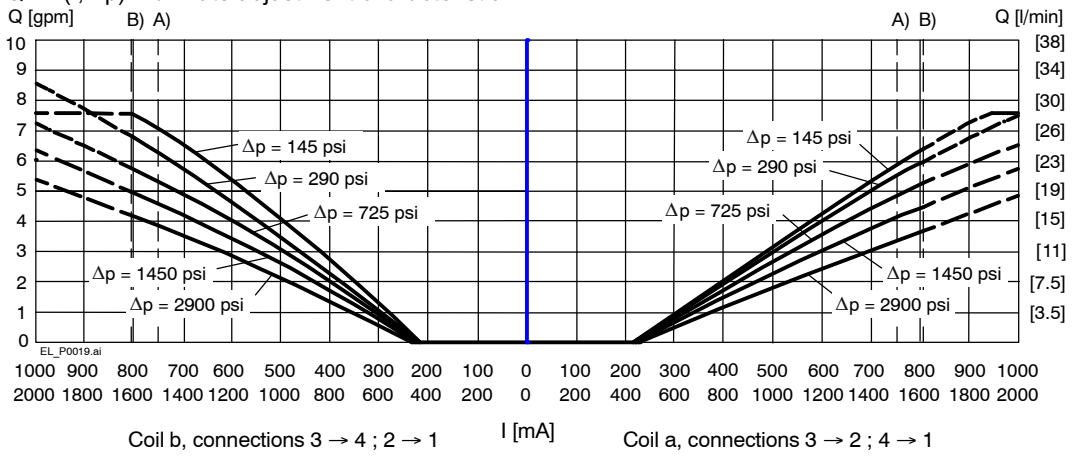
General characteristics	Description, value, unit
Designation	4/3 proportional directional valve
Design	sliding-spool design, direct acting, with solenoid operation
Mounting method	screw-in cartridge 7/8-14 UNF
Tightening torque	40…45 ft-lbs [54…61 Nm]
Size	size SAE 10, cavity type C1040
Weight	1.65 lbs [0.75 kg]
Mounting attitude	unrestricted (preferably vertical, coil down)
Ambient temperature range	-15 °F … +125 °F [-25 °C … +50 °C]

Hydraulic characteristics		Description, value, unit
Maximum operating pressure	- ports 2, 3, 4 - port 1	4000 psi [280 bar] 2000 psi [140 bar] higher pressure, please consult BUCHER
Maximum flow rate	- port 3 → 4 and 2 → 1 - port 3 → 2 and 4 → 1	7.0 gpm at Δp 140 psi [26 l/min at Δp 10 bar] 6.2 gpm at Δp 140 psi [24 l/min at Δp 10 bar] at 100% duty cycle
Leakage flow rate	(port to port)	15 inch^3 at 3000 psi [245 ml/min at 210 bar]
Hydraulic fluid		HL and HLP mineral oil to DIN 51 524; for other fluids, please contact BUCHER
Hydraulic fluid temperature range		-15 °F … +160 °F [-25 °C … +70 °C]
Viscosity range		15…380 mm^2/s (cSt), recommended 20...130 mm^2/s (cSt)
Minimum fluid cleanliness Cleanliness class to ISO 4406 : 1999		class 18/16/13

Electrical characteristics		Description, value, unit
Supply voltage		12 V DC, 24 V DC
Control current		12 V = 0…1400 mA, 24 V = 0…750 mA (100% duty cycle) 12 V = 0…1600 mA, 24 V = 0…880 mA (50% duty cycle)
Power consumption at max. control current		max. 19 W
Coil resistance R	- cold value at 20 °C - max. warm value	12 V = 5.8 Ω / 24 V = 20.9 Ω 12 V = 9.1 Ω / 24 V = 32.7 Ω
Recommended PWM frequency (dither)		200 Hz
Hysteresis with PWM		2…5 % I_N
Reversal error with PWM		2…5 % I_N
Sensitivity with PWM		< 1.5 % I_N
Reproducibility with PWM		< 3 % p_N
Relative duty cycle		100 % / 50 %
Protection class to ISO 20 653 / EN 60 529		IP 65 / IP 67 / IP 69K, see “Ordering code” (with appropriate mating connector and proper fitting and sealing)
Electrical connection		3-pin square plug to ISO 4400 / DIN 43 650 (standard) for other connectors, see “Ordering code”

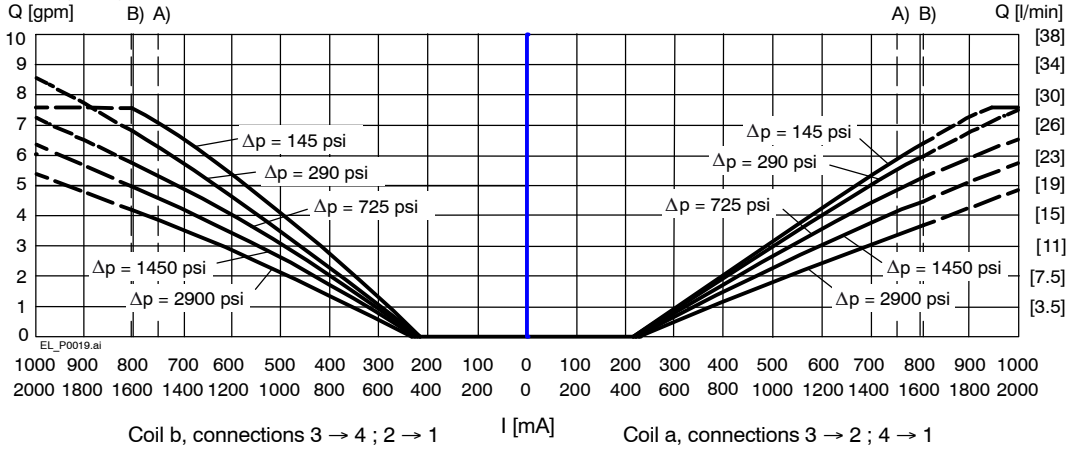
4 Performance graphs

Q = f (I; Δp) Flow rate adjustment characteristic 4M



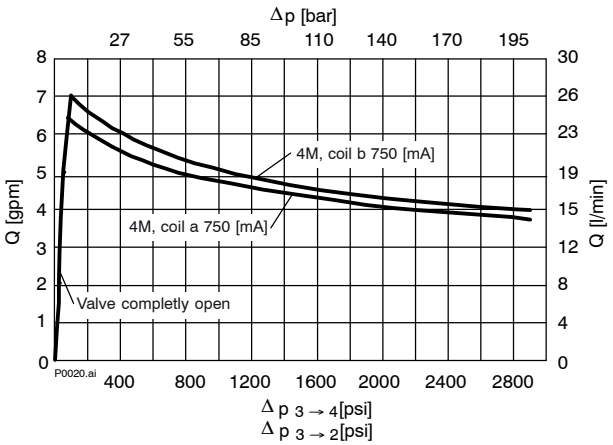
A) 100% duty cycle
B) 50% duty cycle
--- depending on coil temperature, solenoid may draw a voltage higher than the nominal voltage

Q = f (I; Δp) Flow rate adjustment characteristic 4L

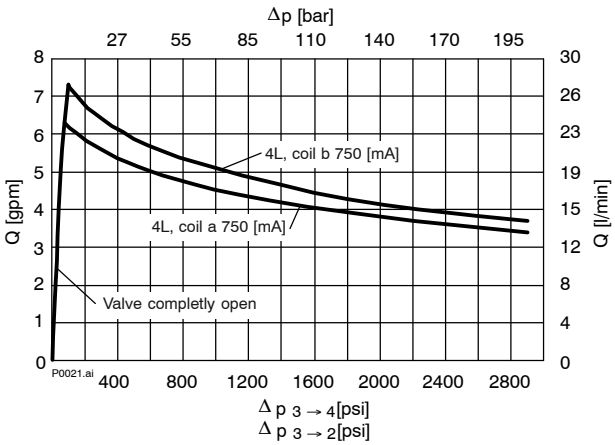


A) 100% duty cycle
B) 50% duty cycle
--- depending on coil temperature, solenoid may draw a voltage higher than the nominal voltage

Δp = f (Q) Pressure drop - Flow rate characteristic 4M



Δp = f (Q) Pressure drop - Flow rate characteristic 4L



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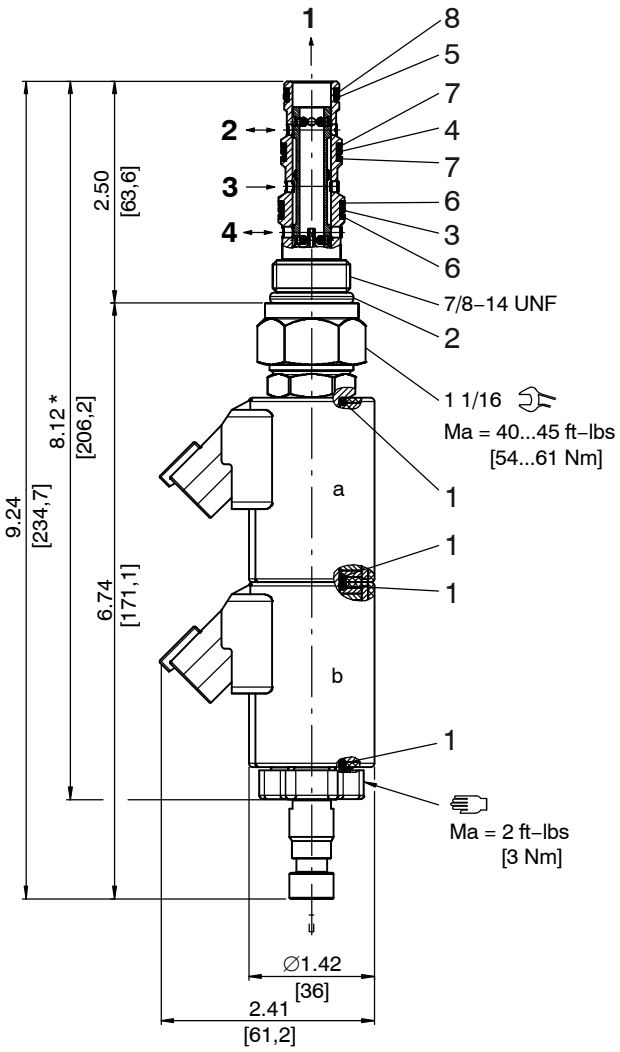
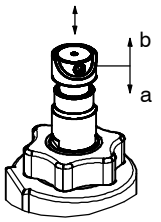
5 Dimensions & sectional view

4/3 proportional directional valve



* overall length without manual over-ride

1. Push button to unlatch manual over-ride



2. Push or pull on whole handle to shift valve to position a or b

Seal kit

Item	Qty.	Description
1	4	O-ring 16 x 2
2	1	O-ring no. 910 ∅ 0.755 x 0.097 [19,18 x 2,46]
3	1	O-ring no. 016 ∅ 0.614 x 0.070 [15,60 x 1,78]
4	1	O-ring no. 015 ∅ 0.551 x 0.070 [14,00 x 1,78]
5	1	O-ring no. 014 ∅ 0.489 x 0.070 [12,42 x 1,78]
6	2	Backup ring ∅ .634 x .052 x .047 [16,10 x 1,32 x 1,19]
7	2	Backup ring ∅ .572 x .052 x .047 [14,53 x 1,32 x 1,19]
8	1	Backup ring ∅ .510 x .052 x .047 [12,95 x 1,32 x 1,19]

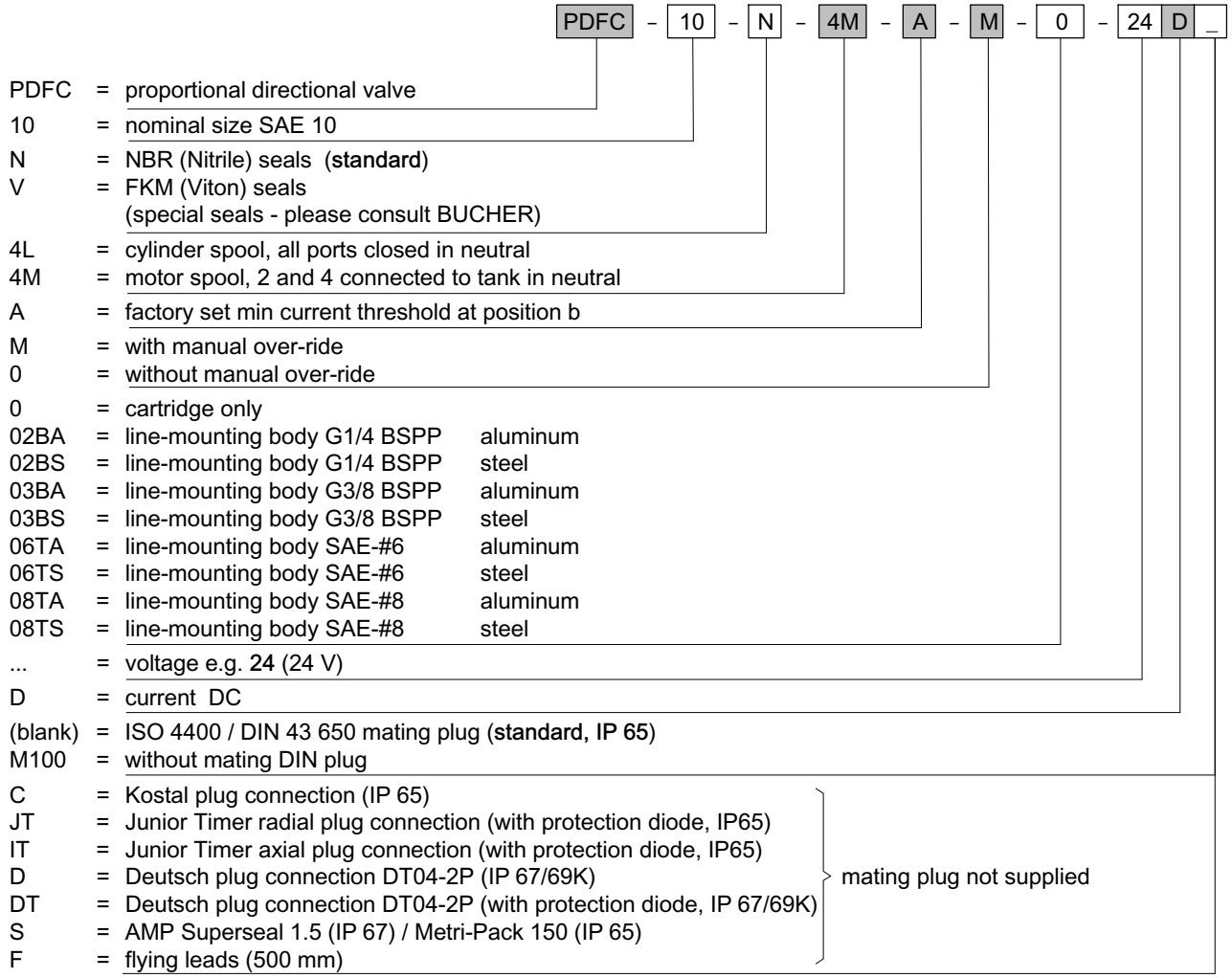
IMPORTANT!
Item no. 5207300112 = Seal kit NBR (Buna)
Item no. 5207300113 = Seal kit FKM (Viton)

6 Installation information

ATTENTION!
Only qualified personnel with mechanical skills may carry out any maintenance work. Generally, the only work that should ever be undertaken is to check, and possibly replace, the seals. When changing seals, oil or grease the new seals thoroughly before fitting them.

IMPORTANT!
When fitting the valves, use the specified tightening torque for the mounting bolts. No adjustments are necessary, since the cartridges are set in the factory.

7 Ordering code



8 Related data sheets

Reference	(Old no.)	Description
520-P-000050		The form-tool hire programme
520-P-000420	(0-042.0)	Cavity Type C1040
520-P-000421	(0-042.1)	Line-mounting body, 10 Series – 4-way

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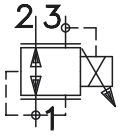
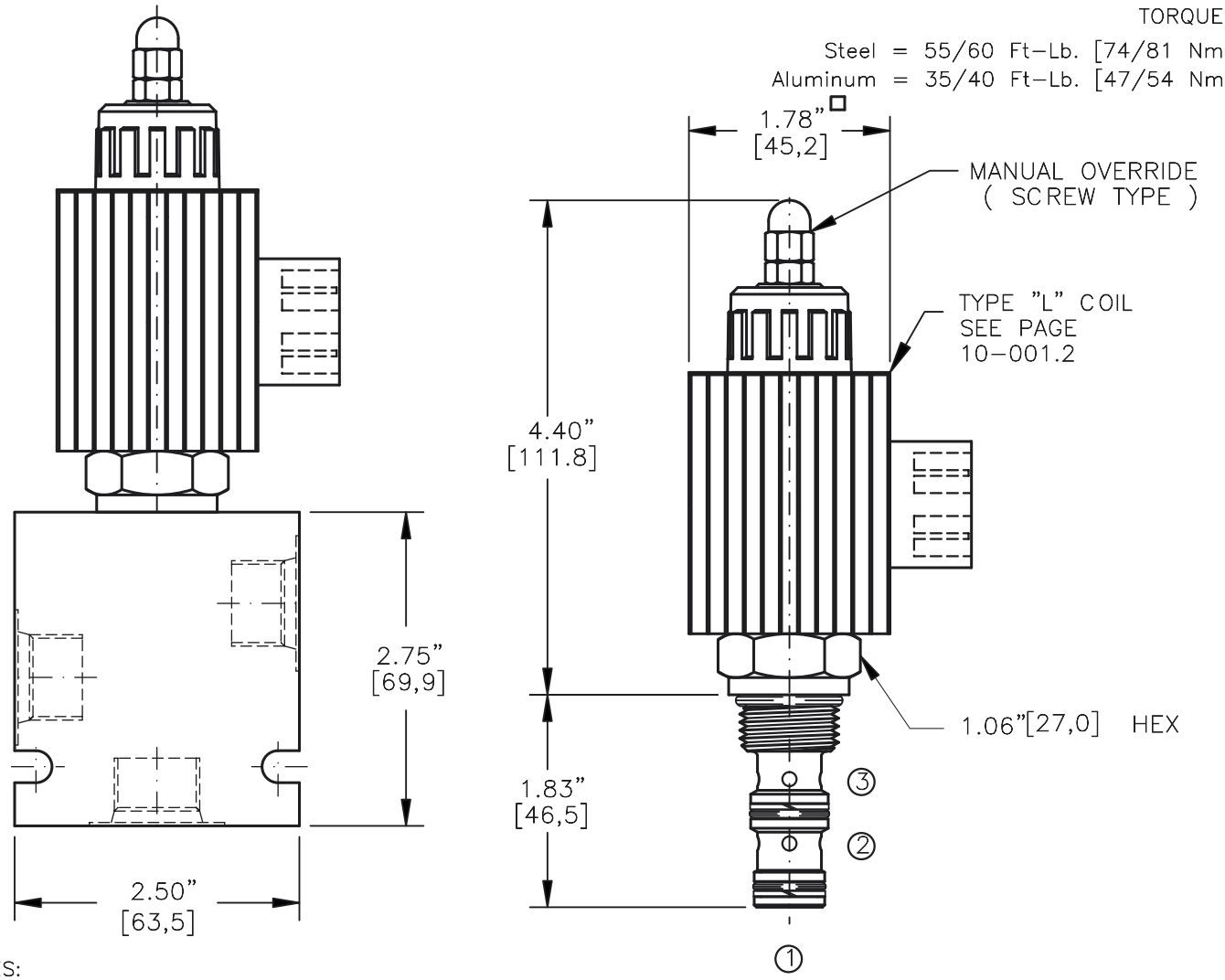
Classification: 430.300.-.305.310.310.300.300

BUCHER hydraulics

PROPORTIONAL PRESSURE REDUCING/ RELIEVING. DIRECT ACTING, SPOOL TYPE.



TORQUE:
Steel = 55/60 Ft-Lb. [74/81 Nm]
Aluminum = 35/40 Ft-Lb. [47/54 Nm]



NOTES:
1. FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-032.1
2. SOLENOIDS AVAILABLE WITH DIODES - CONSULT FACTORY.

EPRR-10-X-XX-X-X-XXX X

BASIC

SIZE
10 = 7/8"-14UNF

SEALS
N = BUNA "N"
V = VITON

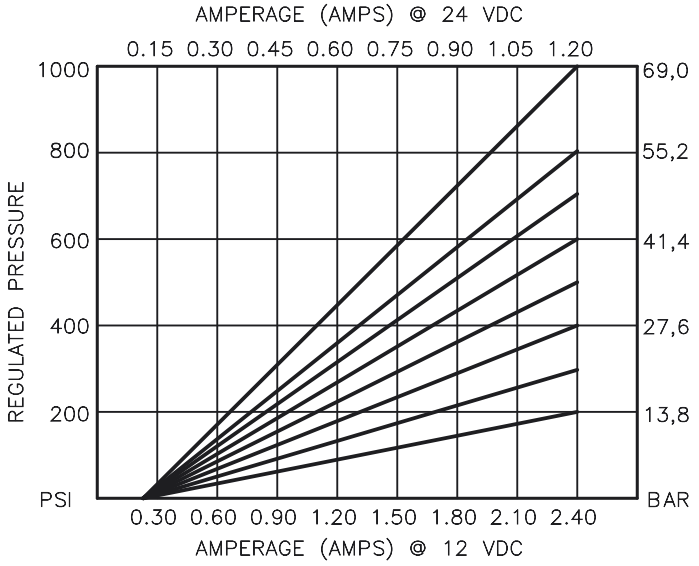
REGULATED PRESSURE
02 = 0 TO 200 PSI
03 = 0 TO 300 PSI
04 = 0 TO 400 PSI
05 = 0 TO 500 PSI
06 = 0 TO 600 PSI
07 = 0 TO 700 PSI
08 = 0 TO 800 PSI
10 = 0 TO 1000 PSI

PORTS = CARTRIDGE ONLY
0 = G 1/4" BSPP
02BX = G 3/8" BSPP
03BX = SAE - #6
06TX = SAE - #8
08TX "A" = ALUM. HOUSING
"S" = STEEL HOUSING

ADJUSTMENT OPTIONS
M = MANUAL OVERRIDE

VOLTAGE AMPS
12D = 12 VDC 3.00
24D = 24 VDC 1.50

TERMINALS
L =18GA. 24" LEADS
T =SPADE TERM.
B =BOLT TERM.
G =DIN43650
W =WEATHER-PACK
D =DEUTSCH-DT04-2P
M =METRI-PACK CONN.



BUCHER hydraulics

ELECTRO–HYDRAULIC, PROPORTIONAL, PRESSURE REDUCING/RELIEVING VALVE.

DESCRIPTION

This unit is a electro–hydraulic, proportional, screw in cartridge style, direct acting, spool type, pressure reducing/relieving flow pressure control valve.

OPERATIONS

When the coil is de–energized, this valve allows no flow or pressure from port 2 to 1 and port 1 is open to (tank) port 3.
When the coil is energized, the spool in this valve shifts and allows flow and pressure between ports 2 and 1 and blocks port 3 (tank).
When the coil is energized the armature moves a precision bias spring against the metering spool thus varying the pressure at port 1 (Reg.) proportional to the curent input. When the current is increased to the coil the pressure will increase and when decreased it will decrease.

IN THE EVENT OF POWER FAILURE THE VALVE WILL REDUCE REGULATED PRESSURE AT PORT 1 TO ZERO.

FEATURES AND BENEFITS

Continuous–duty, very low heat rise & waterproof solenoid coil.
Interchangeable solenoid coils & terminations options available.
Hardened precision fitted spool & sleeve provides reliable, long life.
Very efficient wet – armature solenoid core tube construction.
All external carbon steel parts are plated for longer life against the elements.
All cartridge valves are 100% functionally tested.
Industry common cavity.

BUCHER hydraulics

ELECTRO–HYDRAULIC, PROPORTIONAL, PRESSURE REDUCING/RELIEVING VALVE.

SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]
PROOF PRESSURE: 10,000 PSI [700 Bar]
REGULATED PRESSURE: 0 to 1,000 PSI [0 to 69,0 Bar] See performance chart
FLOW: 1.0 GPM (3.8 l/m) nominal
INTERNAL LEAKAGE: 10 cu.in/min [164 cc/m] @ 5,000 PSI [350 Bar]
VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.
5000 PSI [350 Bar] = Steel – Unplated.
OPERATING TEMPERATURE: –40° to +250° F. [–40° to +120° C.]
OPERATING MEDIA: All general purpose hydraulic fluids such as MIL–H–5606, SAE–#10, SAE–#20, etc.
RESPONSE: The most efficient method to control this valve is with current control and a 50 Hz dither.
POWER REQUIREMENTS: 12 VDC, Operating current 0.2 to 2.4 AMPS.
24 VDC, Operating current 0.1 to 1.2 AMPS.
SEAL KIT: SKN–1031 Buna "N"
SKV–1031 Viton
INSTALLATION: No restrictions.
WEIGHT: 1.95 lb [.88 kg] cartridge with coil only.
VALVE CAVITY: #C1030, See Page 0–032.0.

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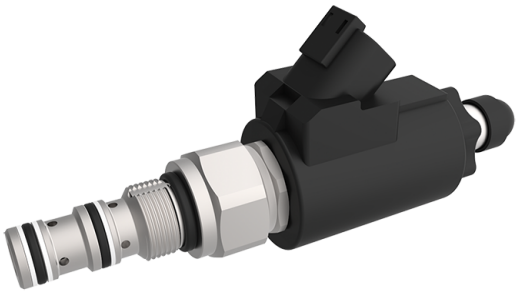
Prop. Pressure-Reducing/Relieving Cartridge, Size SAE 08

Q_{max} = 7.0 gpm [26 l/min], p_{max} = 3400 psi [240 bar]
Seated pilot, spool-type main stage
Series EPRT-08…

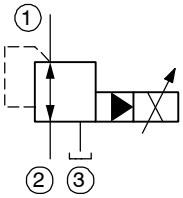


- Compact construction for cavity types: C0830 and AM - 3/4-16 UNF
- Operated by a proportional solenoid
- 3 pressure ranges available
- Full-flow secondary pressure relief
- Internal pilot-oil drain
- Pilot stage protected from dirt by gap filter
- Excellent stability over the whole pressure and flow range
- All exposed parts with zinc-nickel plating
- High pressure wet-armature solenoids
- The slip-on coil can be rotated, and it can be replaced without opening the hydraulic envelope
- Various plug-connector systems and voltages are available
- Can be fitted in a line-mounting body

1 Description

Series EPRT-08… proportional pressure-reducing / relieving valves are size SAE 08 / NG 5, high performance screw-in cartridges with a 3/4-16 UNF mounting thread. Using the leak-free seat-type pilot cartridge, the secondary pressure in port 1 is dependent on the electrical control signal and it can be continuously varied and set at any desired level. In control mode, the connection 2 → 1 opens until the pressure in port 1 reaches the preset level. If the pressure rises above the preset level, the control spool opens the 1 → 3 connection until balance is attained. These pressure-reducing / relieving cartridges function as full-flow pressure relief valves from port 1 → 3 as soon as the reduced pressure rises above the valve pressure setting. A high degree of functional stability is reached even if the back pressure in the tank line fluctuates. Three pressure ranges are available in order to obtain precise pressure settings over the whole pressure range. These pressure-reducing / relieving cartridges are predominantly used in mobile and industrial applications for reducing a system pressure. All external parts of the cartridge are zinc-nickel plated to DIN 50 979 and are thus suitable for use in the harshest operating environments. The slip-on coils can be replaced without opening the hydraulic envelope and can be positioned at any angle through 360°. If you intend to manufacture your own cavities or are designing a line-mounting installation, please refer to the section “Related data sheets”.

2 Symbol



3 Technical data

General characteristics	Description, value, unit
Designation	proportional pressure-reducing / relieving cartridge
Design	seated pilot, spool-type main stage
Mounting method	screw-in cartridge 3/4-16 UNF
Tightening torque	30 ft-lbs ± 10 % [40 Nm ± 10 %]

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General characteristics	Description, value, unit
Size	size SAE 08 for cavity type C0830 NG 5 for cavity type AM
Weight	0.93 lbs [0.42 kg]
Mounting attitude	unrestricted (preferably vertical, coil down)
Ambient temperature range	-13 °F … +122 °F [-25 °C … +50 °C]

Hydraulic characteristics		Description, value, unit
Maximum operating pressure	- ports 1, 2 - port 3	3400 psi [240 bar] 3000 psi [210 bar] 1)
Maximum flow rate		7 gpm [26 l/min]
Nominal pressure ranges		1500, 2500, 3000 psi [100, 175, 210 bar] For further pressure ranges, please contact BUCHER
Pilot-oil consumption		0.05… 0.08 gpm [0,2 … 0,3 l/min]
Flow direction		2 → 1 pressure reducing 1 → 3 pressure relieving
Hydraulic fluid		HL and HLP mineral oil to DIN 51 524; for other fluids, please contact BUCHER
Hydraulic fluid temperature range		-13 °F … +158 °F [-25 °C … +70 °C]
Viscosity range		15…380 mm^2/s (cSt), recommended 20...130 mm^2/s (cSt)
Minimum fluid cleanliness Cleanliness class to ISO 4406 : 1999		class 18/16/13

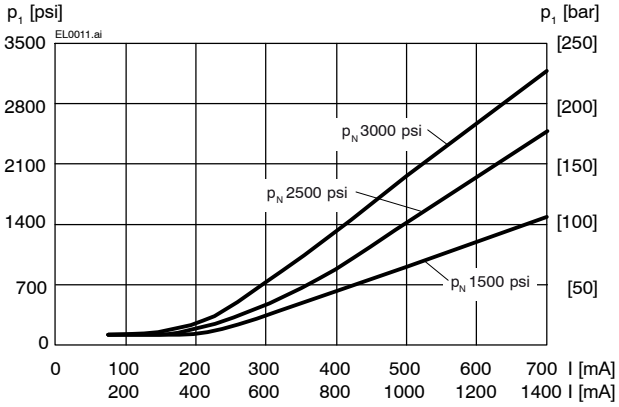
ATTENTION!
1) To prevent any pressure surges, port 3 must be routed to tank with the least possible back-pressure.

Electrical characteristics		Description, value, unit
Supply voltage		12 V DC, 24 V DC
Supply voltage tolerance		± 10 %
Control current		12 V = 0…1400 mA, 24 V = 0…750 mA
Power consumption at max. control current		max. 19 W
Coil resistance R	- cold value at 20 °C - max. warm value	12 V = 5.8 Ω / 24 V = 21 Ω 12 V = 8.6 Ω / 24 V = 32 Ω
Recommended PWM frequency (dither)		200 Hz
Hysteresis with PWM		2…4 % I_N
Reversal error with PWM		1…3 % I_N
Sensitivity with PWM		≤ 1 % I_N
Reproducibility with PWM		< 2 % p_N
Switching time		*Pressure-reducing function*: 38 … 45 ms (solenoid ON) 8 … 12 ms (solenoid OFF) *Pressure-relief function:* 41 … 51 ms (solenoid ON) 6 … 12 ms (solenoid OFF) The switching times are strongly influenced by flow rate, pressure, viscosity and the dwell period under pressure.

Electrical characteristics	Description, value, unit
Relative duty cycle	100 %
Protection class to ISO 20 653 / EN 60 529	IP 65 / IP 67 / IP 69K, see “Ordering code” (with appropriate mating connector and proper fitting and sealing)
Electrical connection	3-pin square plug to ISO 4400 / DIN 43 650 (standard) for other connectors, see “Ordering code”

4 Performance graphs measured with oil viscosity 33 mm^2/s (cSt)

p = f (I) Pressure adjustment characteristic



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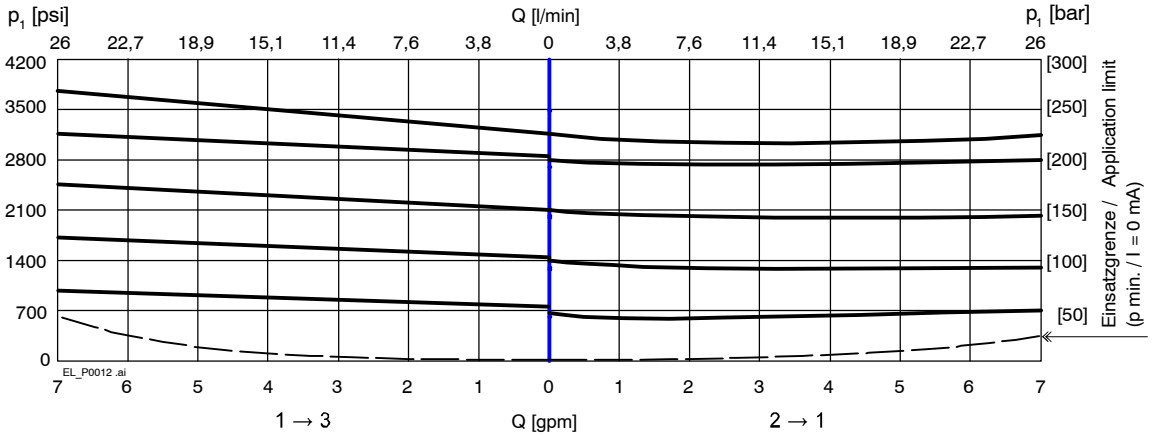
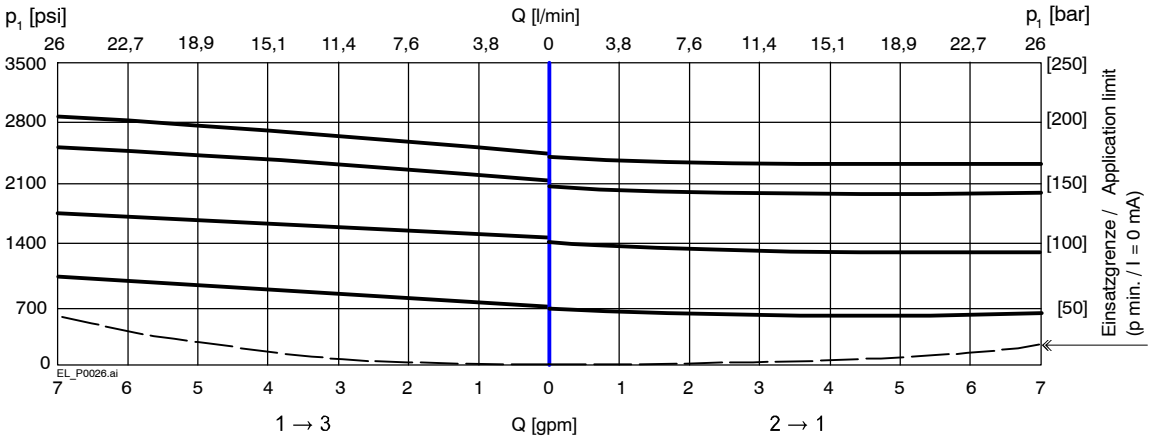
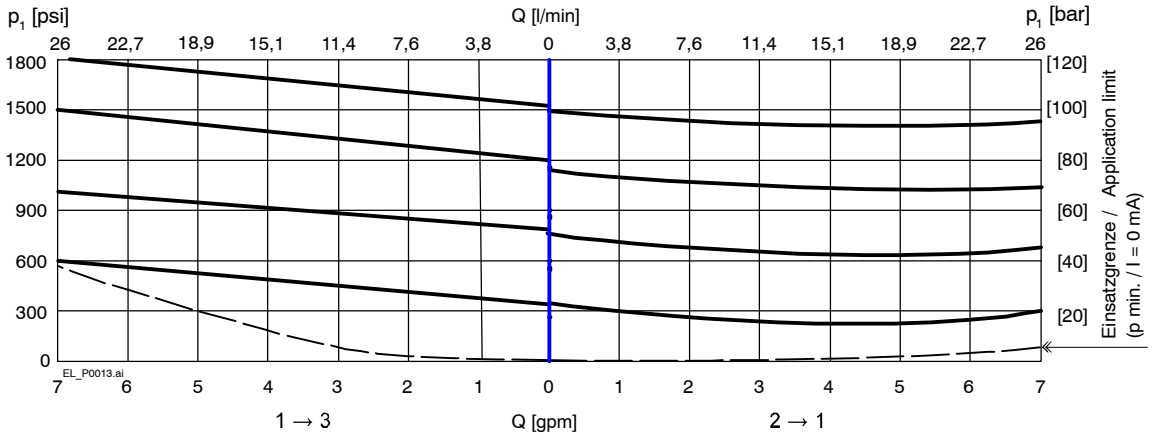
p = f (Q) Pressure - Flow rate characteristic [p_N = 3000 psi]



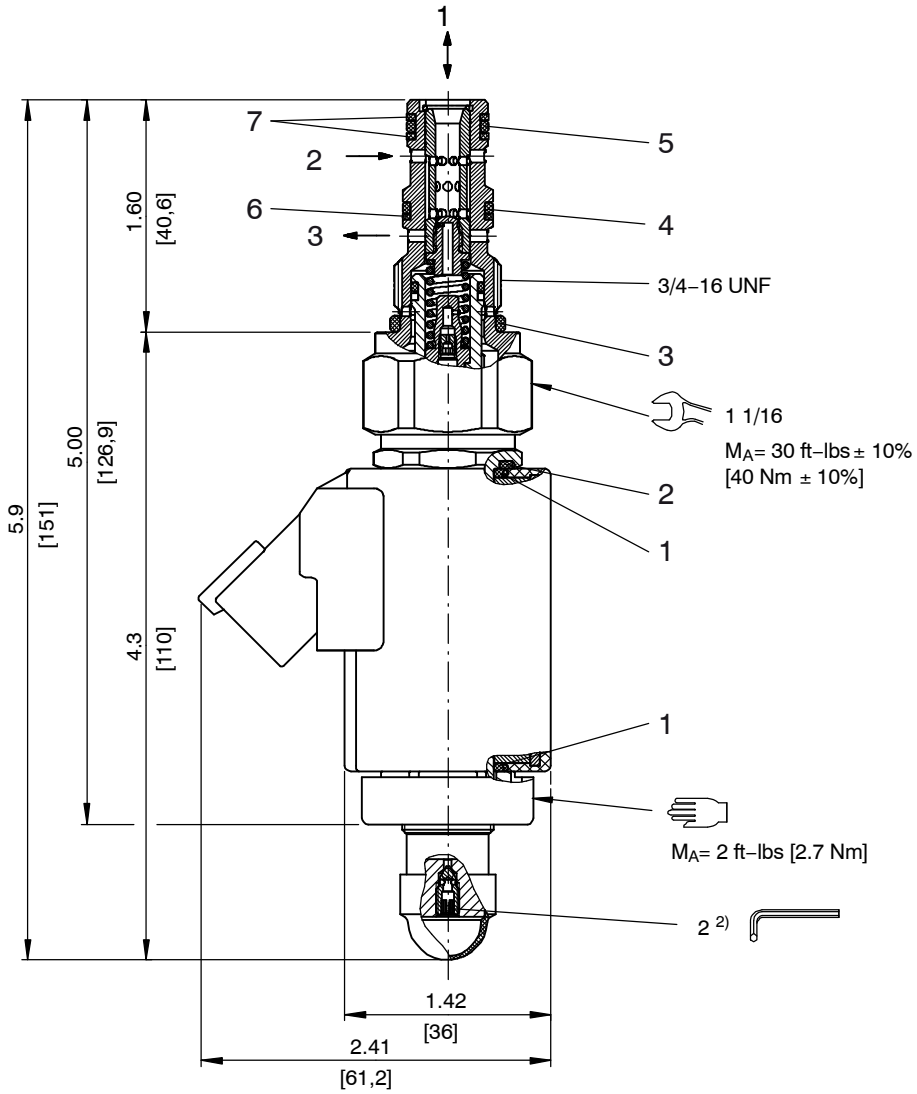
p = f (Q) Pressure - Flow rate characteristic [p_N = 2500 psi]



p = f (Q) Pressure - Flow rate characteristic [p_N = 1500 psi]



5 Dimensions & sectional view



6 Installation information

IMPORTANT!
To achieve the proportional pressure-reducing cartridge's maximum performance rating, fit the solenoid coil as shown (with the plug pins at the bottom). When fitting the cartridges, note the mounting attitude (preferably vertical, with coil down → automatic air bleed) and use the specified tightening torque. No adjustments are necessary, since the cartridges are set in the factory.

ATTENTION!
Only qualified personnel with mechanical skills may carry out any maintenance work. Generally, the only work that should ever be undertaken is to check, and possibly replace, the seals. When changing seals, oil or grease the new seals thoroughly before fitting them.

Seal kit NBR no. SKN-0832-12-S1 [1)]

Item	Qty.	Description				
1	2	O-ring		∅ 16,00 x 2,00	FKM	mm
2	1	O-ring		∅ 18,00 x 2,00	FKM	mm
3	1	O-ring	no. 908	∅ 0,644 x 0,087	N70	Inch
4	1	O-ring	no. 014	∅ 0,489 x 0,070	N70	Inch
5	2	O-ring	no. 013	∅ 0,426 x 0,070	N70	Inch
6	1	Backup ring FI0751		∅ 0,421 x 0,057 x 0,039		Inch
7	2	Backup ring FI0751		∅ 0,370 x 0,057 x 0,039		Inch

IMPORTANT!

1) Seal kit with FKM (Viton) seals, no. SKV-0832-12-S1

2) vent screw to vent valve when mounted coil up screw torqued hand tight.

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7 Ordering code

Ex. EPRT - 08 - N - 30 - 0 - 24 D _

EPRT	=	prop. pressure-reducing / relieving valve, two stage	
08	=	nominal size SAE 08	
N	=	NBR (Nitrile) seals (**standard**)	
V	=	FKM (Viton) seals (special seals - please contact BUCHER)	
30	=	Pressure option 3000 psi	
25	=	Pressure option 2500 psi	
15	=	Pressure option 1500 psi	
0	=	cartridge only	
02BA	=	line-mounting body G1/4 BSPP	aluminum
02BS	=	line-mounting body G1/4 BSPP	steel
03BA	=	line-mounting body G3/8 BSPP	aluminum
03BS	=	line-mounting body G3/8 BSPP	steel
06TA	=	line-mounting body SAE-6	aluminum
06TS	=	line-mounting body SAE-6	steel
08TA	=	line-mounting body SAE-8	aluminum
08TS	=	line-mounting body SAE-8	steel
...	=	voltage e.g. **24** (24 V)	
D	=	current DC	
(blank)	=	ISO 4400 / DIN 43 650 mating plug (**standard, IP 65**)	
M100	=	without mating DIN plug	
C	=	Kostal plug connection (IP 65)	mating plug not supplied
JT	=	Junior Timer radial plug connection (with protection diode, IP65)	
IT	=	Junior Timer axial plug connection (with protection diode, IP65)	
D	=	Deutsch plug connection DT04-2P (IP 67/69K)	
DT	=	Deutsch plug connection DT04-2P (with protection diode, IP 67/69K)	
S	=	AMP Superseal 1.5 (IP 67) / Metri-Pack 150 (IP 65)	
F	=	flying leads (500 mm)	

8 Related data sheets

Reference	(Old no.)	Description
520-P-000050		The form-tool loan program
520-P-000310	(0-031.0)	Cavity type C0830
400-P-040181		Cavity type AM
400-P-120110	(W-2.141)	Coils for screw-in cartridge valves
400-P-510101		Amplifier unit for proportional valves (1-channel) PBS - 3A
400-P-511101	(P-3)	Amplifier card, 1-channel for valves with one solenoid, type SAN-535…
520-P-000311	(0-031.1)	Line-mounting body, 8 Series -3-way
400-P-720111	(G-4.20)	Line-mounting body, type GAMA (G 3/8")

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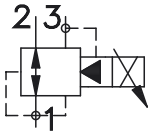
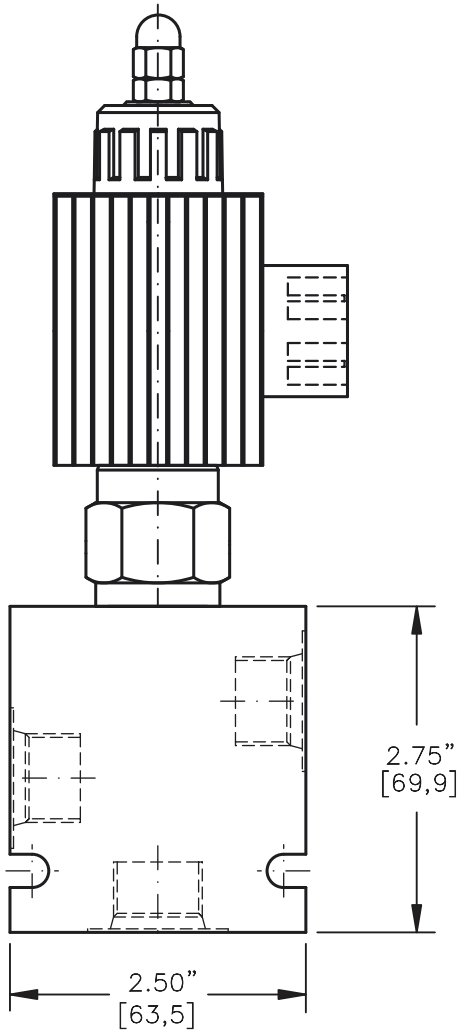
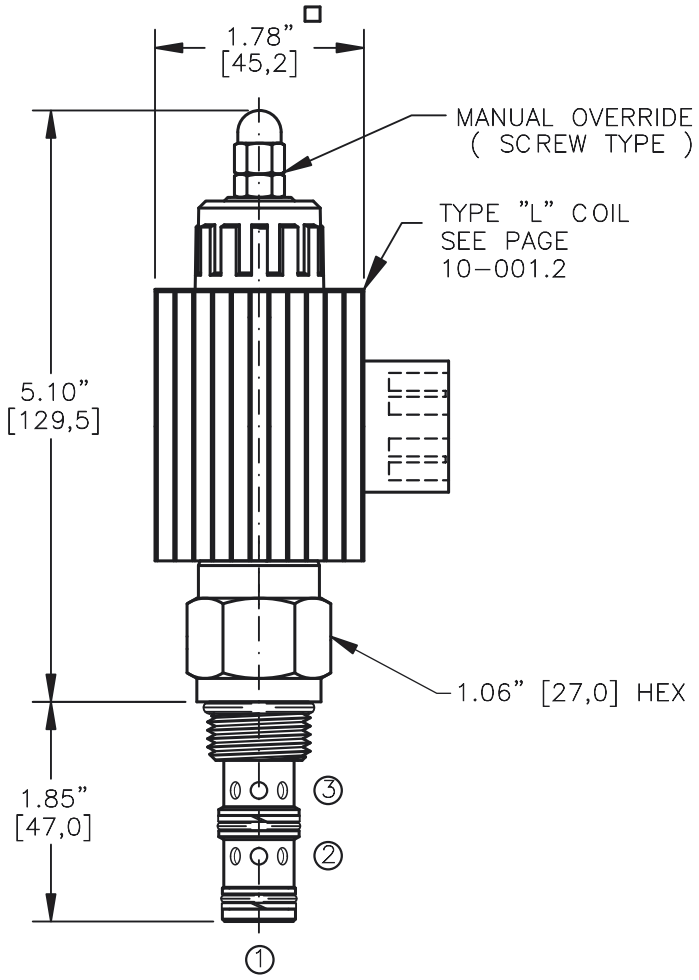
Classification: 430.300.305.305.320.310

BUCHER hydraulics

PROPORTIONAL PRESSURE REDUCING/ RELIEVING. PILOT OPERATED, SLIDING SPOOL







TORQUE:

Steel = 55/60 Ft-Lb. [74/81 Nm]
Aluminum = 35/40 Ft-Lb. [47/54 Nm]

EPRS-10-X-XX-X-X-XXX X

BASIC

SIZE
10 = 7/8"-14UNF

SEALS
N = BUNA "N"
V = VITON

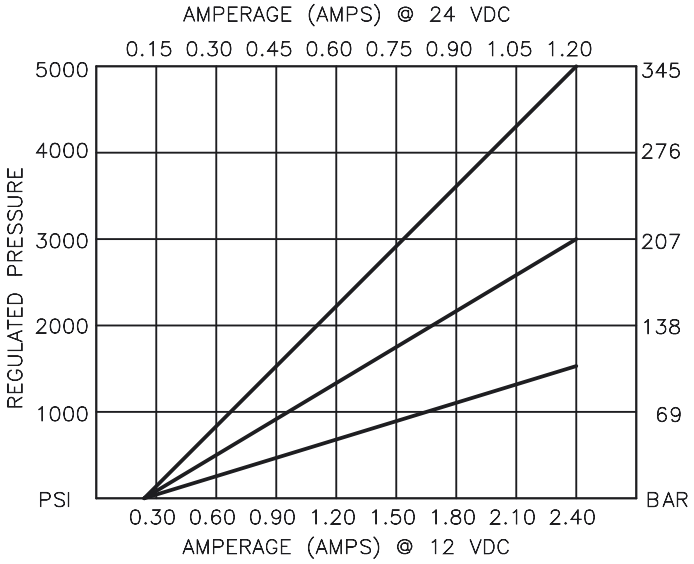
REGULATED PRESSURE
15 = 50 TO 1500 PSI
30 = 50 TO 3000 PSI
50 = 50 TO 5000 PSI

PORTS = CARTRIDGE ONLY
0 = G 1/4" BSPP
02BX = G 3/8" BSPP
06BX = SAE - #6
06TX = SAE - #8
08TX "A" = ALUM. HOUSING
"S" = STEEL HOUSING

ADJUSTMENT OPTIONS
M = MANUAL OVERRIDE

VOLTAGE AMPS
12D = 12 VDC 3.00
24D = 24 VDC 1.50

TERMINALS
L =18GA. 24" LEADS
T =SPADE TERM.
B =BOLT TERM.
G =DIN43650
W =WEATHER-PACK
D =DEUTSCH-DT04-2P
M =METRI-PACK CONN.



BUCHER hydraulics

ELECTRO–HYDRAULIC, PROPORTIONAL, PRESSURE REDUCING/RELIEVING VALVE.

DESCRIPTION

This unit is a electro–hydraulic, proportional, screw in cartridge style, pilot operated, sliding spool type, high pressure reducing and relieving control valve.

OPERATIONS

When the coil is de–energized, this valve will allow flow from port 2 to port 1 until pressure in port 1 exceeds the spring bias then the spool will shift and block flow from port 2 to port 1 relieving pressure to port 3. When the coil is energized, the armature moves a precision bias spring against the pilot orifice thus varying the pressure at port 1 (reg.) proportional to the current input regardless of the pressure at port 2. Excess pressure at port 1 is relieved to port 3. When the coil current is increased the pressure will increase and when decreased it will decrease. IN THE EVENT OF POWER FAILURE THE VALVE WILL REDUCE REGULATED PRESSURE AT PORT 1 TO 50 PSI.

FEATURES AND BENEFITS

Continuous–duty, very low heat rise & waterproof solenoid coil.
Pressure in tank port (3) will add to the bias spring setting, and is limited to 2000 PSI.
Interchangeable solenoid coils & terminations options available.
Hardened precision fitted spool & sleeve provides reliable, long life.
A unique self aligning (floating) cage provides very low hysteresis and reliable operation.
Very efficient wet – armature solenoid core tube construction.
All external carbon steel parts are plated for longer life against the elements.
All cartridge valves are 100% functionally tested.
Industry common cavity.

BUCHER hydraulics

ELECTRO–HYDRAULIC, PROPORTIONAL, PRESSURE REDUCING/RELIEVING VALVE.

SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]
PROOF PRESSURE: 10,000 PSI [700 Bar]
REGULATED PRESSURE: 50 to 5000 PSI [3,5 to 345] See performance chart.
FLOW: 12.0 GPM [46,0 L/M] nominal.
INTERNAL PILOT FLOW: 20 cu.in/min [0,50 l/m] @ 5,000 PSI [350 Bar]
VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.
5000 PSI [350 Bar] = Steel – Unplated.
OPERATING TEMPERATURE: –40° to +250° F. [–40° to +120° C.]
OPERATING MEDIA: All general purpose hydraulic fluids such as MIL–H–5606, SAE–#10, SAE–#20, etc.
RESPONSE: The most efficient method to control this valve is with current control and a 50 Hz dither.
POWER REQUIREMENTS: 12 VDC, Operating current 0.2 to 2.4 AMPS.
24 VDC, Operating current 0.1 to 1.2 AMPS.
SEAL KIT: SKN–1031 Buna "N"
SKV–1031 Viton
INSTALLATION: No restrictions.
WEIGHT: 1.95 lb [.88 kg] cartridge with coil only.
VALVE CAVITY: #C1030, See Page 0–032.0.

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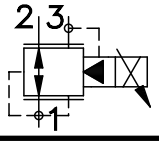
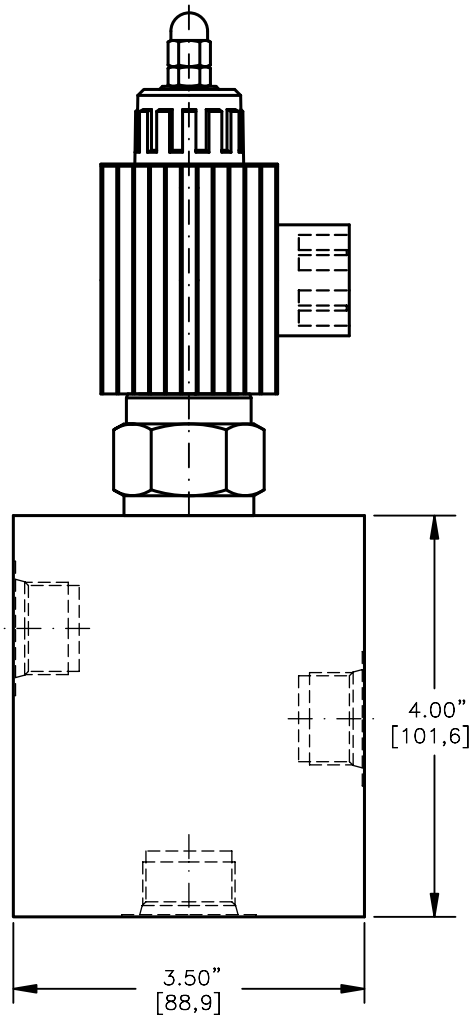
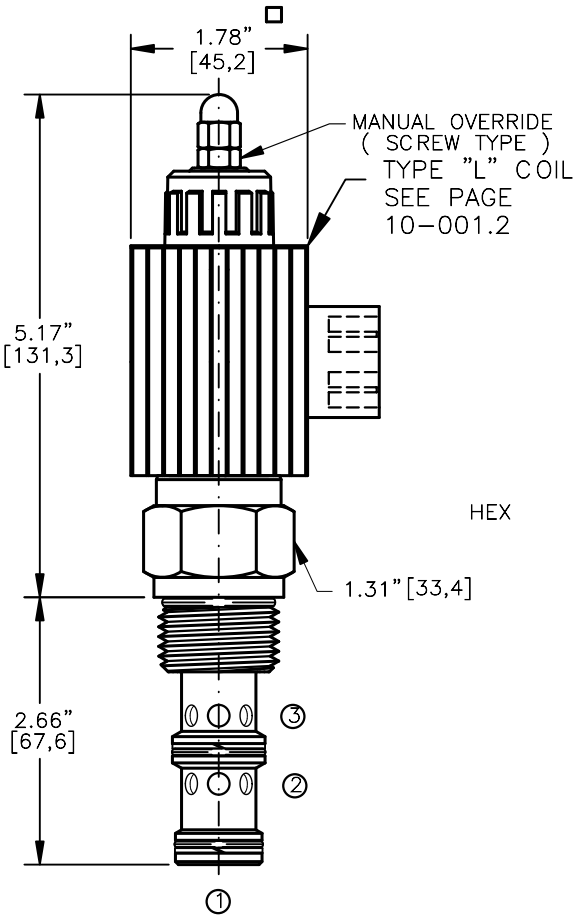
BUCHER hydraulics

PROPORTIONAL PRESSURE REDUCING/ RELIEVING PILOT OPERATED, SLIDING SPOOL



TORQUE:
Steel = 70/75 Ft-Lb. [95/102 Nm]
Aluminum = 55/60 Ft-Lb. [74/81 Nm]





NOTES:
1. FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-033.1
2. SOLENOIDS AVAILABLE WITH DIODES - CONSULT FACTORY.

EPRS-12-X-XX-X-X-XXX X

BASIC

SIZE
12 = 1.062"-12UNF

SEALS
N = BUNA "N"
V = VITON

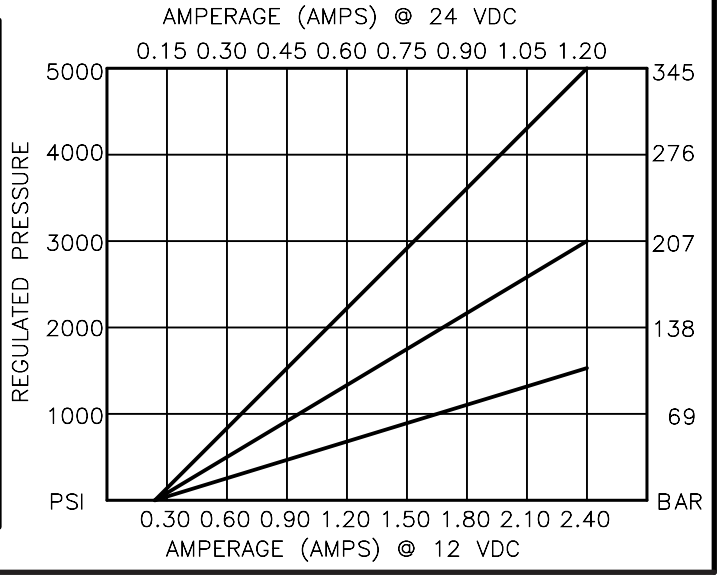
REGULATED PRESSURE
15 = 50 TO 1500 PSI
30 = 50 TO 3000 PSI
50 = 50 TO 5000 PSI

PORTS
0 = CARTRIDGE
4BX = G 1/2" BSPP
6BX = G 3/4" BSPP
10TX = SAE - #10
12TX = SAE - #12
"A" - ALUM. HOUSING
"S" - STEEL HOUSING

ADJUSTMENT OPTIONS
M = MANUAL OVERRIDE

VOLTAGE AMPS
12D = 12 VDC 3.00
24D = 24 VDC 1.50

TERMINALS
L = 18GA. 24" LEADS
T = SPADE TERM.
B = BOLT TERM.
G = DIN43650
W = WEATHER-PACK
D = DEUTSCH-DT04-2P
M = METRI-PACK CONN.



BUCHER hydraulics

ELECTRO–HYDRAULIC, PROPORTIONAL, PRESSURE REDUCING/RELIEVING VALVE.

DESCRIPTION

This unit is a electro–hydraulic, proportional, screw in cartridge style, pilot operated, sliding spool type, high pressure reducing and relieving control valve.

OPERATIONS

When the coil is de–energized, this valve will allow flow from port 2 to port 1 until pressure in port 1 exceeds the spring bias then the spool will shift and block flow from port 2 to port 1 relieving pressure to port 3. When the coil is energized, the armature moves a precision bias spring against the pilot orifice thus varying the pressure at port 1 (reg.) proportional to the current input regardless of the pressure at port 2. Excess pressure at port 1 is relieved to port 3. When the coil current is increased the pressure will increase and when decreased it will decrease. IN THE EVENT OF POWER FAILURE THE VALVE WILL REDUCE REGULATED PRESSURE AT PORT 1 TO 50 PSI.

FEATURES AND BENEFITS

Continuous–duty, very low heat rise & waterproof solenoid coil.
Pressure in tank port (3) will add to the bias spring setting, and is limited to 2000 PSI.
Interchangeable solenoid coils & terminations options available.
Hardened precision fitted spool & sleeve provides reliable, long life.
A unique self aligning (floating) cage provides very low hysteresis and reliable operation.
Very efficient wet–armature solenoid core tube construction.
All external carbon steel parts are plated for longer life against the elements.
All cartridge valves are 100% functionally tested.

BUCHER hydraulics

ELECTRO–HYDRAULIC, PROPORTIONAL, PRESSURE REDUCING/RELIEVING VALVE.

SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]
PROOF PRESSURE: 10,000 PSI [700 Bar]
REGULATED PRESSURE: 50 to 5000 PSI [3,5 to 345] See performance chart.
FLOW: 24.0 GPM [91,0 L/M] nominal.
INTERNAL PILOT FLOW: 60 cu.in/min [1,0 l/m] @ 5,000 PSI [350 Bar]
VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.
5000 PSI [350 Bar] = Steel – Unplated.
OPERATING TEMPERATURE: –40° to +250° F. [–40° to +120° C.]
OPERATING MEDIA: All general purpose hydraulic fluids such as MIL–H–5606, SAE–#10, SAE–#20, etc.
RESPONSE: The most efficient method to control this valve is with current control and a 50 Hz dither.
POWER REQUIREMENTS: 12 VDC, Operating current 0.2 to 2.4 AMPS.
24 VDC, Operating current 0.1 to 1.2 AMPS.
SEAL KIT: SKN–1231 Buna "N"
SKV–1231 Viton
INSTALLATION: No restrictions.
WEIGHT: 2.3 lb [1,2 kg] cartridge with coil only.
VALVE CAVITY: #C1230, See Page 0–033.0.

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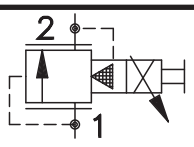
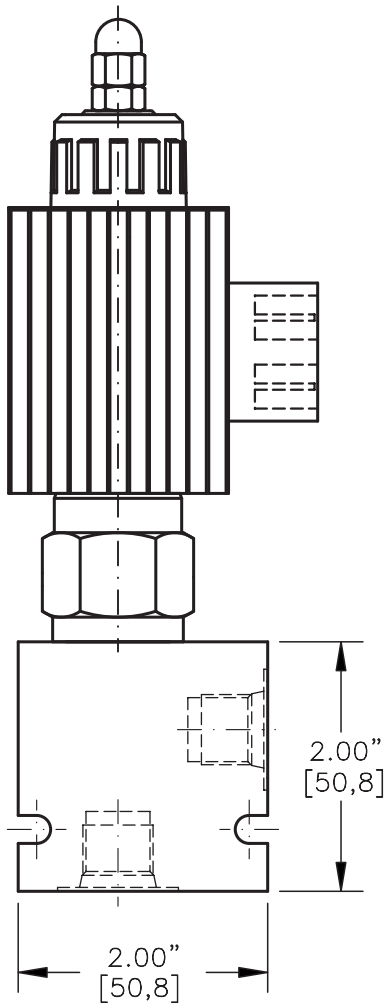
BUCHER hydraulics

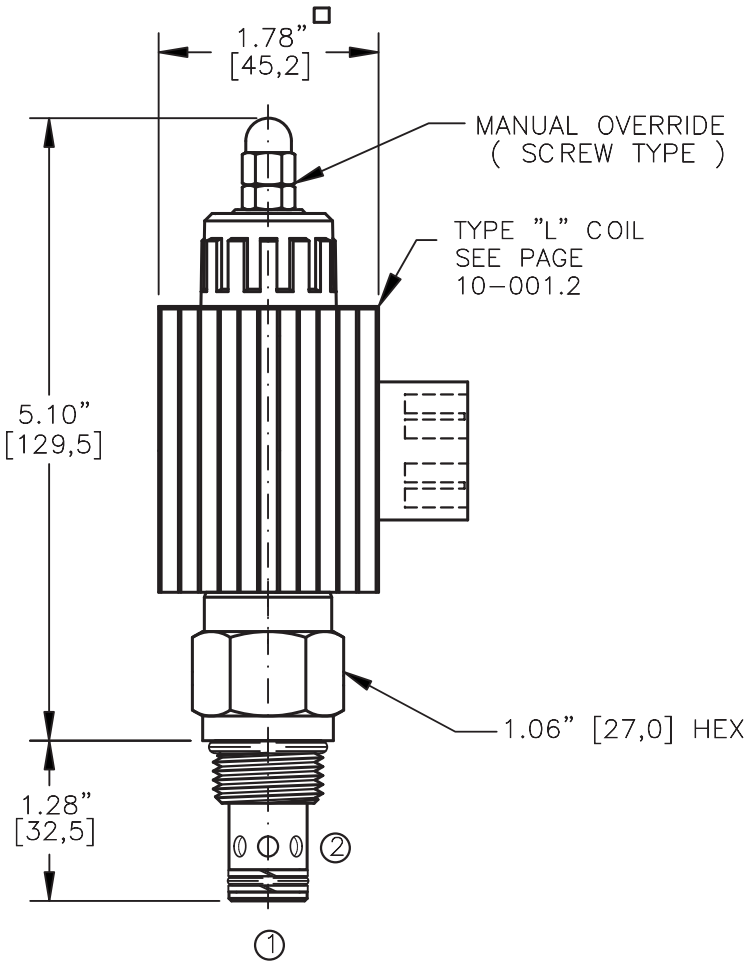
PROPORTIONAL PRESSURE RELIEF VALVE. PILOT OPERATED, SLIDING SPOOL TYPE.



Pat.#5,546,980

TORQUE:
Steel = 55/60 Ft–Lb. [74/81 Nm]
Aluminum = 35/40 Ft–Lb. [47/54 Nm]





NOTES:
1. FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0–012.1
2. SOLENOIDS AVAILABLE WITH DIODES – CONSULT FACTORY.

ERVP–10–X–XX–X–X–XXX X

BASIC

SIZE
10 = 7/8"–14UNF

SEALS
N = BUNA "N"
V = VITON

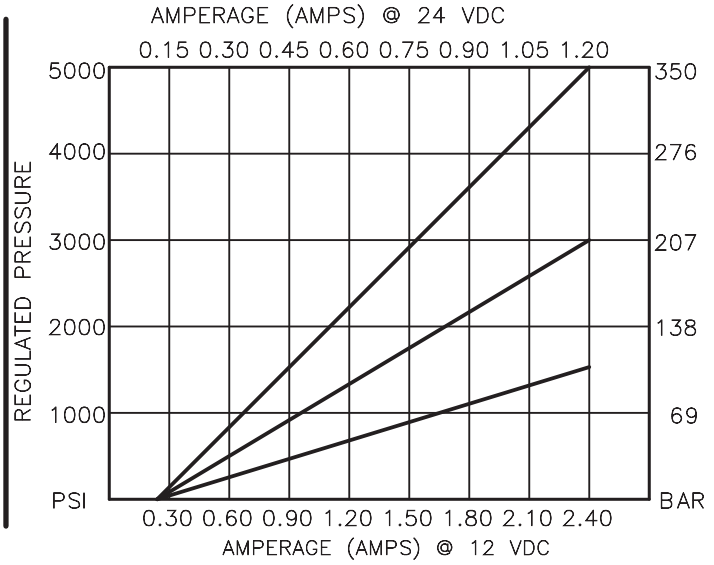
REGULATED PRESSURE
15 = 50 TO 1500 PSI
30 = 50 TO 3000 PSI
50 = 50 TO 5000 PSI

PORTS = CARTRIDGE ONLY
0 = G 1/4" BSPP
02BX = G 3/8" BSPP
06BX = SAE – #6
06TX = SAE – #8
08TX "A" = ALUM. HOUSING
"S" = STEEL HOUSING

ADJUSTMENT OPTIONS
M = MANUAL OVERRIDE

VOLTAGE AMPS
12D = 12 VDC 3.00
24D = 24 VDC 1.50

TERMINALS
L = 18GA. 24" LEADS
T = SPADE TERM.
B = BOLT TERM.
G = DIN43650
W = WEATHER–PACK
D = DEUTSCH–DT04–2P
M = METRI–PACK CONN.



BUCHER hydraulics

ELECTRO–HYDRAULIC, PROPORTIONAL, PRESSURE RELIEF VALVE.

DESCRIPTION

This unit is a electro–hydraulic, proportional, screw in cartridge style, pilot operated, sliding spool type, high pressure relief valve.

OPERATIONS

When the coil is de–energized, this valve allows flow and pressure from port 1 to port 2 if pressure exceeds the spring bias (50 psi). When the coil is energized the armature moves a precision bias spring against the pilot orifice thus varying the pressure setting at port 1 proportional to the current input. When the current is increased to the coil the relief pressure will increase and when decreased it will decrease. IN THE EVENT OF POWER FAILURE THE VALVE RELIEF PRESSURE SETTING AT PORT 1 WILL BE THE SPRING BIAS.

FEATURES AND BENEFITS

Continuous–duty, very low heat rise & waterproof solenoid coil.
Pressure in tank port (2) will add to the bias spring setting, and is limited to 2000 PSI.
Interchangeable solenoid coils & terminations options available.
Hardened precision fitted spool & sleeve provides reliable, long life.
A unique self aligning (floating) cage provides very low hysteresis and reliable operation.
Very efficient wet – armature solenoid core tube construction.
All external carbon steel parts are plated for longer life against the elements.
All cartridge valves are 100% functionally tested.
Industry common cavity.

BUCHER hydraulics

ELECTRO–HYDRAULIC, PROPORTIONAL, PRESSURE RELIEF VALVE.

SPECIFICATIONS

OPERATING PRESSURE: 5000 PSI [350 Bar]
PROOF PRESSURE: 10,000 PSI [700 Bar]
REGULATED PRESSURE: 50 to 5000 PSI [3,5 to 345] See performance chart.
FLOW: 25.0 GPM [95,0 L/M] nominal.
INTERNAL PILOT FLOW: 60 cu.in/min [1,0 l/m] @ 3000 PSI [210 Bar]
VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.
5000 PSI [350 Bar] = Steel – Unplated.
OPERATING TEMPERATURE: –40° to +250° F. [–40° to +120° C.]
OPERATING MEDIA: All general purpose hydraulic fluids such as MIL–H–5606, SAE–#10, SAE–#20, etc.
RESPONSE: The most efficient method to control this valve is with current control and a 50 Hz dither.
POWER REQUIREMENTS: 12 VDC, Operating current 0.2 to 2.4 AMPS.
24 VDC, Operating current 0.1 to 1.2 AMPS.
SEAL KIT: SKN–1022 Buna "N"
SKV–1022 Viton
INSTALLATION: No restrictions.
WEIGHT: 1.95 lb [.88 kg] cartridge with coil only.
VALVE CAVITY: #C1020, See Page 0–012.0.

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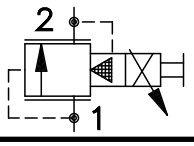
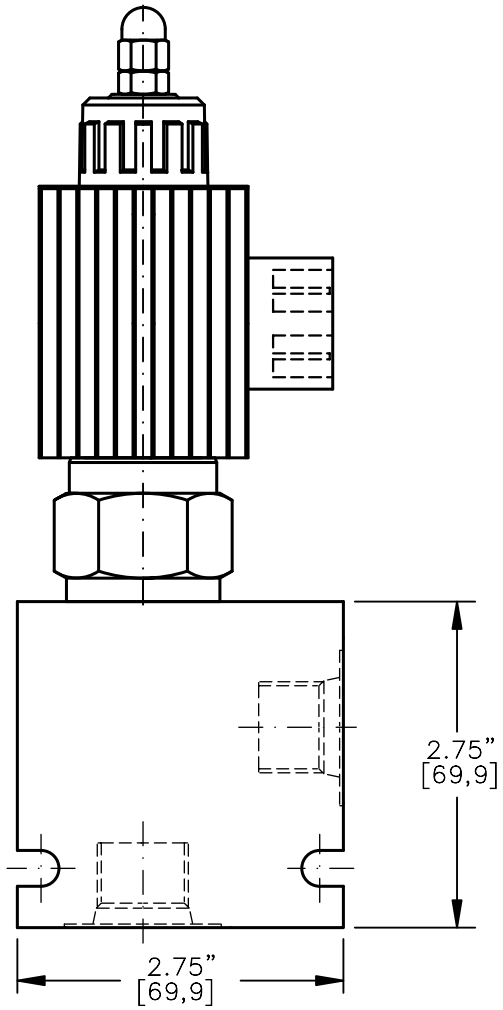
BUCHER hydraulics

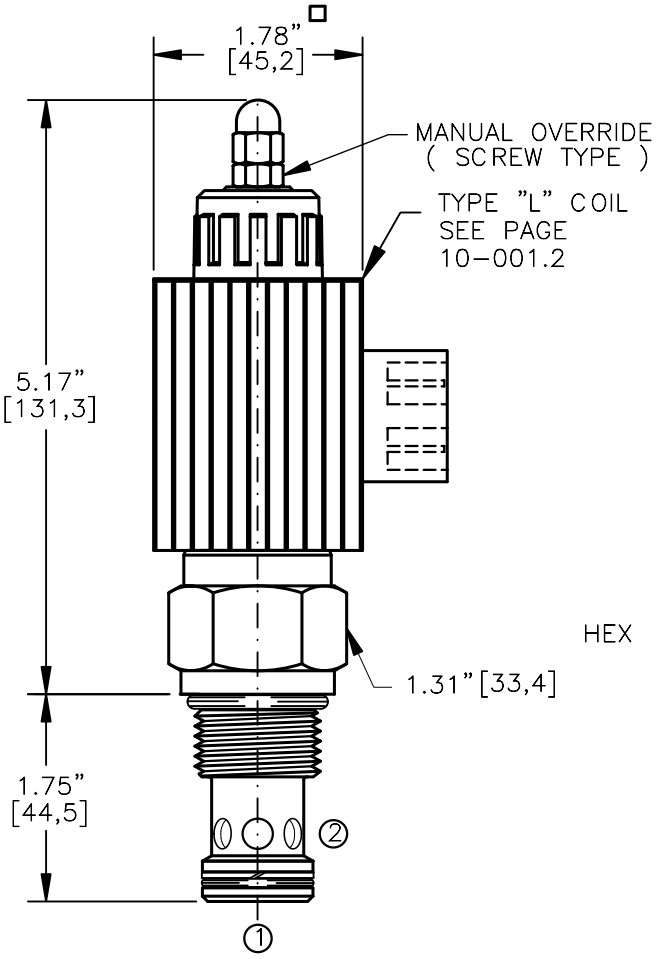
PROPORTIONAL PRESSURE RELIEF VALVE. PILOT OPERATED, SLIDING SPOOL TYPE.



Pat.#5,546,980

TORQUE:
Steel = 70/75 Ft-Lb. [95/102 Nm]
Aluminum = 55/60 Ft-Lb. [74/81 Nm]





NOTES:
1. FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-013.1
2. SOLENOIDS AVAILABLE WITH DIODES - CONSULT FACTORY.

ERVP-12-X-XX-X-X-XXX X

BASIC

SIZE
12 = 1.062"-12UNF

SEALS
N = BUNA "N"
V = VITON

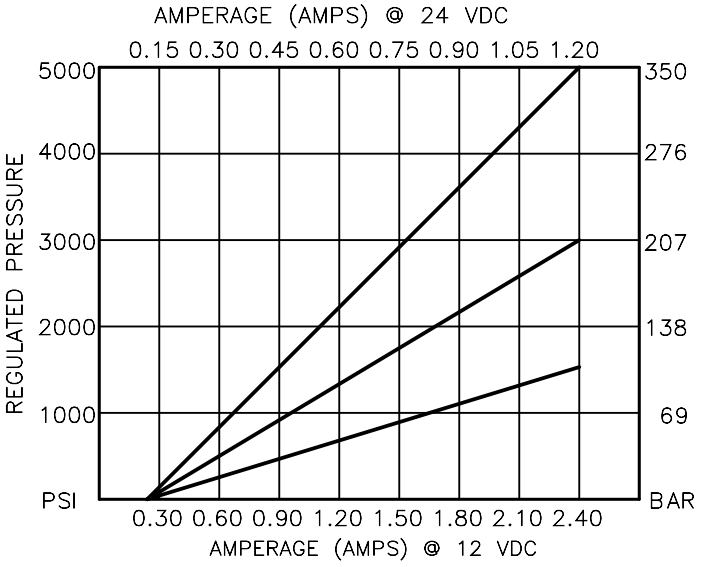
REGULATED PRESSURE
15 = 50 TO 1500 PSI
30 = 50 TO 3000 PSI
50 = 50 TO 5000 PSI

PORTS
0 = CARTRIDGE
4BX = G 1/2" BSPP
6BX = G 3/4" BSPP
10TX = SAE - #10
12TX = SAE - #12
"A" - ALUM. HOUSING
"S" - STEEL HOUSING

ADJUSTMENT OPTIONS
M = MANUAL OVERRIDE

TERMINALS
L =18GA. 24" LEADS
T =SPADE TERM.
B =BOLT TERM.
G =DIN43650
W =WEATHER-PACK
D =DEUTSCH-DT04-2P
M =METRI-PACK CONN.

VOLTAGE AMPS
12D = 12 VDC 3.00
24D = 24 VDC 1.50



BUCHER hydraulics

ELECTRO–HYDRAULIC, PROPORTIONAL, PRESSURE RELIEF VALVE.

DESCRIPTION

This unit is a electro–hydraulic, proportional, screw in cartridge style, pilot operated, sliding spool type, high pressure relief valve.

OPERATIONS

When the coil is de–energized, this valve allows flow and pressure from port 1 to port 2 if pressure exceeds the spring bias (50 psi). When the coil is energized the armature moves a precision bias spring against the pilot orifice thus varying the pressure setting at port 1 proportional to the current input. When the current is increased to the coil the relief pressure will increase and when decreased it will decrease. IN THE EVENT OF POWER FAILURE THE VALVE RELIEF PRESSURE SETTING AT PORT 1 WILL BE THE SPRING BIAS.

FEATURES AND BENEFITS

Continuous–duty, very low heat rise & waterproof solenoid coil.
Pressure in tank port (2) will add to the bias spring setting, and is limited to 2000 PSI.
Interchangeable solenoid coils & terminations options available.
Hardened precision fitted spool & sleeve provides reliable, long life.
A unique self aligning (floating) cage provides very low hysteresis and reliable operation.
Very efficient wet – armature solenoid core tube construction.
All external carbon steel parts are plated for longer life against the elements.
All cartridge valves are 100% functionally tested.

BUCHER hydraulics

ELECTRO–HYDRAULIC, PROPORTIONAL, PRESSURE RELIEF VALVE.

SPECIFICATIONS

OPERATING PRESSURE: 5000 PSI [350 Bar]
PROOF PRESSURE: 10,000 PSI [700 Bar]
REGULATED PRESSURE: 50 to 5000 PSI [3,5 to 345] See performance chart.
FLOW: 60.0 GPM [227,0 L/M] nominal.
INTERNAL PILOT FLOW: 60 cu.in/min [1,0 l/m] @ 3000 PSI [210 Bar]
VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.
5000 PSI [350 Bar] = Steel – Unplated.
OPERATING TEMPERATURE: –40° to +250° F. [–40° to +120° C.]
OPERATING MEDIA: All general purpose hydraulic fluids such as MIL–H–5606, SAE–#10, SAE–#20, etc.
RESPONSE: The most efficient method to control this valve is with current control and a 50 Hz dither.
POWER REQUIREMENTS: 12 VDC, Operating current 0.2 to 2.4 AMPS.
24 VDC, Operating current 0.1 to 1.2 AMPS.
SEAL KIT: SKN–1222 Buna "N"
SKV–1222 Viton
INSTALLATION: No restrictions.
WEIGHT: 2.25 lb [1,12 kg] cartridge with coil only.
VALVE CAVITY: #C1220, See Page 0–013.0.

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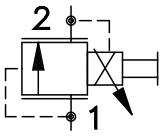
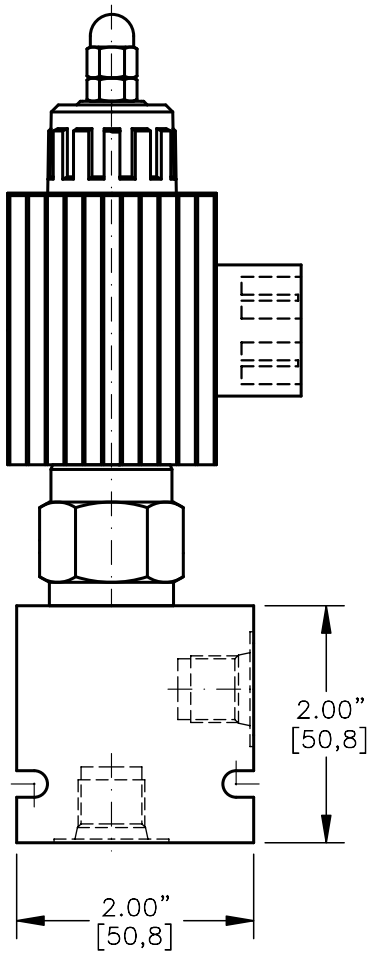
BUCHER hydraulics

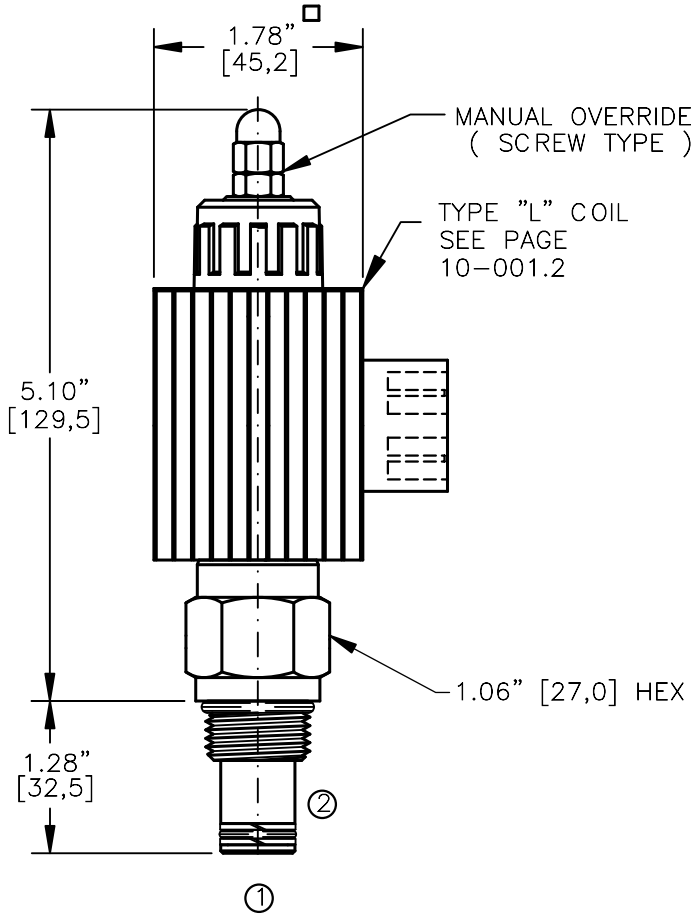
PROPORTIONAL PRESSURE RELIEF VALVE. DIRECT ACTING, LOW FLOW, POPPET TYPE.



Pat.#5,546,980

TORQUE:
Steel = 55/60 Ft-Lb. [74/81 Nm]
Aluminum = 35/40 Ft-Lb. [47/54 Nm]

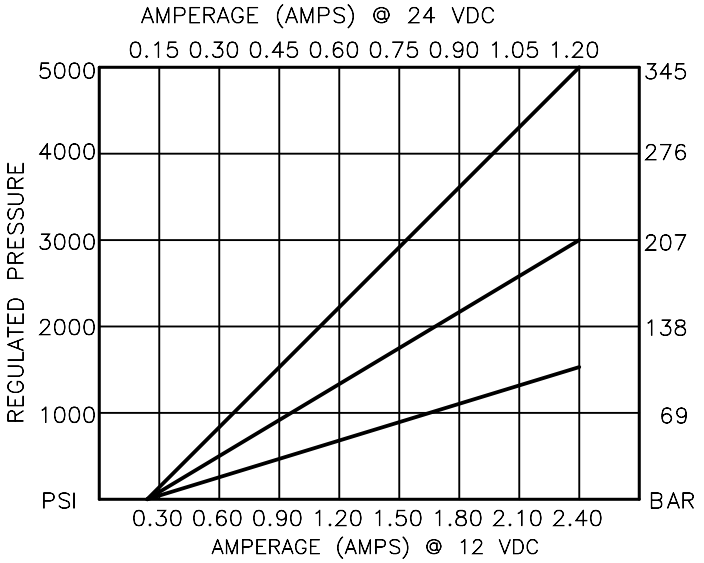




NOTES:
1. FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-012.1
2. SOLENOIDS AVAILABLE WITH DIODES - CONSULT FACTORY.

ERVD-10-X-XX-X-X-X-XXX X

- BASIC
- SIZE
  10 = 7/8"-14UNF
- SEALS
  N = BUNA "N"
  V = VITON
- REGULATED PRESSURE
  15 = 0 TO 1500 PSI
  30 = 0 TO 3000 PSI
  50 = 0 TO 5000 PSI
- PORTS = CARTRIDGE ONLY
  0 = G 1/4" BSPP
  02BX = G 3/8" BSPP
  06BX = SAE - #6
  06TX = SAE - #8
  08TX "A" = ALUM. HOUSING
  "S" = STEEL HOUSING
- ADJUSTMENT OPTIONS
  M = MANUAL OVERRIDE
- VOLTAGE AMPS
  12D = 12 VDC 3.00
  24D = 24 VDC 1.50
- TERMINALS
  L = 18GA. 24" LEADS
  T = SPADE TERM.
  B = BOLT TERM.
  G = DIN43650
  W = WEATHER-PACK
  D = DEUTSCH-DT04-2P
  M = METRI-PACK CONN.



BUCHER hydraulics

ELECTRO–HYDRAULIC, PROPORTIONAL, PRESSURE RELIEF VALVE.

DESCRIPTION

This unit is a electro–hydraulic, proportional, screw in cartridge style, direct acting, low flow, poppet type, high pressure relief valve.

OPERATIONS

When the coil is de–energized, this valve allows flow and pressure from port 1 to port 2 (tank).
When the coil is energized the armature moves a precision bias spring against the metering poppet thus varying the pressure at port 1 proportional to the curent input. When the current is increased to the coil the pressure will increase and when decreased it will decrease.
IN THE EVENT OF POWER FAILURE THE VALVE WILL REDUCE REGULATED PRESSURE AT PORT 1 TO 0 PSI.

FEATURES AND BENEFITS

Continuous–duty, very low heat rise & waterproof solenoid coil.
Pressure in tank port (2) will add to the bias spring setting, and is limited to 2000 PSI.
Interchangeable solenoid coils & terminations options available.
Hardened precision poppet & pilot seat provides reliable, long life.
A unique self aligning (floating) cage provides very low hysteresis and reliable operation.
Very efficient wet – armature solenoid core tube construction.
All external carbon steel parts are plated for longer life against the elements.
All cartridge valves are 100% functionally tested.
Industry common cavity.

BUCHER hydraulics

ELECTRO–HYDRAULIC, PROPORTIONAL, PRESSURE RELIEF VALVE.

SPECIFICATIONS

OPERATING PRESSURE: 5000 PSI [350 Bar]
PROOF PRESSURE: 10,000 PSI [700 Bar]
REGULATED PRESSURE: 0 to 5000 PSI [0 to 350] See performance chart.
FLOW: 1.0 GPM [3.8 L/M] nominal.
VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.
5000 PSI [350 Bar] = Steel – Unplated.
OPERATING TEMPERATURE: –40° to +250° F. [–40° to +120° C.]
OPERATING MEDIA: All general purpose hydraulic fluids such as MIL–H–5606, SAE–#10, SAE–#20, etc.
RESPONSE: The most efficient method to control this valve is with 24 VDC, Operating current 0.1 to 1.2 AMPS.
POWER REQUIREMENTS: 12 VDC, Operating current 0.2 to 2.4 AMPS. current control and a 50 Hz dither.
SEAL KIT: SKN–1022 Buna "N"
SKV–1022 Viton
INSTALLATION: No restrictions.
WEIGHT: 1.95 lb [.88 kg] cartridge with coil only.
VALVE CAVITY: #C1020, See Page 0–012.0.

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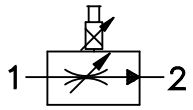
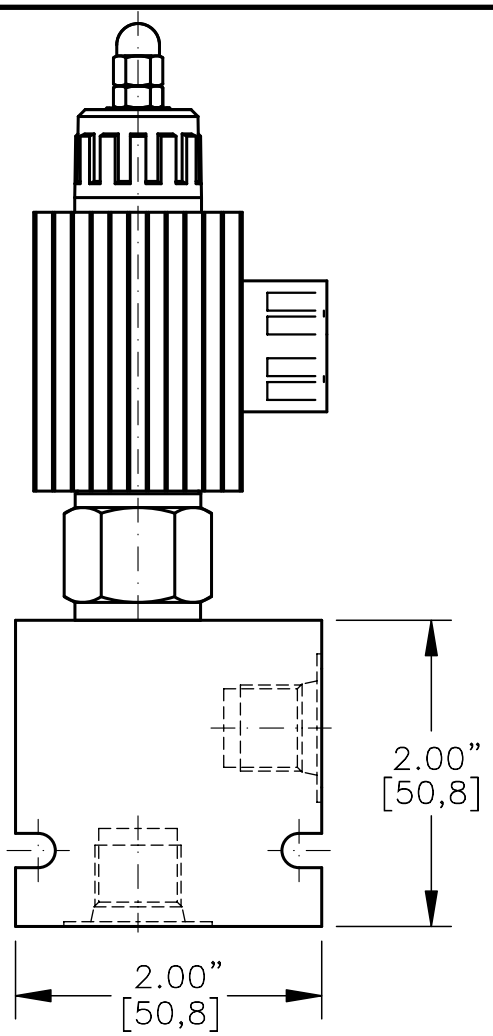
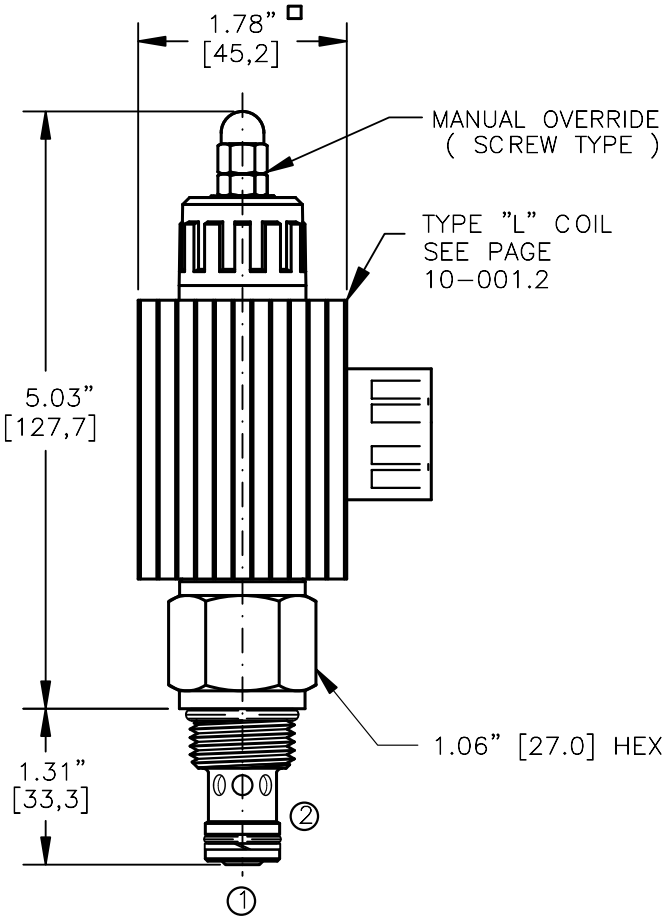
BUCHER hydraulics

ELECTRO–HYDRAULIC, PROPORTIONAL, PRESSURE COMP, FLOW CONTROL VALVE.



TORQUE:
Steel = 55/60 Ft–Lb. [74/81 Nm]
Aluminum = 35/40 Ft–Lb. [47/54 Nm]

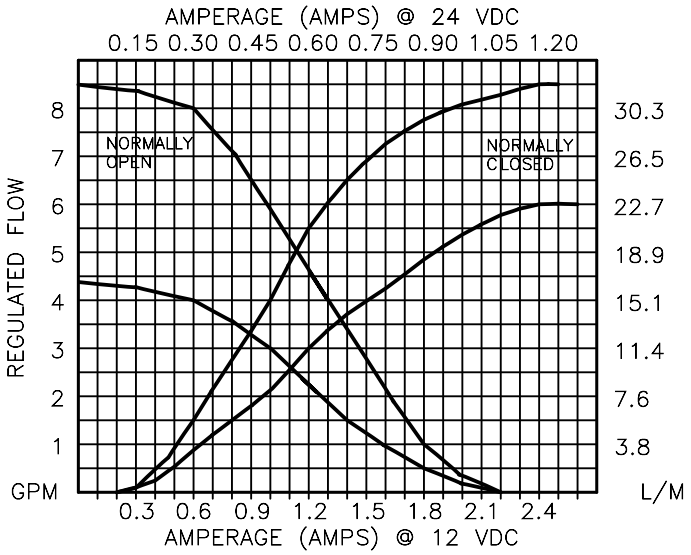




NOTES:
1. FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0–012.1
2. SOLENOIDS AVAILABLE WITH DIODES – CONSULT FACTORY.

EPFI–10–X–X–XX–X–X–XXX X

- BASIC
- SIZE
  10 = 7/8"–14UNF
- SEALS
  N = BUNA "N"
  V = VITON
- STYLE
  C = NORMALLY CLOSED
  O = NORMALLY OPEN
- REGULATED FLOW
  04 = 0 TO 4.0 GPM
  08 = 0 TO 8.0 GPM
- PORTS
  = CARTRIDGE ONLY
  0 = G 1/4" BSPP
  02BX = G 3/8" BSPP
  06BX = SAE – #6
  06TX = SAE – #8
  08TX "A" = ALUM. HOUSING
  "S" = STEEL HOUSING
- ADJUSTMENT OPTIONS
  0 = NONE
  M = MANUAL OVERRIDE
- VOLTAGE AMPS
  12D = 12 VDC 3.00
  24D = 24 VDC 1.50
- TERMINALS
  L =18GA. 24" LEADS
  T =SPADE TERM.
  B =BOLT TERM.
  G =DIN43650
  W =WEATHER–PACK
  D =DEUTSCH–DT04–2P
  M =METRI–PACK CONN.



BUCHER hydraulics

PROPORTIONAL, PRESSURE COMPENSATED, FLOW CONTROL VALVE.

DESCRIPTION

This valve is a cartridge style, electro–hydraulic, proportional, in–line (RESTRICTIVE) type, pressure compensated, hydraulic flow control. Regulated flow 8.0 GPM [30,2 L/M] max. is proportional to the current input regardless of load or system pressure.

OPERATIONS

This unit is a direct acting (NO PILOT FLOW), electro hydraulic, proportional, pressure compensated flow control valve. When the coil is energized the armature moves the metering orifice open against a precision bias spring varying the flow. A pressure compensatory spool (HYDROSTAT) modulates the flow at 100 PSI/6,9 Bar delta "P" providing the valve with a constant regulated flow regardless of load or system pressure. For the normally closed product when the current is increased to the coil the flow will increase. For the normally open product as the current is increased to the coil the flow will decrease. IN THE EVENT OF POWER FAILURE THE NORMALLY CLOSED VALVE WILL CLOSE AND THE NORMALLY OPEN VALVE WILL OPEN.

FEATURES AND BENEFITS

Continuous–duty, very low heat rise & waterproof solenoid coil.
Interchangeable solenoid coils & termination options available.
Hardened precision fitted spool & sleeve provides reliable, long life.
Very efficient wet – armature solenoid core tube construction.
All external carbon steel parts are plated for longer life against the elements.
All cartridge valves are 100% functionally tested.

BUCHER hydraulics

PROPORTIONAL, PRESSURE COMPENSATED, FLOW CONTROL VALVE.

SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]
PROOF PRESSURE: 10,000 PSI [700 Bar]
REGULATED FLOW: 8.0 GPM [30,2 l/m] Max. See performance chart.
INTERNAL LEAKAGE: 20/40 in^3/min [328/655 cc/m]@3/5K PSI [175/350 Bar]
VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.
5000 PSI [350 Bar] = Steel – Unplated.
OPERATING TEMPERATURE: –40° to +250° F. [–40° to +120° C.]
OPERATING MEDIA: All general purpose hydraulic fluids such as MIL–H–5606, SAE–#10, SAE–#20, etc.
RESPONSE: The most efficient method to control this valve is with current control and a 50 Hz dither.
POWER REQUIREMENTS: 12 VDC, Operating current 0.2 to 2.2 AMPS.
24 VDC, Operating current 0.1 to 1.1 AMPS.
SEAL KIT: SKN–1022 Buna "N"
SKV–1022 Viton
INSTALLATION: No restrictions.
WEIGHT: 1.9 lb [0,86 kg] cartridge with coil only.
VALVE CAVITY: #C1020, See Page 0–012.0.

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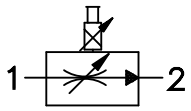
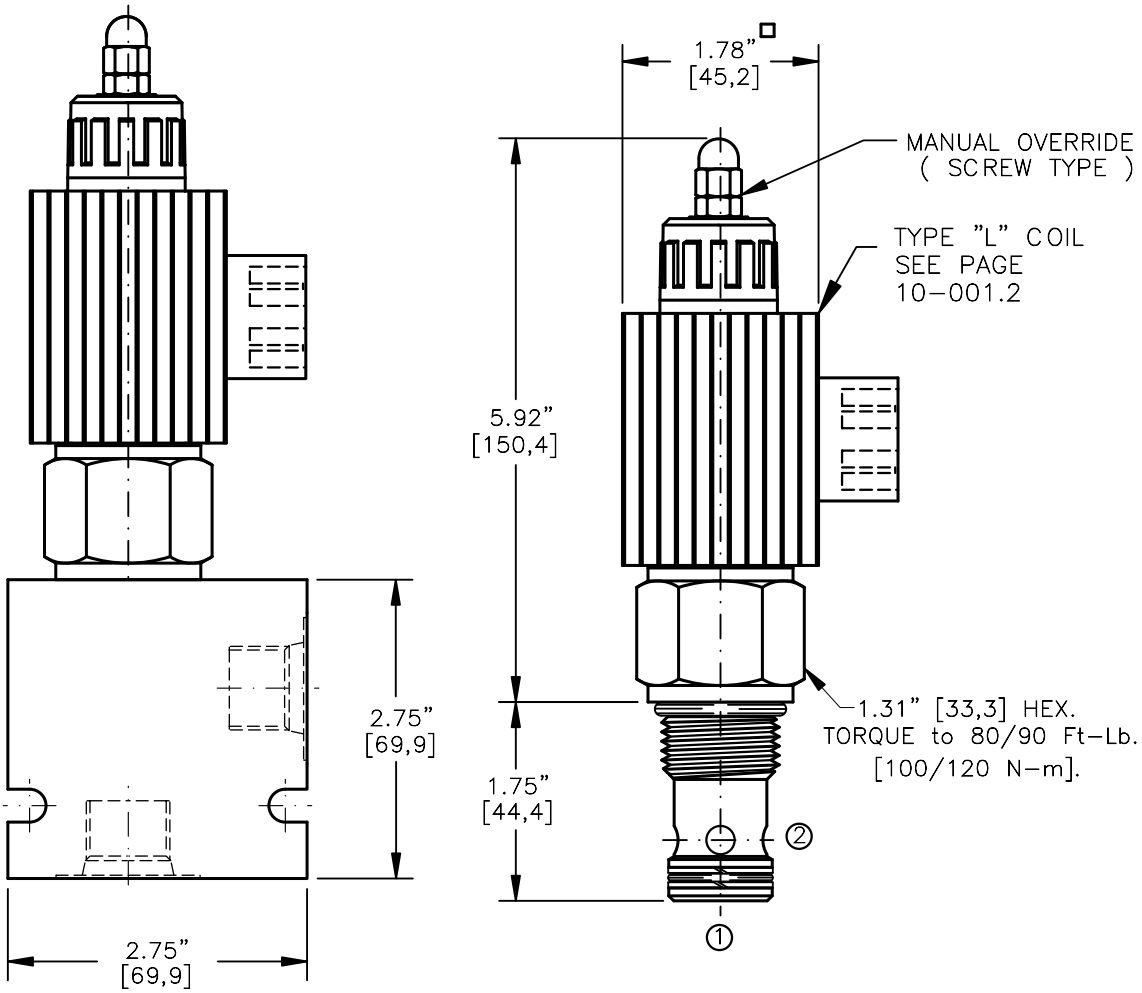
Reference: 520-P-111020-EN-00/09.2015

BUCHER hydraulics

ELECTRO–HYDRAULIC, PROPORTIONAL, PRESSURE COMP, FLOW CONTROL VALVE.





NOTES:
1. FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0–013.1
2. SOLENOIDS AVAILABLE WITH DIODES – CONSULT FACTORY.

EPFI–12–N–X–XX–X–X–XXX X

BASIC

SIZE
12=1.062"–12UNF

SEALS
N = BUNA "N"
V = VITON

TYPE
C = NORMALLY CLOSED
O = NORMALLY OPEN

REGULATED FLOW
05 = 0 TO 5.0 GPM
10 = 0 TO 10.0 GPM
15 = 0 TO 15.0 GPM

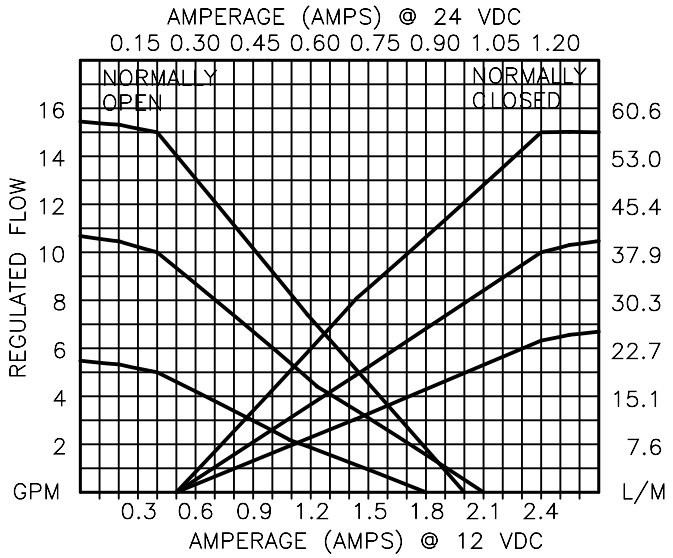
"A" – ALUM. HOUSING
"S" – STEEL HOUSING

PORTS
0 = CARTRIDGE
4BX = G 1/2" BSPP
6BX = G 3/4" BSPP
10TX = SAE – #10
12TX = SAE – #12

ADJUSTMENT OPTIONS
0 = NONE
M = MANUAL OVERRIDE

VOLTAGE AMPS
12D = 12 VDC 3.00
24D = 24 VDC 1.50

TERMINALS
L=18GA. 24" LEADS
T=SPADE TERM.
B=BOLT TERM.
G=DIN43650
W=WEATHER–PACK
D=DEUTSCH–DT04–2P
M=METRI–PACK CONN



BUCHER hydraulics

PROPORTIONAL, PRESSURE COMPENSATED, FLOW CONTROL VALVE.

DESCRIPTION

This valve is a cartridge style, electro–hydraulic, proportional, in–line (RESTRICTIVE) type, pressure compensated, hydraulic flow control. Regulated flow 15.0 GPM [56,8 l/m] max. is proportional to the current input regardless of load or system pressure.

OPERATIONS

This unit is a direct acting (NO PILOT FLOW), electro hydraulic, proportional, pressure compensated flow control valve. When the coil is energized, the armature moves the metering orifice open against a precision bias spring varying the flow. A pressure compensator spool (HYDROSTAT) modulates the flow at 100 PSI/6,9 Bar delta "P" providing the valve with a constant regulated flow regardless of load or system pressure. For the normally closed product when the current is increased to the coil, the flow will increase. For the normally open product as the current is increased to the coil the flow will decrease. IN THE EVENT OF POWER FAILURE, THE NORMALLY CLOSED VALVE WILL CLOSE AND THE NORMALLY OPEN VALVE WILL OPEN.

FEATURES AND BENEFITS

Continuous–duty, very low heat rise & waterproof solenoid coil.
Interchangeable solenoid coils & termination options available.
Hardened precision fitted spool & sleeve provides reliable, long life.
Very efficient wet – armature solenoid core tube construction.
All external carbon steel parts are plated for longer life against the elements.
All cartridge valves are 100% functionally tested.

BUCHER hydraulics

PROPORTIONAL, PRESSURE COMPENSATED, FLOW CONTROL VALVE.

SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]
PROOF PRESSURE: 10,000 PSI [700 Bar]
REGULATED FLOW: 15.0 GPM [56,8 l/m] Max. See performance chart.
INTERNAL LEAKAGE: 20/40 in^3/min [328/655 cc/m] @ 3/5K PSI [175/350 Bar]
VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.
5000 PSI [350 Bar] = Steel – Unplated.
OPERATING TEMPERATURE: –40° to +250° F. [–40° to +120° C.]
OPERATING MEDIA: All general purpose hydraulic fluids such as MIL–H–5606, SAE–#10, SAE–#20, etc.
RESPONSE: The most efficient method to control this valve is with current control and a 50 Hz dither.
POWER REQUIREMENTS: 12 VDC, Operating current 0.2 to 2.2 AMPS.
24 VDC, Operating current 0.1 to 1.1 AMPS.
SEAL KIT: SKN–1222 Buna "N"
SKV–1222 Viton
INSTALLATION: No restrictions.
WEIGHT: 2.27 lb [1,03 kg] cartridge with coil only.
VALVE CAVITY: #C1220, See Page 0–013.0.

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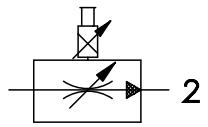
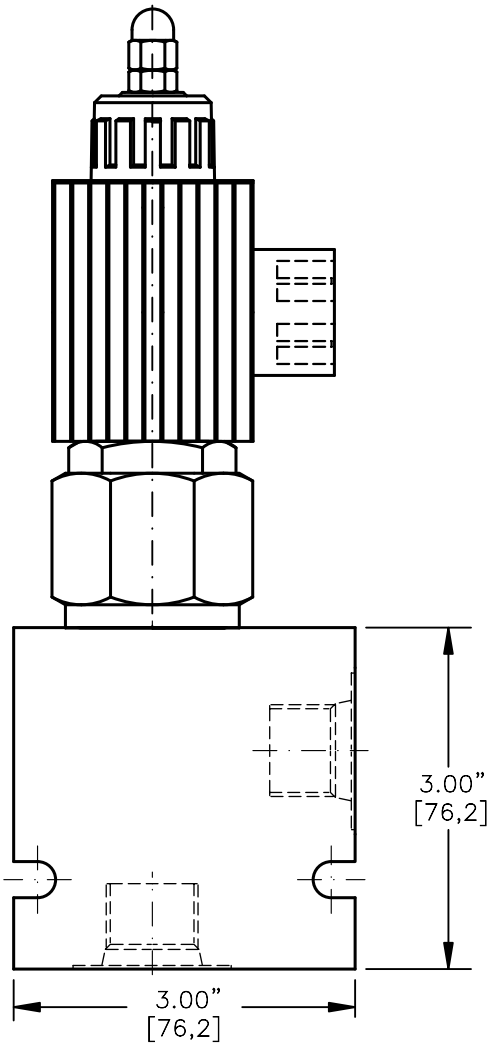
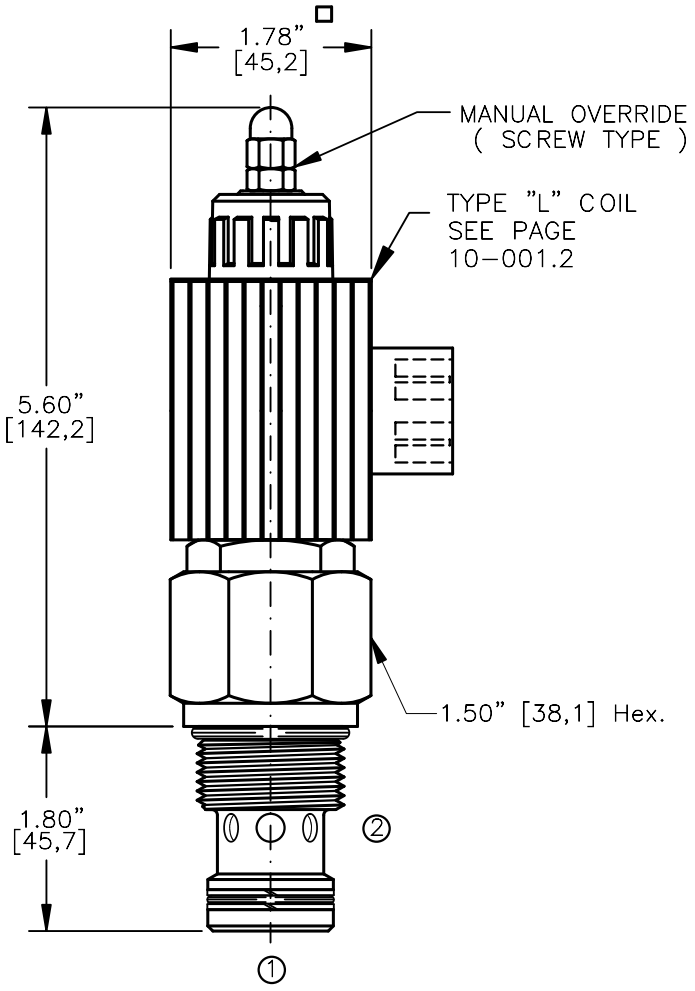
BUCHER hydraulics

ELECTRO–HYDRAULIC, PROPORTIONAL, IN–LINE, PRESSURE COMP, FLOW CONTROL VALVE.



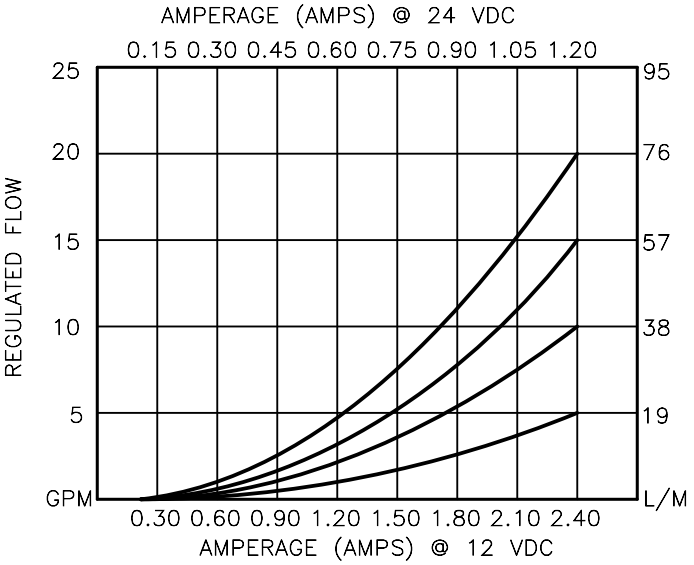




TORQUE:
Steel = 95/100 Ft–Lb. [129/136 Nm]
Aluminum = 70/75 Ft–Lb. [95/102 Nm]

EPFC–16–X–XX–X–X–XXX X

- BASIC
- SIZE
  16 = 1.312"–12UNF
- SEALS
  N = BUNA "N"
  V = VITON
- REGULATED FLOW
  05 = 0 TO 5.0 GPM
  10 = 0 TO 10.0 GPM
  15 = 0 TO 15.0 GPM
  20 = 0 TO 20.0 GPM
- PORTS = CARTRIDGE ONLY
  0 = G 3/4" BSPP
  06BX = G 1" BSPP
  08BX = SAE – #12
  12TX = SAE – #16
  16TX "A" = ALUM. HOUSING
  "S" = STEEL HOUSING
- ADJUSTMENT OPTIONS
  M = MANUAL OVERRIDE
- VOLTAGE AMPS
  12D = 12 VDC 3.00
  24D = 24 VDC 1.50
- TERMINALS
  L = 18GA. 24" LEADS
  T = SPADE TERM.
  B = BOLT TERM.
  G = DIN43650
  W = WEATHER–PACK
  D = DEUTSCH–DT04–2P
  M = METRI–PACK CONN.



BUCHER hydraulics

PROPORTIONAL, IN–LINE TYPE, FLOW CONTROL VALVE.

DESCRIPTION

This valve is a cartridge style, electro–hydraulic, proportional, in–line (RESTRICTIVE) type, pressure compensated, hydraulic flow control. Regulated flow 20.0 GPM [76,0 L/M] max. is proportional to the current input regardless of load or system pressure.

OPERATIONS

This unit is a direct acting (NO PILOT FLOW), electro hydraulic, pro–portional, pressure compensated, flow control valve. When the coil is energized the armature moves the metering orifice open against a pre–cision bias spring varying the flow. A pressure compensator spool (HYDROSTAT) modulates the flow at 100 PSI/6,9 Bar delta "P" providing the valve with a constant regulated flow regardless of load or system pressure. When current is increased to the coil the flow will increase, as the current is decreased the flow will decrease proportionally.
IN THE EVENT OF POWER FAILURE THE VALVE WILL CLOSE.

FEATURES AND BENEFITS

Continuous–duty, very low heat rise & waterproof solenoid coil.
Interchangeable solenoid coils & terminations options available.
Hardened precision fitted spool & sleeve provides reliable, long life.
Very efficient wet – armature solenoid core tube construction.
All external carbon steel parts are plated for longer life against the elements.
All cartridge valves are 100% functionally tested.
Industry common cavity.

BUCHER hydraulics

PROPORTIONAL, IN–LINE TYPE, FLOW CONTROL VALVE.

SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]
PROOF PRESSURE: 10,000 PSI [700 Bar]
REGULATED FLOW: 20.0 GPM [76,0 l/m] Max. See performance chart.
INTERNAL LEAKAGE: 20 cu.in/min [330 cc/m] @ 5,000 PSI [350 Bar]
VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.
5000 PSI [350 Bar] = Steel – Unplated.
OPERATING TEMPERATURE: –40° to +250° F. [–40° to +120° C.]
OPERATING MEDIA: All general purpose hydraulic fluids such as MIL–H–5606, SAE–#10, SAE–#20, etc.
RESPONSE: The most efficient method to control this valve is with current control and a 50 Hz dither.
POWER REQUIREMENTS: 12 VDC, Operating current 0.2 to 2.2 AMPS.
24 VDC, Operating current 0.1 to 1.1 AMPS.
SEAL KIT: SKN–1622 Buna "N"
SKV–1622 Viton
INSTALLATION: No restrictions.
WEIGHT: 2.58 lb [1,17 kg] cartridge with coil only.
VALVE CAVITY: #C1620, See Page 0–014.0.

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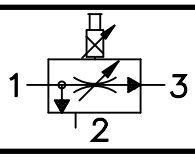
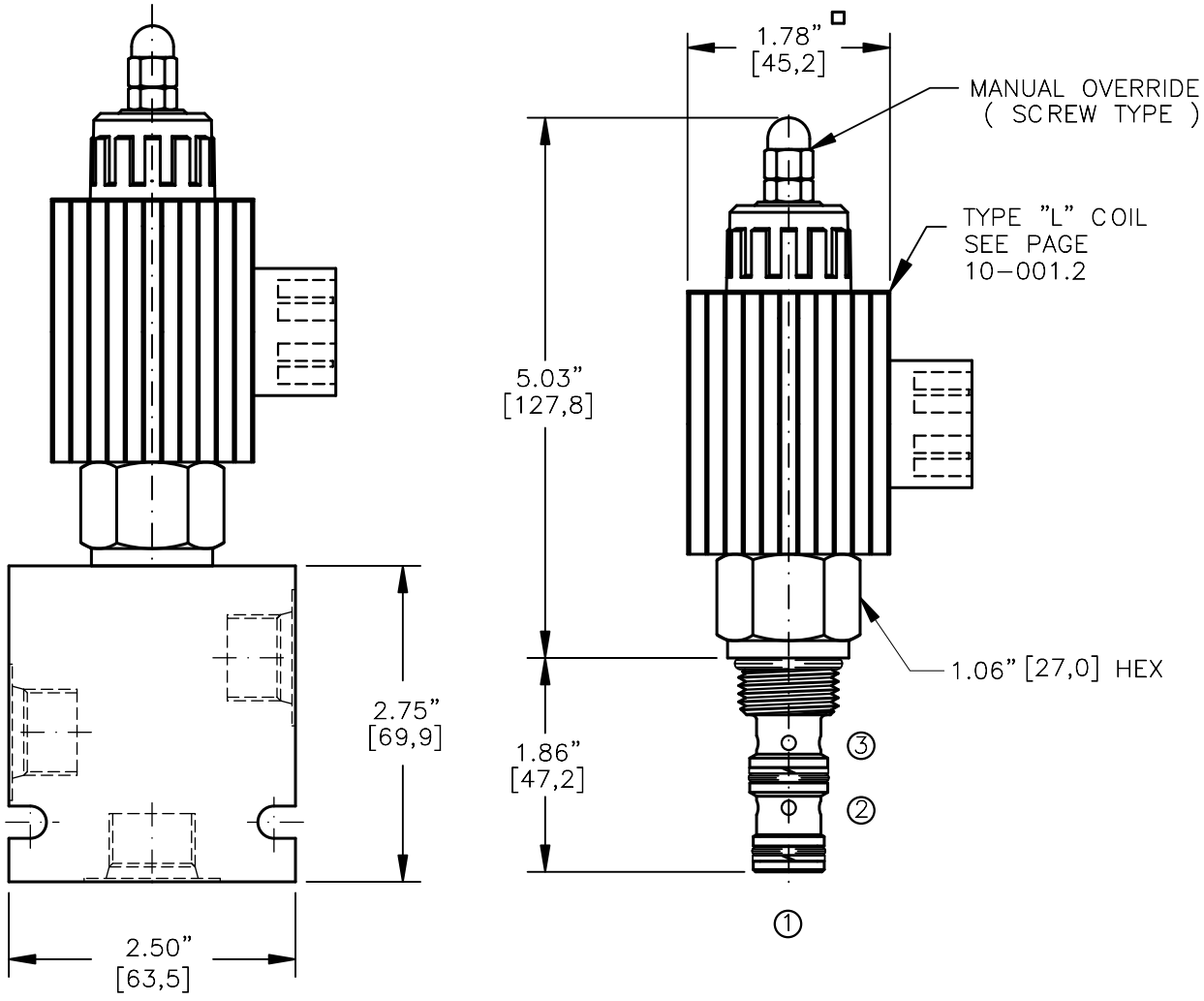
BUCHER hydraulics

ELECTRO–HYDRAULIC, PROPORTIONAL, PRIORITY, PRESSURE COMP, FLOW CONTROL VALVE.



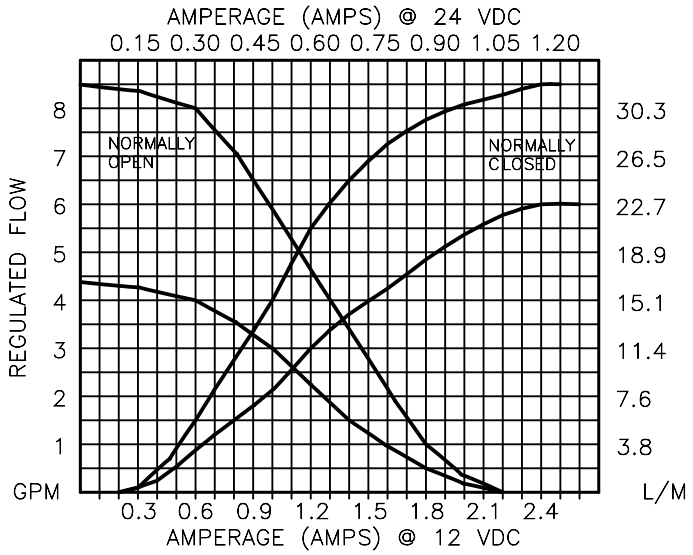


TORQUE:

Steel = 55/60 Ft–Lb. [74/81 Nm]
Aluminum = 35/40 Ft–Lb. [47/54 Nm]

EPFB–10–X–X–XX–X–X–XXX X

- BASIC
- SIZE: 10=0.875"–14UNF
- SEALS: N = BUNA "N"; V = VITON
- STYLE: C = NORMALLY CLOSED; O = NORMALLY OPEN
- REGULATED FLOW: 04 = 0 TO 4.0 GPM; 08 = 0 TO 8.0 GPM
- PORTS: 0 = CARTRIDGE; 2BX = G 1/4" BSPP; 3BX = G 3/8" BSPP; 6TX = SAE – #6; 8TX = SAE – #8
- "A" – ALUM. HOUSING; "S" – STEEL HOUSING
- ADJUSTMENT OPTIONS: 0 = NONE; M = MANUAL OVERRIDE
- VOLTAGE / AMPS: 12D = 12 VDC 3.00; 24D = 24 VDC 1.50
- TERMINALS: L=18GA. 24" LEADS; T=SPADE TERM.; B=BOLT TERM.; G=DIN43650; W=WEATHER–PACK; D=DEUTSCH–DT04–2P; M=METRI–PACK CONN



BUCHER hydraulics

PROPORTIONAL, PRIORITY TYPE, PRESSURE COMP, FLOW CONTROL VALVE.

DESCRIPTION

This valve is a cartridge style, electro–hydraulic, proportional, priority (BY–PASS) type, pressure compensated, hydraulic flow control. Regulated flow 8.0 GPM [30,3 L/M] max. is proportional to the current input regardless of load or system pressure. After the priority flow is satisfied the excess flow is diverted to a secondary circuit or to tank. Maximum inlet flow is 10.0 GPM [37,9 L/M].

OPERATIONS

This unit is a direct acting (NO PILOT FLOW), electro hydraulic, proportional, pressure compensated flow control valve. When the coil is energized, the armature moves the metering orifice open against a precision bias spring varying the flow. A pressure compensator spool (HYDROSTAT) modulates the flow at 100 PSI/6,9 Bar delta "P" providing the valve with a constant regulated flow regardless of load or system pressure. For the normally closed product when the current is increased to the coil, the flow will increase. For the normally open product as the current is increased to the coil the flow will decrease. IN THE EVENT OF POWER FAILURE, THE NORMALLY CLOSED VALVE WILL CLOSE AND THE NORMALLY OPEN VALVE WILL OPEN.

FEATURES AND BENEFITS

Continuous–duty, very low heat rise & waterproof solenoid coil.
Interchangeable solenoid coils & termination options available.
Hardened precision fitted spool & sleeve provides reliable, long life.
Very efficient wet – armature solenoid core tube construction.
All external parts are zinc plated for longer life against elements.
All cartridge valves are 100% functionally tested.

BUCHER hydraulics

PROPORTIONAL, PRIORITY TYPE, PRESSURE COMP, FLOW CONTROL VALVE.

SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]
PROOF PRESSURE: 10,000 PSI [700 Bar]
REGULATED FLOW: 8.0 GPM [30,3 l/m] Max. See performance chart.
INTERNAL LEAKAGE: 20 cu.in/min [328 cc/m] @ 5,000 PSI [350 Bar]
VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.
5000 PSI [350 Bar] = Steel – Unplated.
OPERATING TEMPERATURE: –40° to +250° F. [–40° to +120° C.]
OPERATING MEDIA: All general purpose hydraulic fluids such as MIL–H–5606, SAE–#10, SAE–#20, etc.
RESPONSE: The most efficient method to control this valve is with current control and a 50 Hz dither.
POWER REQUIREMENTS: 12 VDC, Operating current 0.2 to 2.2 AMPS.
24 VDC, Operating current 0.1 to 1.1 AMPS.
SEAL KIT: SKN–1032 Buna "N"
SKV–1032 Viton
INSTALLATION: No restrictions.
WEIGHT: 1.93 lb [0,90 kg] cartridge with coil only.
VALVE CAVITY: #C1030, See Page 0–032.0.

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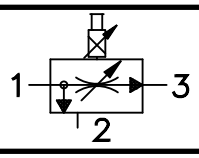
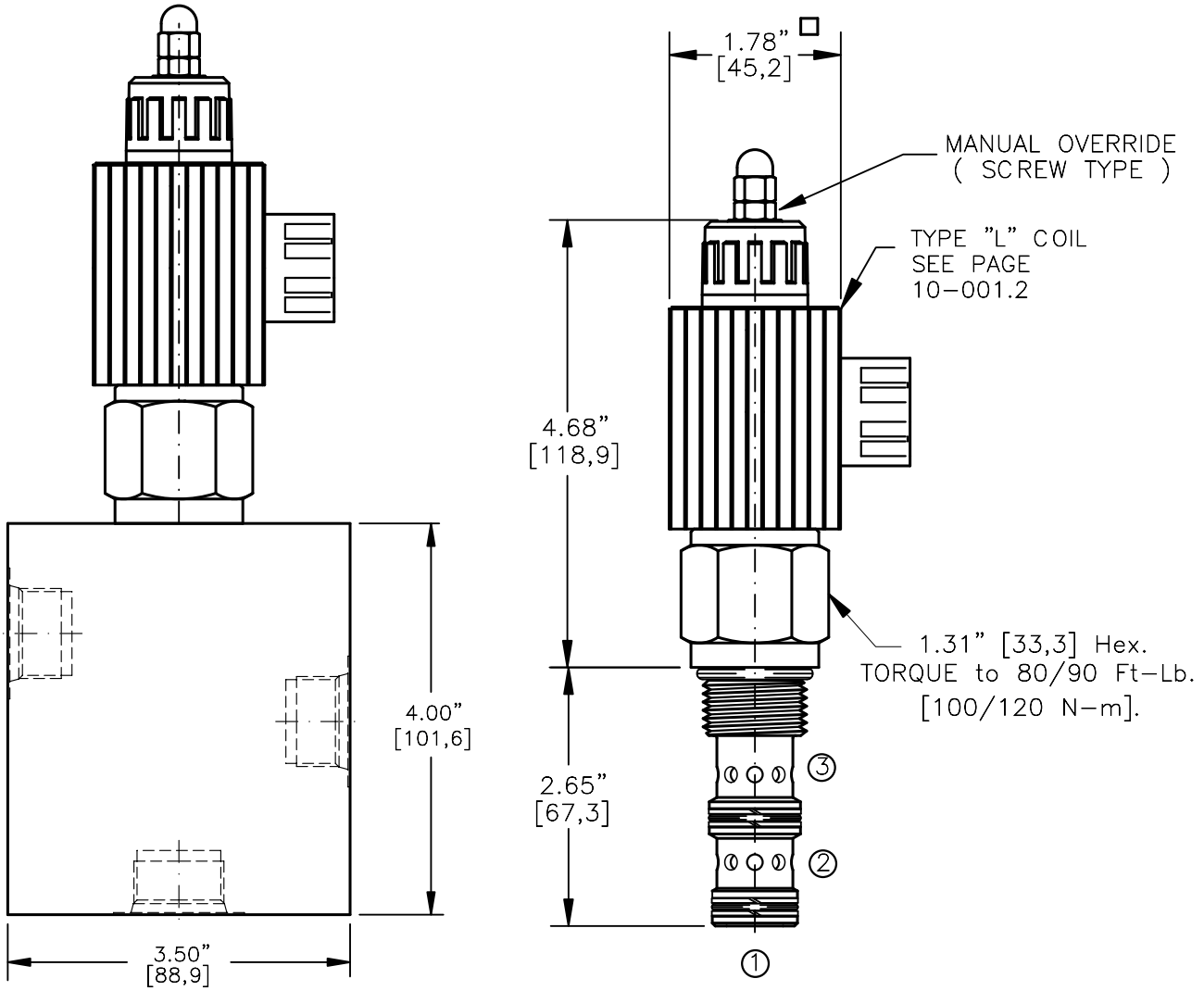
BUCHER hydraulics

ELECTRO–HYDRAULIC, PROPORTIONAL, PRIORITY, PRESSURE COMP, FLOW CONTROL VALVE.





FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0–033.1

EPFB–12–X–X–XX–X–X–XXX X

BASIC

SIZE
12 = 1.062"–12UNF

SEALS
N = BUNA "N"
V = VITON

STYLE
C = NORMALLY CLOSED
O = NORMALLY OPEN

REGULATED FLOW
05 = 0 TO 5.0 GPM
10 = 0 TO 10.0 GPM
15 = 0 TO 15.0 GPM

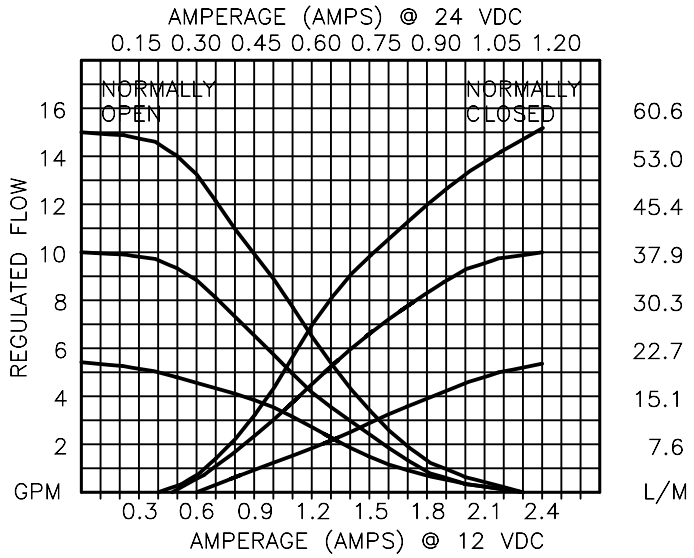
"A" = ALUM. HOUSING
"S" = STEEL HOUSING

PORTS
0 = CARTRIDGE ONLY
04BX = G 1/2"–14 BSPP
06BX = G 3/4"–14 BSPP
10TX = SAE – #10
12TX = SAE – #12

ADJUSTMENT OPTIONS
0 = NONE
M = MANUAL OVERRIDE

VOLTAGE AMPS
12D = 12 VDC 3.00
24D = 24 VDC 1.50

TERMINALS
L = 18GA. 24" LEADS
T = SPADE TERM.
B = BOLT TERM.
G = DIN43650
W = WEATHER–PACK
D = DEUTSCH–DT04–2P
M = METRI–PACK CONN.



BUCHER hydraulics

PROPORTIONAL, PRIORITY TYPE, PRESSURE COMP, FLOW CONTROL VALVE.

DESCRIPTION

This valve is a cartridge style, electro–hydraulic, proportional, priority (BY–PASS) type, pressure compensated, hydraulic flow control. Regulated flow 15.0 GPM [56,8 L/M] max. is proportional to the current input regardless of load or system pressure. After the priority flow is satisfied the excess flow is diverted to a secondary circuit or to tank. Maximum inlet flow is 26.0 GPM [98,4 L/M].

OPERATIONS

This unit is a direct acting (NO PILOT FLOW), electro hydraulic, pro–portional, pressure compensated, flow control valve. When the coil is energized the armature moves the metering orifice open against a pre–cision bias spring varying the flow. A pressure compensator spool (HYDROSTAT) modulates the flow at 100 PSI/6,9 Bar delta "P" providing the valve with a constant regulated flow regardless of load or system pressure. When current is increased to the coil the flow will increase, as the current is decreased the flow will decrease proportionally.
IN THE EVENT OF POWER FAILURE THE VALVE WILL CLOSE.

FEATURES AND BENEFITS

Continuous–duty, very low heat rise & waterproof solenoid coil.
Interchangeable solenoid coils & termination options available.
Hardened precision fitted spool & sleeve provides reliable, long life.
Very efficient wet – armature solenoid core tube construction.
All external carbon steel parts are plated for longer life against the elements.
All cartridge valves are 100% functionally tested.

BUCHER hydraulics

PROPORTIONAL, PRIORITY TYPE, PRESSURE COMP, FLOW CONTROL VALVE.

SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]
PROOF PRESSURE: 10,000 PSI [700 Bar]
REGULATED FLOW: 15.0 GPM [56,7 l/m] Max. See performance chart.
INTERNAL LEAKAGE: 20 cu.in/min [330 cc/m] @ 5,000 PSI [350 Bar]
VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.
5000 PSI [350 Bar] = Steel – Unplated.
OPERATING TEMPERATURE: –40° to +250° F. [–40° to +120° C.]
OPERATING MEDIA: All general purpose hydraulic fluids such as MIL–H–5606, SAE–#10, SAE–#20, etc.
RESPONSE: The most efficient method to control this valve is with current control and a 50 Hz dither.
POWER REQUIREMENTS: 12 VDC, Operating current 0.2 to 2.2 AMPS.
24 VDC, Operating current 0.1 to 1.1 AMPS.
SEAL KIT: SKN–1232 Buna "N"
SKV–1232 Viton
INSTALLATION: No restrictions.
WEIGHT: 2.66 lb [1,20 kg] cartridge with coil only.
VALVE CAVITY: #C1230, See Page 0–033.0.

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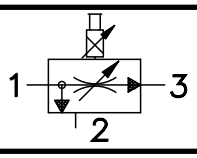
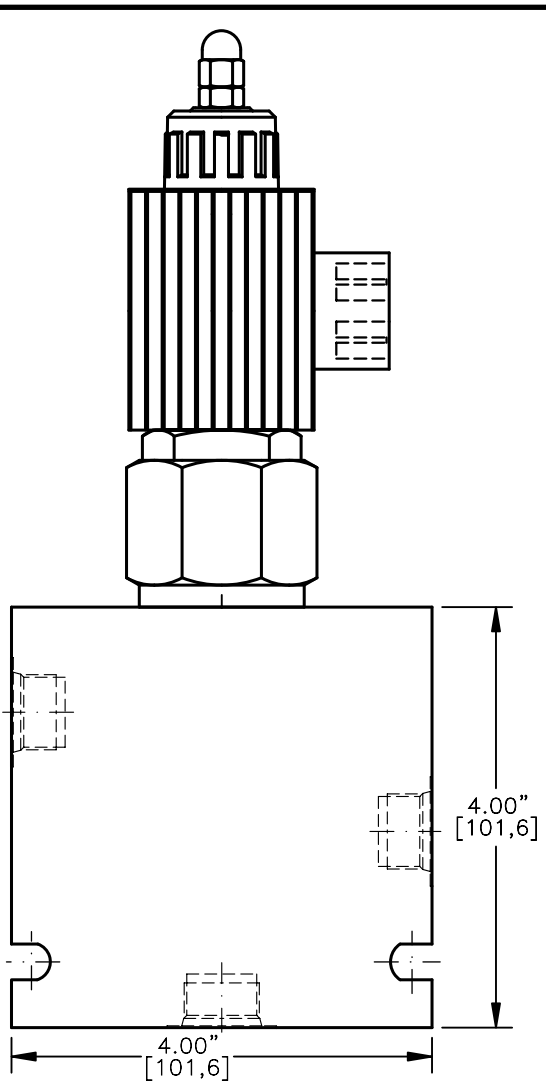
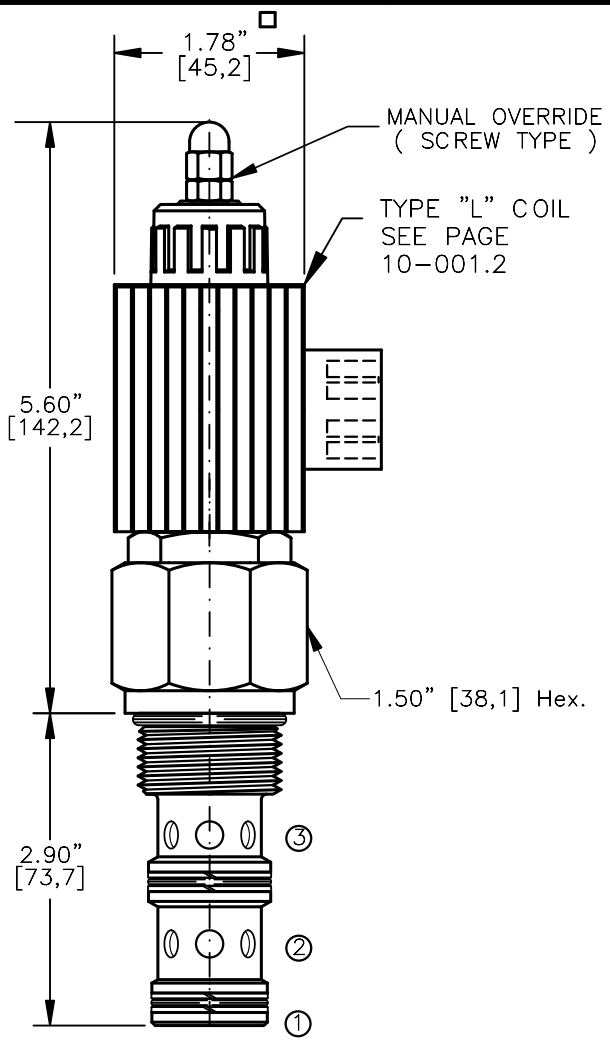
Reference: 520-P-111530-EN-01/06.2017

BUCHER hydraulics

ELECTRO–HYDRAULIC, PROPORTIONAL, PRIORITY, PRESSURE COMP, FLOW CONTROL VALVE.







TORQUE:
Steel = 95/100 Ft–Lb. [129/136 Nm]
Aluminum = 70/75 Ft–Lb. [95/102 Nm]

EPFD–16–X–XX–X–X–XXX X

BASIC

SIZE
16 = 1.312"–12UNF

SEALS
N = BUNA "N"
V = VITON

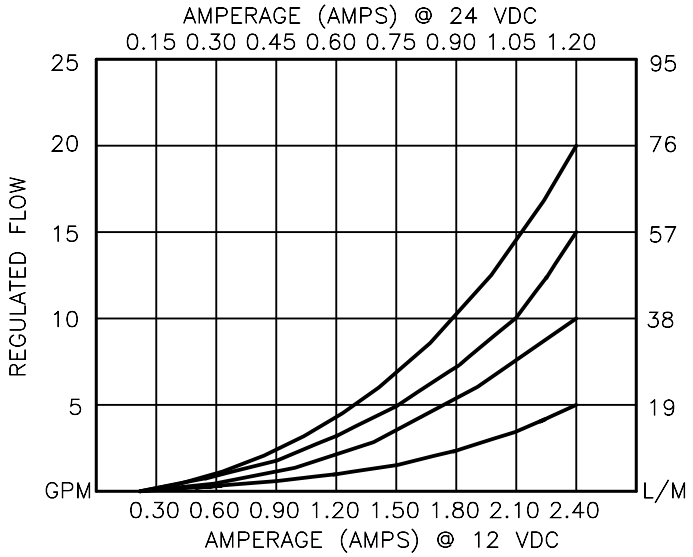
REGULATED FLOW
05 = 0 TO 5.0 GPM
10 = 0 TO 10.0 GPM
15 = 0 TO 15.0 GPM
20 = 0 TO 20.0 GPM

PORTS = CARTRIDGE ONLY
0 = G 3/4" BSPP
06BX = G 1" BSPP
08BX = SAE – #12
12TX = SAE – #16
16TX "A" = ALUM. HOUSING
"S" = STEEL HOUSING

ADJUSTMENT OPTIONS
M = MANUAL OVERRIDE

VOLTAGE AMPS
12D = 12 VDC 3.00
24D = 24 VDC 1.50

TERMINALS
L = 18GA. 24" LEADS
T = SPADE TERM.
B = BOLT TERM.
G = DIN43650
W = WEATHER–PACK
D = DEUTSCH–DT04–2P
M = METRI–PACK CONN.



BUCHER hydraulics

PROPORTIONAL, PRIORITY TYPE, PRESSURE COMP, FLOW CONTROL VALVE.

DESCRIPTION

This valve is a cartridge style, electro–hydraulic, proportional, priority (BY–PASS) type, pressure compensated, hydraulic flow control. Regulated flow 20.0 GPM [76,0 L/M] max. is proportional to the current input regardless of load or system pressure. After the priority flow is satisfied the excess flow is diverted to a secondary circuit or to tank. Maximum inlet flow is 35.0 GPM [130,0 L/M].

OPERATIONS

This unit is a direct acting (NO PILOT FLOW), electro hydraulic, pro–portional, pressure compensated, flow control valve. When the coil is energized the armature moves the metering orifice open against a pre–cision bias spring varying the flow. A pressure compensator spool (HYDROSTAT) modulates the flow at 100 PSI/6,9 Bar delta "P" providing the valve with a constant regulated flow regardless of load or system pressure. When current is increased to the coil the flow will increase, as the current is decreased the flow will decrease proportionally.
IN THE EVENT OF POWER FAILURE THE VALVE WILL CLOSE.

FEATURES AND BENEFITS

Continuous–duty, very low heat rise & waterproof solenoid coil.
Interchangeable solenoid coils & terminations options available.
Hardened precision fitted spool & sleeve provides reliable, long life.
Very efficient wet – armature solenoid core tube construction.
All external carbon steel parts are plated for longer life against the elements.
All cartridge valves are 100% functionally tested.

BUCHER hydraulics

PROPORTIONAL, PRIORITY TYPE, PRESSURE COMP, FLOW CONTROL VALVE.

SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]
PROOF PRESSURE: 10,000 PSI [700 Bar]
REGULATED FLOW: 20.0 GPM [76,0 l/m] Max. See performance chart.
INTERNAL LEAKAGE: 20 cu.in/min [330 cc/m] @ 5,000 PSI [350 Bar]
VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.
5000 PSI [350 Bar] = Steel – Unplated.
OPERATING TEMPERATURE: –40° to +250° F. [–40° to +120° C.]
OPERATING MEDIA: All general purpose hydraulic fluids such as MIL–H–5606, SAE–#10, SAE–#20, etc.
RESPONSE: The most efficient method to control this valve is with current control and a 50 Hz dither.
POWER REQUIREMENTS: 12 VDC, Operating current 0.2 to 2.2 AMPS.
24 VDC, Operating current 0.1 to 1.1 AMPS.
SEAL KIT: SKN–1632 Buna "N"
SKV–1632 Viton
INSTALLATION: No restrictions.
WEIGHT: 2.66 lb [1,20 kg] cartridge with coil only.
VALVE CAVITY: #C1630, See Page 0–034.0.

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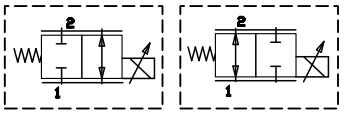
Reference: 520-P-111540-EN-00/09.2015

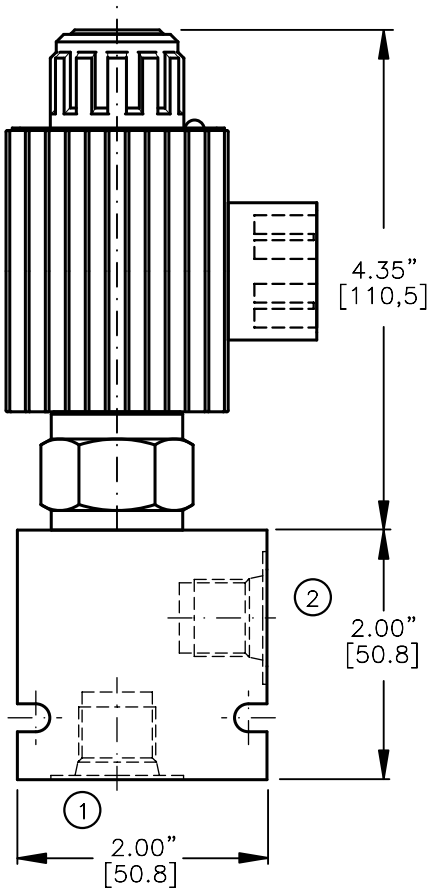
BUCHER hydraulics

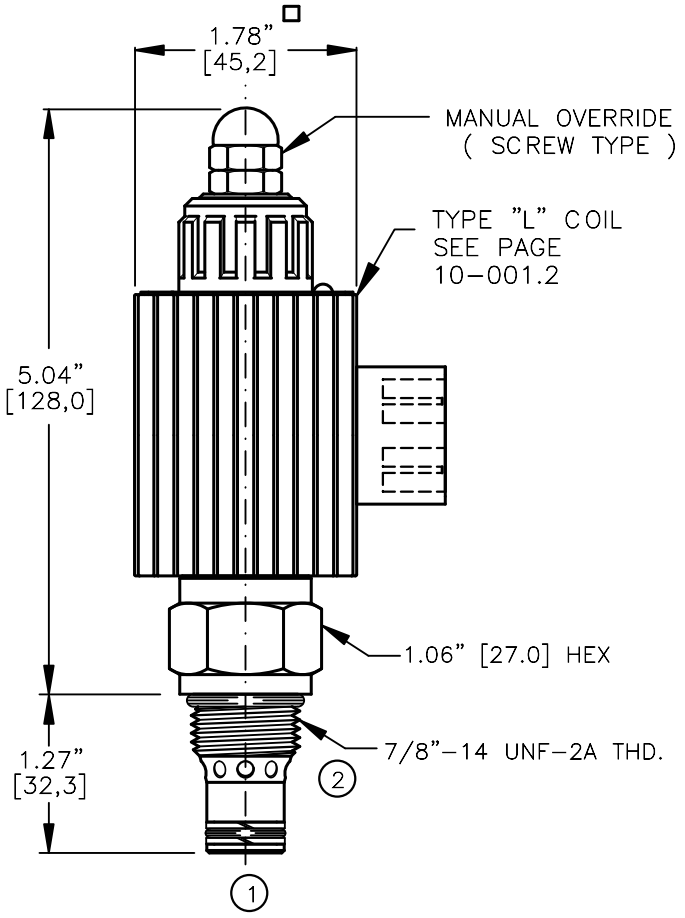
PROPORTIONAL, NORMALLY CLOSED OR NORMALLY OPEN, IN-LINE, NON-COMPENSATED FLOW CONTROL VALVE.



UL approved coil, IP68 and IP69K rated when used with waterproof connector.

TORQUE:
Steel = 55/60 Ft-Lb. [74/81 Nm]
Aluminum = 35/40 Ft-Lb. [47/54 Nm]





NOTES:
1. FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-012.1
2. SOLENOIDS AVAILABLE WITH DIODES - CONSULT FACTORY.

PFCV-10-X-X-XX-X-X-XXX X

BASIC

SIZE
10 = 7/8"-14UNF

SEALS
N = BUNA "N"
V = VITON

STYLE
C = NORMALLY CLOSED
O = NORMALLY OPEN

REGULATED FLOW
04 = 0 TO 4.0 GPM
08 = 0 TO 8.0 GPM
12 = 0 TO 12.0 GPM
16 = 0 TO 16.0 GPM

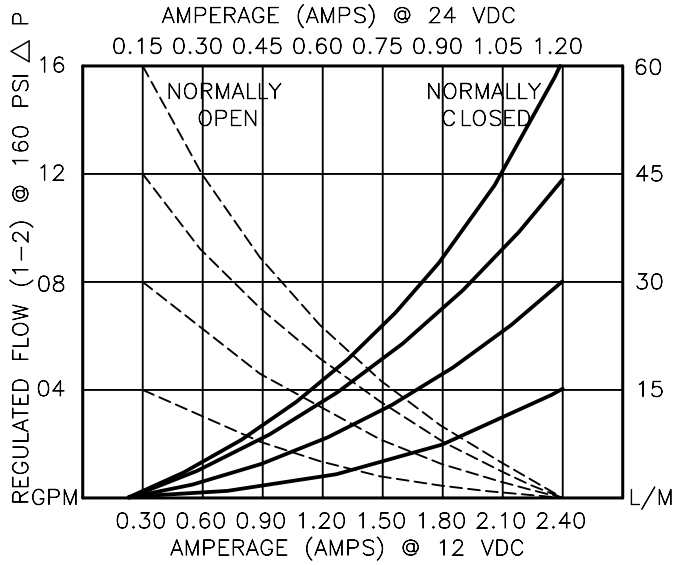
"A" = ALUM. HOUSING
"S" = STEEL HOUSING

PORTS
0 = CARTRIDGE ONLY
02BX = G 1/4" BSPP
03BX = G 3/8" BSPP
06TX = SAE - #6
08TX = SAE - #8

ADJUSTMENT OPTIONS
0 = NONE
M = MANUAL OVERRIDE

VOLTAGE AMPS
12D = 12 VDC 3.00
24D = 24 VDC 1.50

TERMINALS
L = 18GA. 24" LEADS
T = SPADE TERM.
B = BOLT TERM.
G = DIN43650
W = WEATHER-PACK
D = DEUTSCH-DT04-2P
M = METRI-PACK CONN.



BUCHER hydraulics

PROPORTIONAL, IN–LINE TYPE, FLOW CONTROL VALVE.

DESCRIPTION

This valve is a cartridge style, electro–hydraulic, proportional, in–line (RESTRICTIVE) type, hydraulic non–compensated flow control.
Regulated flow Normally Closed 0 to 16.0 GPM [0 to 61,0 L/m] max.
Normally Open 16.0 to 0 GPM [61,0 to 0 L/m] @ 160 PSI DELTA P.
Flow is proportional to the current input.

OPERATIONS

This unit is a direct acting (NO PILOT FLOW), electro hydraulic, pro–portional, non–compensated, flow control valve. When the coil is energized the armature moves the metering orifice to open or to closed position against a precision bias spring varying the flow.
When current is increased or decreased to the coil, the flow will increase or decrease proportionally.
IN THE EVENT OF POWER FAILURE THE VALVE WILL CLOSE OR OPEN DEPENDING ON THE VALVE VERSION.

FEATURES AND BENEFITS

Continuous–duty, very low heat rise & waterproof solenoid coil.
Interchangeable solenoid coils & termination options available.
Hardened precision fitted spool & sleeve provides reliable, long life.
Very efficient wet – armature solenoid core tube construction.
All external carbon steel parts are plated for longer life against the elements.
All cartridge valves are 100% functionally tested.
Industry common cavity.

BUCHER hydraulics

PROPORTIONAL, IN–LINE TYPE, FLOW CONTROL VALVE.

SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]
PROOF PRESSURE: 10,000 PSI [700 Bar]
REGULATED FLOW: 16.0 GPM [61,0 L/m] Max. See performance chart.
INTERNAL LEAKAGE: 20 cu.in/min [330 cc/m] @ 160 PSI DELTA P [11 Bar]
VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.
5000 PSI [350 Bar] = Steel – Unplated.
OPERATING TEMPERATURE: –40° to +250° F. [–40° to +120° C.]
OPERATING MEDIA: All general purpose hydraulic fluids such as MIL–H–5606, SAE–#10, SAE–#20, etc.
RESPONSE: The most efficient method to control this valve is with current control and a 50 Hz dither.
POWER REQUIREMENTS: 12 VDC, Operating current 0.4 to 2.4 AMPS.
24 VDC, Operating current 0.2 to 1.2 AMPS.
SEAL KIT: SKN–1022 Buna "N"
SKV–1022 Viton
INSTALLATION: Flow 1–2 preferred, Max Flow 2–1 lower than shown on graph. Use undercuts in cavity to obtain max rated flow when using a pressure compensator in series. Pressure drop across valve must not exceed 300 PSI [21] bar.

WEIGHT: 0.74 lbs [0,34 kg] cartridge only.
1.09 lbs [0,50 kg] coil & housing.
0.35 lbs [0,16 kg] aluminum body.
1.20 lbs [0,54 kg] steel body.
VALVE CAVITY: #C1020, See Page 0–012.0.

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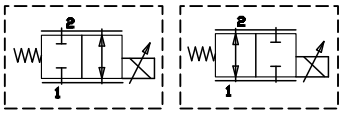
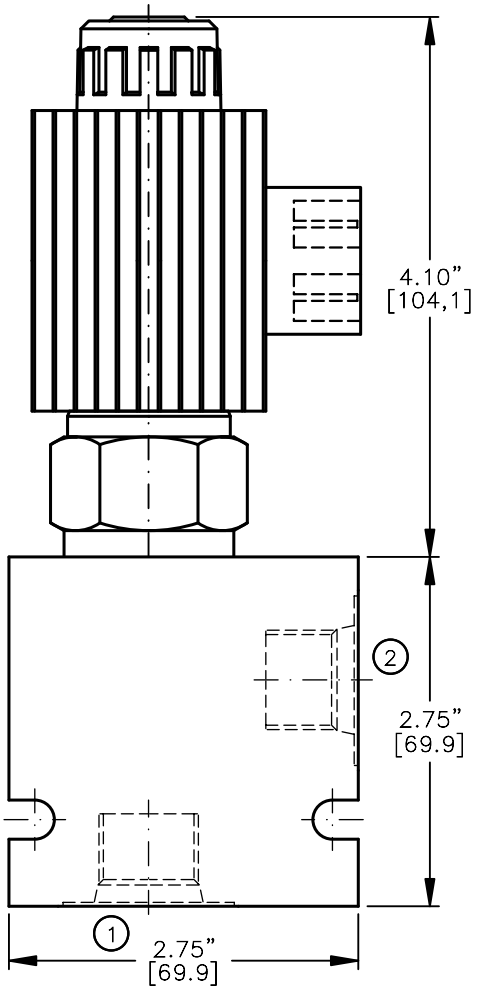
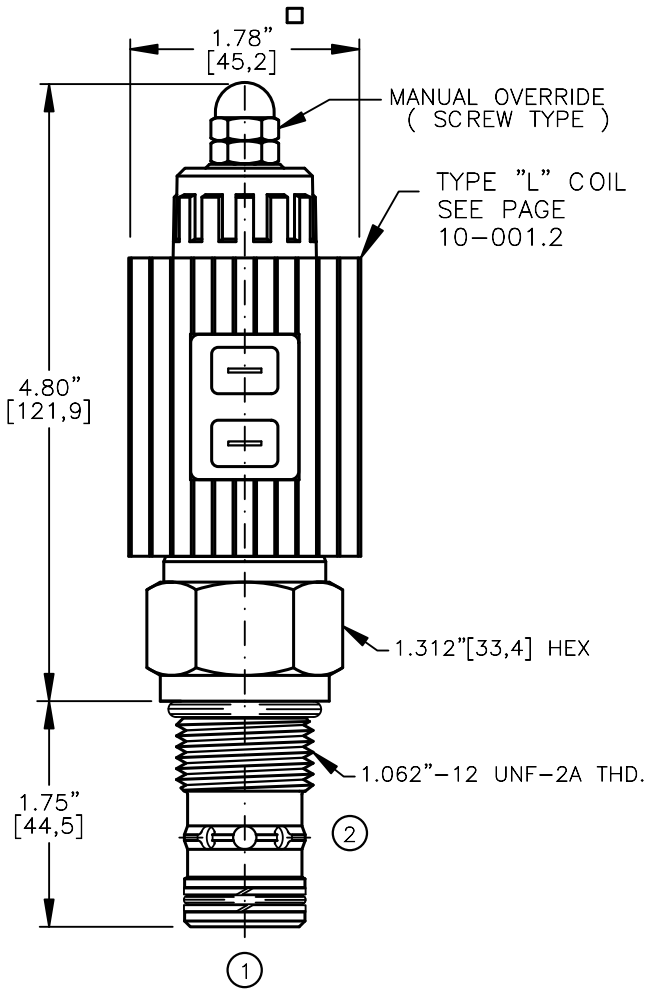
BUCHER hydraulics

PROPORTIONAL, NORMALLY CLOSED OR NORMALLY OPEN, IN–LINE, NON–COMPENSATED FLOW CONTROL VALVE.



UL approved coil, IP68 and IP69K rated when used with waterproof connector.





TORQUE:
Steel = 70/75 Ft–Lb. [95/102 Nm]
Aluminum = 55/60 Ft–Lb. [74/81 Nm]

PFCV–12–X–X–XX–X–X–XXX X

BASIC

SIZE
12 = 1.062"–12UNF

SEALS
N = BUNA "N"
V = VITON

STYLE
C = NORMALLY CLOSED
O = NORMALLY OPEN

REGULATED FLOW
06 = 0 TO 6.0 GPM
12 = 0 TO 12.0 GPM
18 = 0 TO 18.0 GPM
24 = 0 TO 24.0 GPM

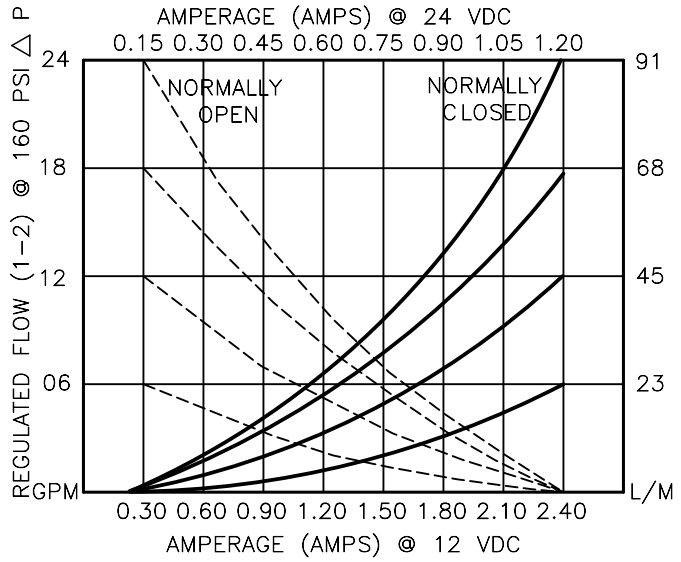
"A" = ALUM. HOUSING
"S" = STEEL HOUSING

PORTS
0 = CARTRIDGE ONLY
04BX = G 1/2" BSPP
06BX = G 3/4" BSPP
10TX = SAE – #10
12TX = SAE – #12

ADJUSTMENT OPTIONS
0 = NONE
M = MANUAL OVERRIDE

VOLTAGE AMPS
12D = 12 VDC 3.00
24D = 24 VDC 1.50

TERMINALS
L = 18GA. 24" LEADS
T = SPADE TERM.
B = BOLT TERM.
G = DIN43650
W = WEATHER–PACK
D = DEUTSCH–DT04–2P
M = METRI–PACK CONN.



BUCHER hydraulics

PROPORTIONAL, IN–LINE TYPE, FLOW CONTROL VALVE.

DESCRIPTION

This valve is a cartridge style, electro–hydraulic, proportional, in–line (RESTRICTIVE) type, hydraulic non–compensated flow control. Regulated flow Normally Closed 0 to 24.0 GPM [0 to 91,2 L/M] max. Normally Open 24.0 to 0 GPM [91,2 to 0 L/m] @ 160 PSI DELTA P. Flow is proportional to the current input.

OPERATIONS

This unit is a direct acting (NO PILOT FLOW), electro–hydraulic, pro–portional, non–compensated, flow control valve. When the coil is energized the armature moves the metering orifice to open or to closed position against a precision bias spring varying the flow. When current is increased or decreased to the coil the flow will increase or decrease proportionally.
IN THE EVENT OF POWER FAILURE THE VALVE WILL CLOSE OR OPEN DEPENDING ON THE VALVE VERSION.

FEATURES AND BENEFITS

Continuous–duty, very low heat rise & waterproof solenoid coil.
Interchangeable solenoid coils & terminations options available.
Hardened precision fitted spool & sleeve provides reliable, long life.
Very efficient wet – armature solenoid core tube construction.
All external carbon steel parts are plated for longer life against the elements.
All cartridge valves are 100% functionally tested.

BUCHER hydraulics

PROPORTIONAL, IN–LINE TYPE, FLOW CONTROL VALVE.

SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]
PROOF PRESSURE: 10,000 PSI [700 Bar]
REGULATED FLOW: 25.0 GPM [94,5 l/m] Max. See performance chart.
INTERNAL LEAKAGE: 30 cu.in/min [495 cc/m] @ 160 PSI DELTA P [11 Bar]
VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.
5000 PSI [350 Bar] = Steel – Unplated.
OPERATING TEMPERATURE: –40° to +250° F. [–40° to +120° C.]
OPERATING MEDIA: All general purpose hydraulic fluids such as MIL–H–5606, SAE–#10, SAE–#20, etc.
RESPONSE: The most efficient method to control this valve is with current control and a 50 Hz dither.
POWER REQUIREMENTS: 12 VDC, Operating current 0.4 to 2.4 AMPS.
24 VDC, Operating current 0.2 to 1.2 AMPS.
SEAL KIT: SKN–1222 Buna "N"
SKV–1222 Viton
INSTALLATION: Flow 1–2 preferred, Max Flow 2–1 lower than shown on graph. Use undercuts in cavity to obtain max rated flow when using a pressure compensator in series. Pressure drop across valve must not exceed 300 PSI [21] bar.

WEIGHT: 0.84 lbs [0,38 kg] cartridge only.
1.09 lbs [0,50 kg] coil & housing.
1.10 lbs [0,50 kg] aluminum body.
4.20 lbs [1,90 kg] steel body.
VALVE CAVITY: #C1220, See Page 0–013.0.

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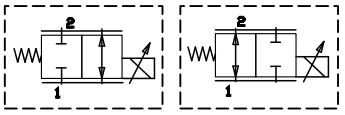
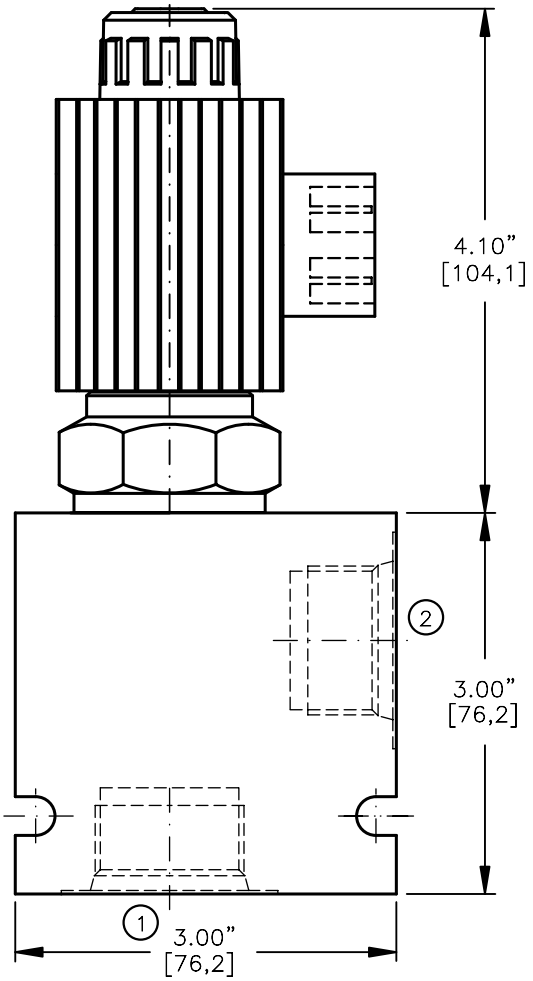
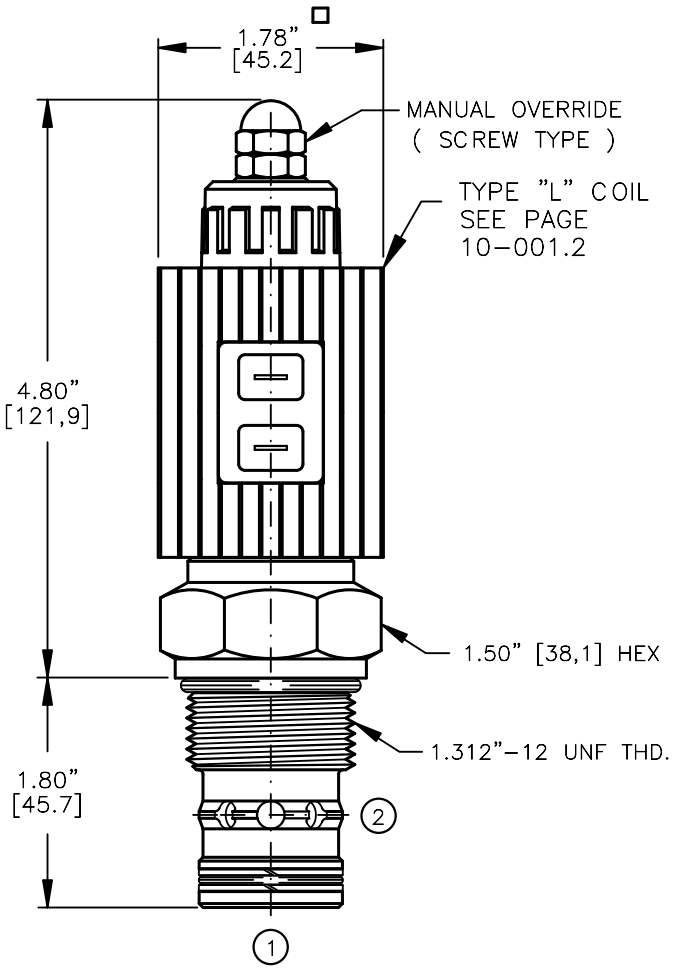
BUCHER hydraulics

PROPORTIONAL, NORMALLY CLOSED OR NORMALLY OPEN, IN-LINE, NON-COMPENSATED FLOW CONTROL VALVE.



UL approved coil, IP68 and IP69K rated when used with waterproof connector.

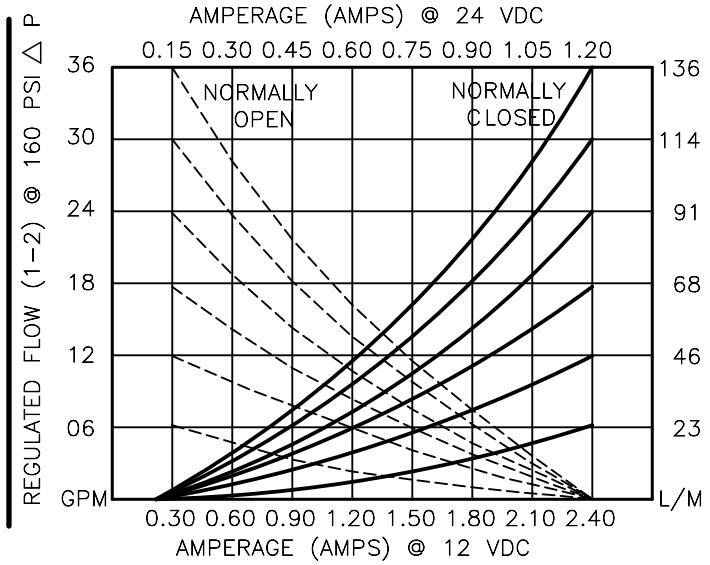




TORQUE:
Steel = 95/100 Ft-Lb. [129/136 Nm]
Aluminum = 70/75 Ft-Lb. [95/102 Nm]

PFCV-16-X-X-XX-X-X-XXX X

- BASIC
- SIZE: 16 = 1.312"-12UNF
- SEALS: N = BUNA "N", V = VITON
- STYLE: C = NORMALLY CLOSED, O = NORMALLY OPEN
- REGULATED FLOW: 06 = 0 TO 6.0 GPM, 12 = 0 TO 12.0 GPM, 18 = 0 TO 18.0 GPM, 24 = 0 TO 24.0 GPM, 30 = 0 TO 30.0 GPM, 36 = 0 TO 36.0 GPM
- "A" = ALUM. HOUSING, "S" = STEEL HOUSING
- PORTS: 0 = CARTRIDGE ONLY, 06BX = G 3/4" BSPP, 08BX = G 1" BSPP, 12TX = SAE - #12, 16TX = SAE - #16
- ADJUSTMENT OPTIONS: O = NONE, M = MANUAL OVERRIDE
- VOLTAGE AMPS: 12D = 12 VDC 3.00, 24D = 24 VDC 1.50
- TERMINALS: L = 18GA. 24" LEADS, T = SPADE TERM., B = BOLT TERM., G = DIN43650, W = WEATHER-PACK, D = DEUTSCH-DT04-2P, M = METRI-PACK CONN.



BUCHER hydraulics

PROPORTIONAL, IN–LINE TYPE, FLOW CONTROL VALVE.

DESCRIPTION

This valve is a cartridge style, electro–hydraulic, proportional, in–line (RESTRICTIVE) type, hydraulic non–compensated flow control.
Regulated flow Normally Closed 0 to 36.0 GPM [0 to 137,0 L/M] max.
Normally Open 36.0 to 0 GPM [137,0 to 0 L/m] @ 160 PSI DELTA P.
Flow is proportional to the current input.

OPERATIONS

This unit is a direct acting (NO PILOT FLOW), electro–hydraulic, proportional, non–compensated, flow control valve. When the coil is energized the armature moves the metering orifice to open or to closed position against a precision bias spring varying the flow.
When current is increased or decreased to the coil the flow will increase or decrease proportionally.

IN THE EVENT OF POWER FAILURE THE VALVE WILL CLOSE OR OPEN DEPENDING ON THE VALVE VERSION.

FEATURES AND BENEFITS

Continuous–duty, very low heat rise & waterproof solenoid coil.
Interchangeable solenoid coils & terminations options available.
Hardened precision fitted spool & sleeve provides reliable, long life.
Very efficient wet – armature solenoid core tube construction.
All external carbon steel parts are plated for longer life against the elements.
All cartridge valves are 100% functionally tested.
Industry common cavity.

BUCHER hydraulics

PROPORTIONAL, IN–LINE TYPE, FLOW CONTROL VALVE.

SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]
PROOF PRESSURE: 10,000 PSI [700 Bar]
REGULATED FLOW: 36.0 GPM [136,0 l/m] Max. See performance chart.
INTERNAL LEAKAGE: 40 cu.in/min [660 cc/m] @ 160 PSI DELTA P [11 Bar]
VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.
5000 PSI [350 Bar] = Steel – Unplated.
OPERATING TEMPERATURE: –40° to +250° F. [–40° to +120° C.]
OPERATING MEDIA: All general purpose hydraulic fluids such as MIL–H–5606, SAE–#10, SAE–#20, etc.
RESPONSE: The most efficient method to control this valve is with current control and a 50 Hz dither.
POWER REQUIREMENTS: 12 VDC, Operating current 0.4 to 2.4 AMPS.
24 VDC, Operating current 0.2 to 1.2 AMPS.
SEAL KIT: SKN–1622 Buna "N"
SKV–1622 Viton
INSTALLATION: Flow 1–2 preferred, Max Flow 2–1 lower than shown on graph. Use undercuts in cavity to obtain max rated flow when using a pressure compensator in series. Pressure drop across valve must not exceed 300 PSI [21] bar.
WEIGHT: 0.95 lbs [0,42 kg] cartridge only.
1.09 lbs [0,50 kg] coil & housing.
1.25 lbs [0,57 kg] aluminum body.
4.65 lbs [2,10 kg] steel body.
VALVE CAVITY: #C1620, See Page 0–014.0.

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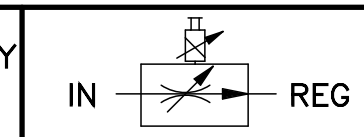
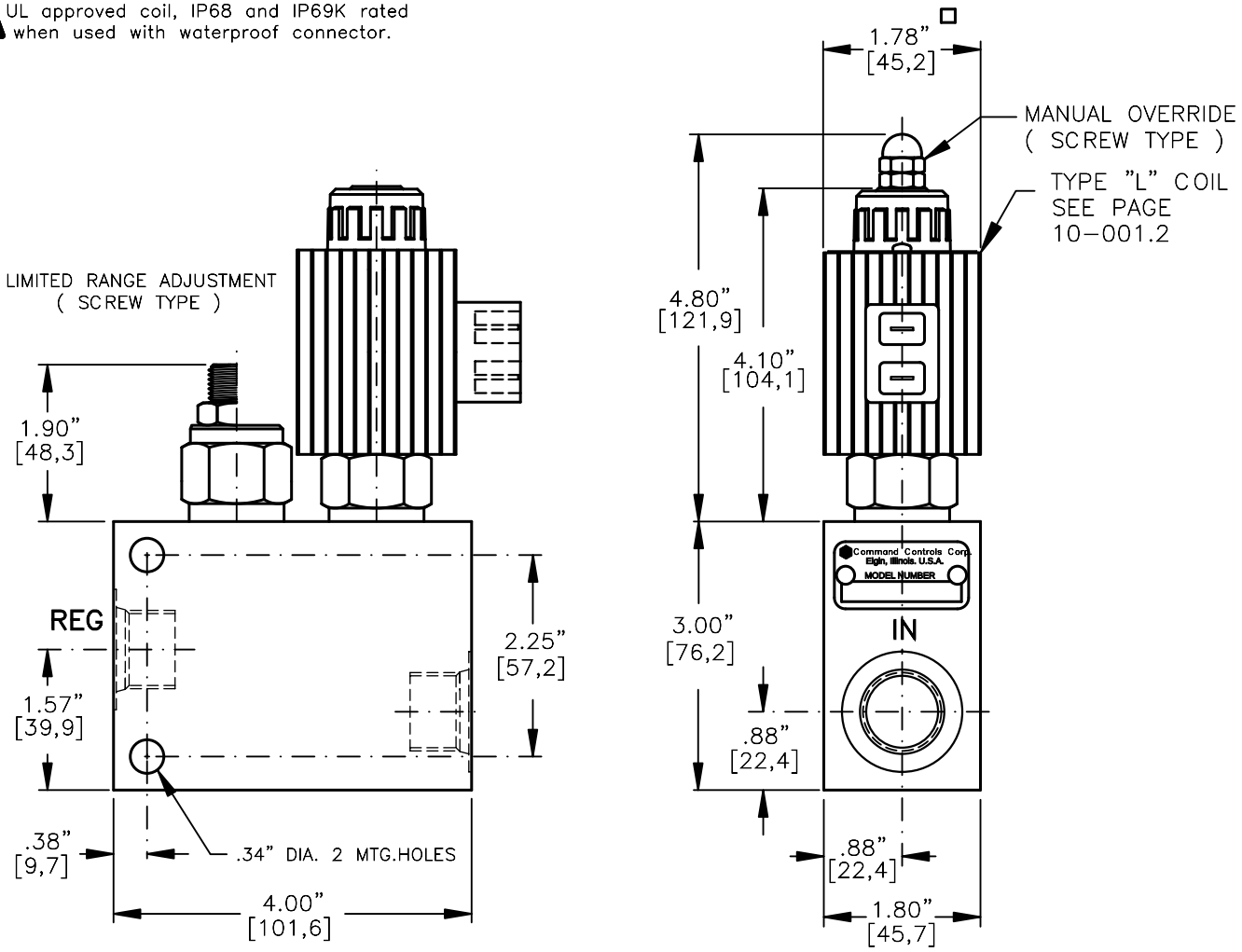
BUCHER hydraulics

PRESSURE COMPENSATED, NORMALLY CLOSED OR NORMALLY OPEN PROPORTIONAL, IN-LINE FLOW CONTROL VALVE.



UL approved coil, IP68 and IP69K rated when used with waterproof connector.



NOTES:
1. SOLENOIDS AVAILABLE WITH DIODES – CONSULT FACTORY.

PIFC-10-X-X-XX-X-X-X-XXX-XXX X

BASIC

SIZE
10= 7/8"-14UNF

SEALS
N = BUNA "N"
V = VITON

STYLE
C = NORMALLY CLOSED
O = NORMALLY OPEN

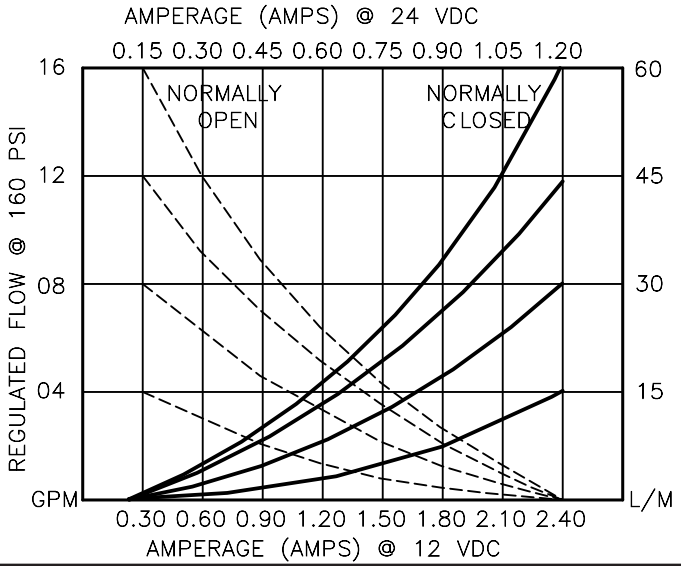
REGULATED FLOW
04 = 0 TO 4.0 GPM
08 = 0 TO 8.0 GPM
12 = 0 TO 12.0 GPM
16 = 0 TO 16.0 GPM

PORTS
10TX = SAE – #10
"A" = ALUM. HOUSING
"S" = STEEL HOUSING

ADJUSTMENT OPTIONS
O-F-100 = NONE
M-F-100 = MANUAL OVERRIDE
O-S-160 = LIMITED RANGE ADJ.
M-S-160 = BOTH MO/LTD ADJ

TERMINALS
L = 18GA. 24" LEADS
T = SPADE TERM.
B = BOLT TERM.
G = DIN43650
W = WEATHER-PACK
D = DEUTSCH-DT04-2P
M = METRI-PACK CONN.

VOLTAGE AMPS
12D = 12 VDC 3.00
24D = 24 VDC 1.50



BUCHER hydraulics

PRESSURE COMPENSATED, PROPORTIONAL, IN–LINE, FLOW CONTROL VALVE.

DESCRIPTION

This valve is an electro–hydraulic, proportional, in–line (Restrictive) type, pressure compensated, hydraulic flow control. Regulated flow Normally Closed 0 to 16.0 GPM, [0 to 61,0 L/m] max. Normally Open 16.0 to 0 GPM [61,0 to 0 L/m] is proportional to the current input, regardless of load or system pressure.

OPERATIONS

This unit is a direct acting (NO PILOT FLOW), electro–hydraulic, pro–portional, pressure compensated, flow control valve. When the coil is energized the armature moves the metering orifice open or close against a precision bias spring varying the flow. A pressure compensator spool (HYDROSTAT) modulates the flow at 160 PSI/11,0 Bar delta "P" providing the valve with a constant regulated flow regardless of load or system pressure. When current is increased or decreased to the coil; the flow will increase or decrease proportionally.

IN THE EVENT OF POWER FAILURE THE VALVE WILL CLOSE OR OPEN RESPECTIVELY.

FEATURES AND BENEFITS

Continuous–duty, very low heat rise & waterproof solenoid coil.
Interchangeable solenoid coils & terminations options available.
Hardened precision fitted spool & sleeve provides reliable, long life.
Very efficient wet – armature solenoid core tube construction.
All external carbon steel parts are plated for longer life against the elements.
All valves are 100% functionally tested.

PRESSURE COMPENSATED, PROPORTIONAL, IN–LINE, FLOW CONTROL VALVE.

SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]
PROOF PRESSURE: 10,000 PSI [700 Bar]
REGULATED FLOW: 16.0 GPM [61,0 L/m] Max. See performance chart.
INTERNAL LEAKAGE: 15 cu.in/min [245 cc/m] @ 5,000 PSI [350 Bar]
VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.
5000 PSI [350 Bar] = Steel – Unplated.
OPERATING TEMPERATURE: –40° to +250° F. [–40° to +120° C.]
OPERATING MEDIA: All general purpose hydraulic fluids such as MIL–H–5606, SAE–#10, SAE–#20, etc.
RESPONSE: The most efficient method to control this valve is with current control and a 50 Hz dither.
POWER REQUIREMENTS: 12 VDC, Operating current 0.4 to 2.4 AMPS.
24 VDC, Operating current 0.2 to 1.2 AMPS.
SEAL KIT: Buna "N": SKN–1022, SKN–1032
VITON: SKV–1022, SKV–1032
INSTALLATION: No restrictions.
WEIGHT: 4.58 lbs [2,09 kg]. aluminum body.
7.65 lbs [3,48 kg]. steel body.

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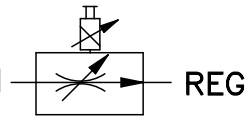
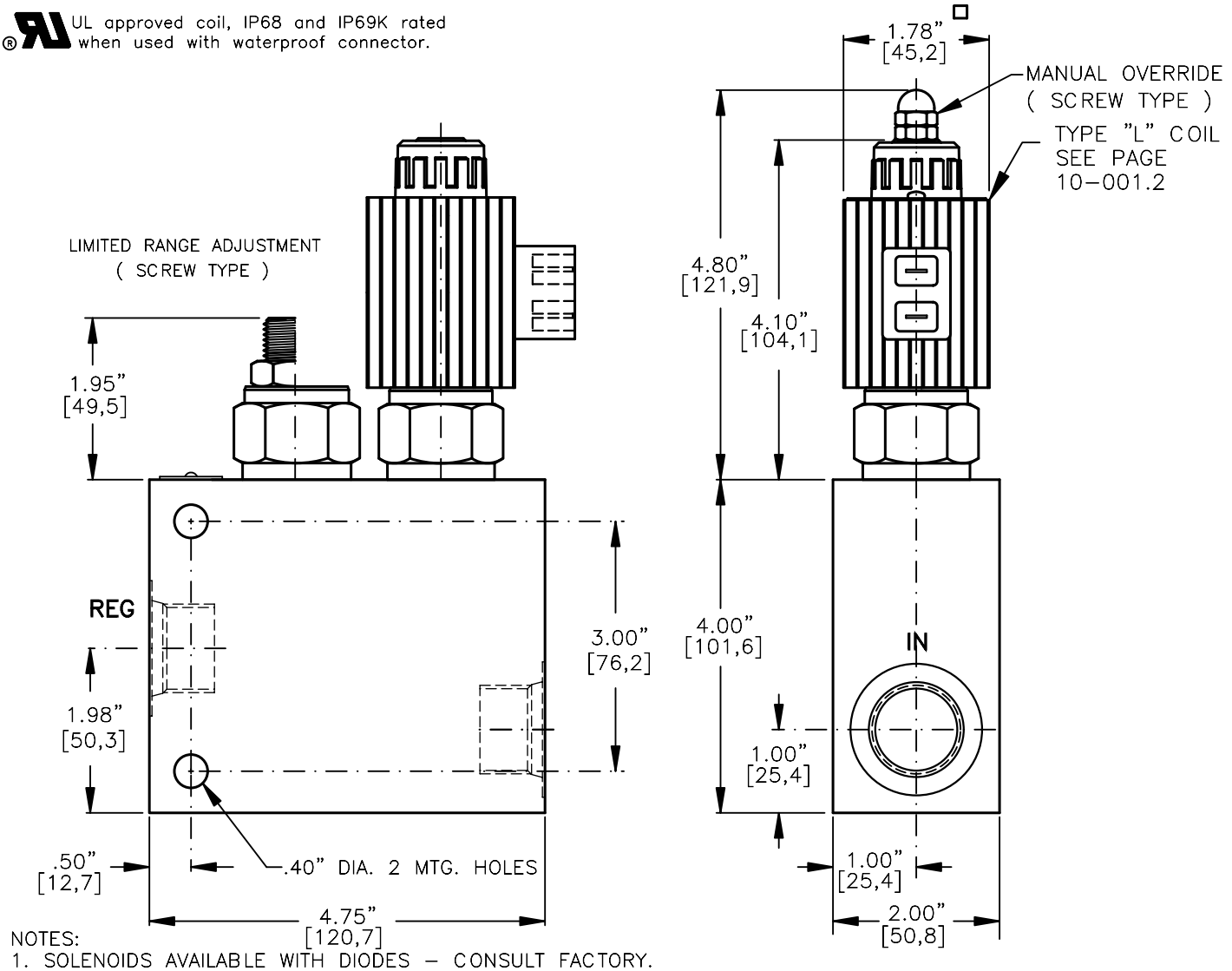
PIFC-12

BUCHER hydraulics

PRESSURE COMPENSATED, NORMALLY CLOSED OR NORMALLY OPEN PROPORTIONAL, IN–LINE FLOW CONTROL VALVE.



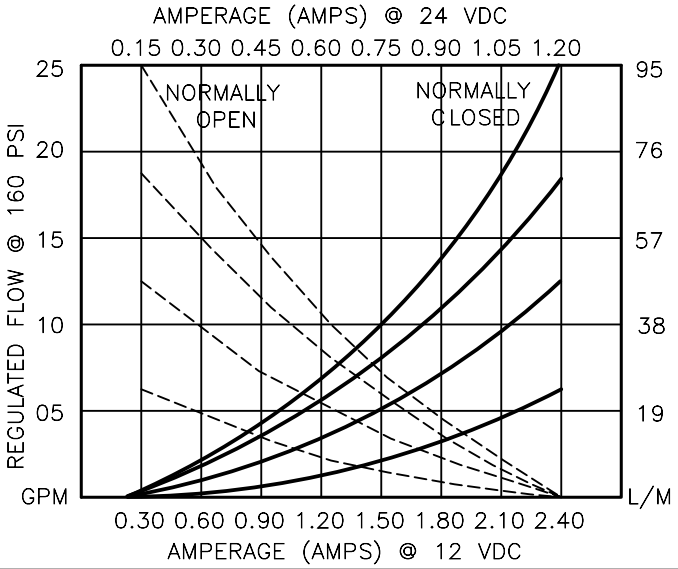
UL approved coil, IP68 and IP69K rated when used with waterproof connector.



NOTES:
1. SOLENOIDS AVAILABLE WITH DIODES – CONSULT FACTORY.

PIFC–12–X–X–XX–X–X–X–XXX–XXX X

- BASIC
- SIZE
  12=1.062"–12UNF
- SEALS
  N = BUNA "N"
  V = VITON
- STYLE
  C = NORMALLY CLOSED
  O = NORMALLY OPEN
- REGULATED FLOW
  06 = 0 TO 6.0 GPM
  12 = 0 TO 12.0 GPM
  18 = 0 TO 18.0 GPM
  24 = 0 TO 24.0 GPM
- ADJUSTMENT OPTIONS
  O–F–100 = NONE
  M–F–100 = MANUAL OVERRIDE
  O–S–160 = LIMITED RANGE ADJ
  M–S–160 = BOTH MO/LTD ADJ
- PORTS
  12TX = SAE – #12
  "A" = ALUM. HOUSING
  "S" = STEEL HOUSING
- TERMINALS
  L =18GA. 24" LEADS
  T =SPADE TERM.
  B =BOLT TERM.
  G =DIN43650
  W =WEATHER–PACK
  D =DEUTSCH–DT04–2P
  M =METRI–PACK CONN.
- VOLTAGE AMPS
  12D = 12 VDC 3.00
  24D = 24 VDC 1.50



BUCHER hydraulics

PRESSURE COMPENSATED, PROPORTIONAL, IN–LINE, FLOW CONTROL VALVE.

DESCRIPTION

This valve is an electro–hydraulic, proportional, in–line (Restrictive) type, pressure compensated, hydraulic flow control. Regulated flow Normally Closed 0 to 24.0 GPM, [0 to 91,2 L/M] max. Normally Open 24.0 to 0 GPM [91,2 to 0 L/M] is proportional to the current input, regardless of load or system pressure.

OPERATIONS

This unit is a direct acting (NO PILOT FLOW), electro–hydraulic, pro–portional, pressure compensated, flow control valve. When the coil is energized the armature moves the metering orifice open or close against a precision bias spring varying the flow. A pressure compensator spool (HYDROSTAT) modulates the flow at 160 PSI/11,0 Bar delta "P" providing the valve with a constant regulated flow regardless of load or system pressure. When current is increased or decreased to the coil; the flow will increase or decrease proportionally.

IN THE EVENT OF POWER FAILURE THE VALVE WILL CLOSE OR OPEN RESPECTIVELY.

FEATURES AND BENEFITS

Continuous–duty, very low heat rise & waterproof solenoid coil.
Interchangeable solenoid coils & terminations options available.
Hardened precision fitted spool & sleeve provides reliable, long life.
Very efficient wet – armature solenoid core tube construction.
All external carbon steel parts are plated for longer life against the elements.
All valves are 100% functionally tested.

BUCHER hydraulics

PRESSURE COMPENSATED, PROPORTIONAL, IN–LINE, FLOW CONTROL VALVE.

SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]
PROOF PRESSURE: 10,000 PSI [700 Bar]
REGULATED FLOW: 24.0 GPM [90,7 L/M] Max. See performance chart.
INTERNAL LEAKAGE: 30 cu.in/min [495 cc/m] @ 5,000 PSI [350 Bar]
VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.
5000 PSI [350 Bar] = Steel – Unplated.
OPERATING TEMPERATURE: –40° to +250° F. [–40° to +120° C.]
OPERATING MEDIA: All general purpose hydraulic fluids such as MIL–H–5606, SAE–#10, SAE–#20, etc.
RESPONSE: The most efficient method to control this valve is with current control and a 50 Hz dither.
POWER REQUIREMENTS: 12 VDC, Operating current 0.4 to 2.4 AMPS.
24 VDC, Operating current 0.2 to 1.2 AMPS.
SEAL KIT: Buna "N": SKN–1222, SKN–1232
VITON: SKV–1222, SKV–1232
INSTALLATION: No restrictions.
WEIGHT: 5.52 lbs [2,51 kg]. aluminum body.
15.60 lbs [7,10 kg]. steel body.

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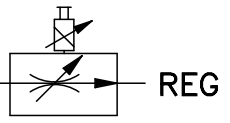
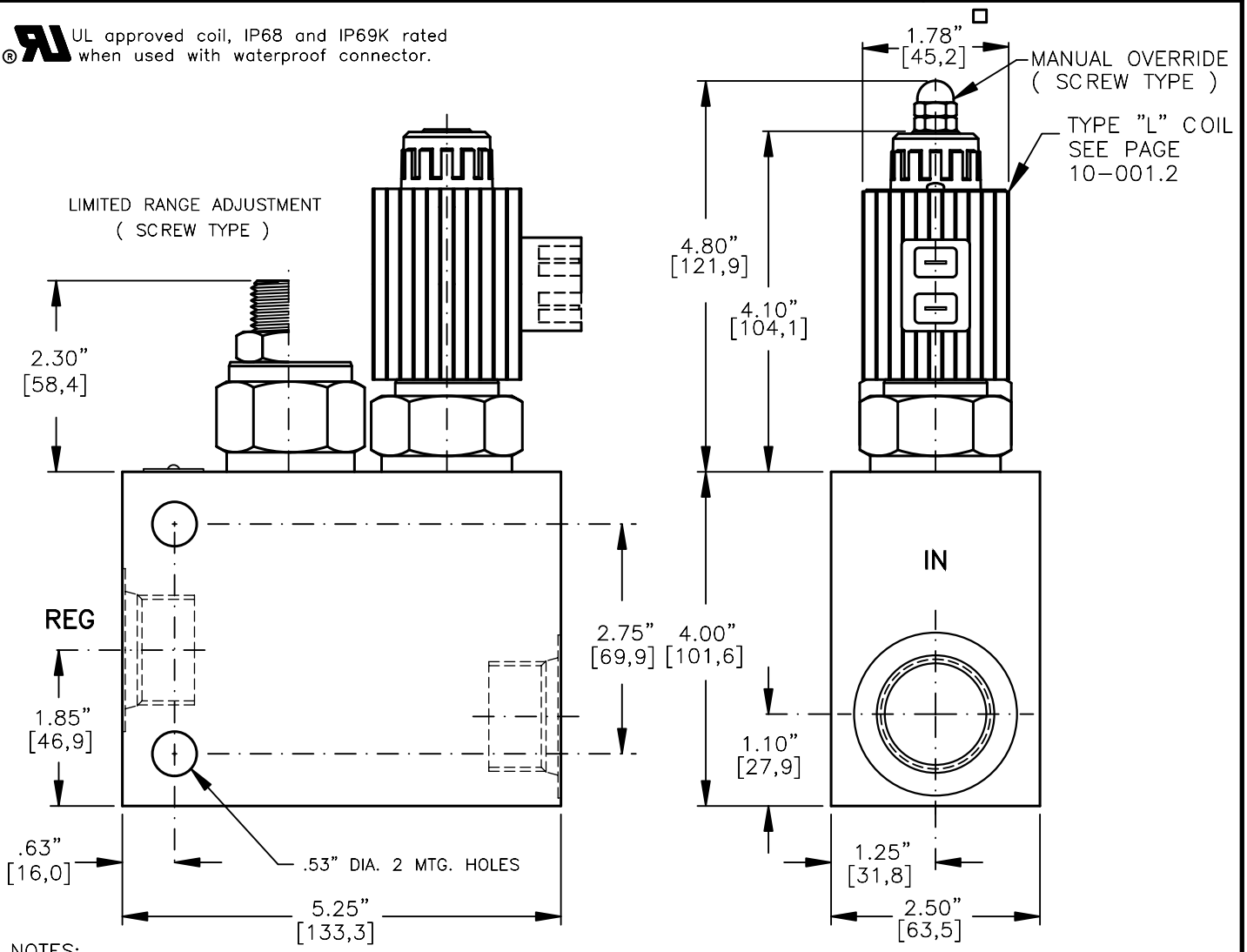
BUCHER hydraulics

PRESSURE COMPENSATED, NORMALLY CLOSED OR NORMALLY OPEN PROPORTIONAL, IN-LINE FLOW CONTROL VALVE.



UL approved coil, IP68 and IP69K rated when used with waterproof connector.



NOTES:
1. SOLENOIDS AVAILABLE WITH DIODES – CONSULT FACTORY.

PIFC-16-X-X-XX-X-X-X-XXX-XXX X

BASIC

SIZE
16=1.312"-12UNF

SEALS
N = BUNA "N"
V = VITON

STYLE
C = NORMALLY CLOSED
O = NORMALLY OPEN

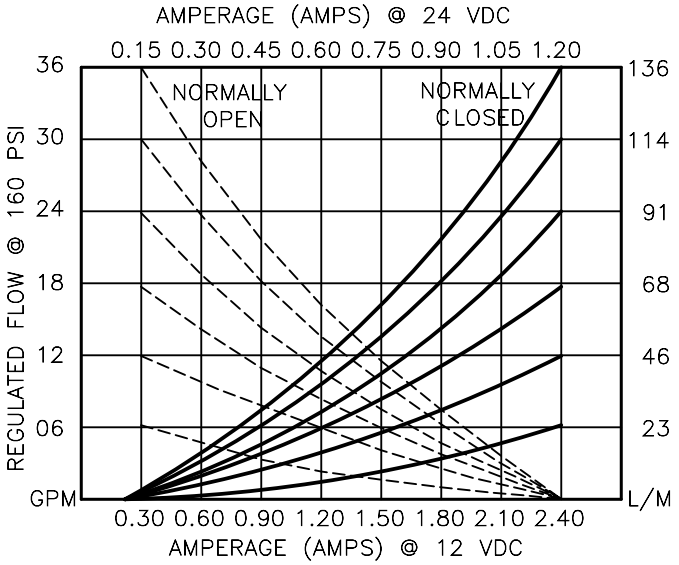
REGULATED FLOW
06 = 0 TO 6.0 GPM
12 = 0 TO 12.0 GPM
18 = 0 TO 18.0 GPM
24 = 0 TO 24.0 GPM
30 = 0 TO 30.0 GPM
36 = 0 TO 36.0 GPM

PORTS
16TX = SAE – #16
"A" = ALUM. HOUSING
"S" = STEEL HOUSING

ADJUSTMENT OPTIONS
O-F-100 = NONE
M-F-100 = MANUAL OVERRIDE
O-S-180 = LIMITED RANGE ADJ.
M-S-180 = BOTH MO/LTD ADJ

TERMINALS
L =18GA. 24" LEADS
T =SPADE TERM.
B =BOLT TERM.
G =DIN43650
W =WEATHER-PACK
D =DEUTSCH-DT04-2P
M =METRI-PACK CONN.

VOLTAGE AMPS
12D = 12 VDC 3.00
24D = 24 VDC 1.50



BUCHER hydraulics

PRESSURE COMPENSATED, PROPORTIONAL, IN–LINE, FLOW CONTROL VALVE.

DESCRIPTION

This valve is an electro–hydraulic, proportional, in–line (Restrictive) type, pressure compensated, hydraulic flow control. Regulated flow Normally Closed 0 to 36.0 GPM, [0 to 137,0 L/M] max. Normally Open 36.0 to 0 GPM [137,0 to 0 L/M] is proportional to the current input, regardless of load or system pressure.

OPERATIONS

This unit is a direct acting (NO PILOT FLOW), electro–hydraulic, pro–portional, pressure compensated, flow control valve. When the coil is energized the armature moves the metering orifice open or close against a precision bias spring varying the flow. A pressure compensator spool (HYDROSTAT) modulates the flow at 160 PSI/11,0 Bar delta "P" providing the valve with a constant regulated flow regardless of load or system pressure. When current is increased or decreased to the coil; the flow will increase or decrease proportionally.

IN THE EVENT OF POWER FAILURE THE VALVE WILL CLOSE OR OPEN RESPECTIVELY.

FEATURES AND BENEFITS

Continuous–duty, very low heat rise & waterproof solenoid coil.
Interchangeable solenoid coils & terminations options available.
Hardened precision fitted spool & sleeve provides reliable, long life.
Very efficient wet – armature solenoid core tube construction.
All external carbon steel parts are plated for longer life against the elements.
All valves are 100% functionally tested.

BUCHER hydraulics

PRESSURE COMPENSATED, PROPORTIONAL, IN–LINE, FLOW CONTROL VALVE.

SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]
PROOF PRESSURE: 10,000 PSI [700 Bar]
REGULATED FLOW: 36.0 GPM [136,0 L/M] Max. See performance chart.
INTERNAL LEAKAGE: 40 cu.in/min [660 cc/m] @ 5,000 PSI [350 Bar]
VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.
5000 PSI [350 Bar] = Steel – Unplated.
OPERATING TEMPERATURE: –40° to +250° F. [–40° to +120° C.]
OPERATING MEDIA: All general purpose hydraulic fluids such as MIL–H–5606, SAE–#10, SAE–#20, etc.
RESPONSE: The most efficient method to control this valve is with current control and a 50 Hz dither.
POWER REQUIREMENTS: 12 VDC, Operating current 0.4 to 2.4 AMPS.
24 VDC, Operating current 0.2 to 1.2 AMPS.
SEAL KIT: Buna "N": SKN–1622, SKN–1632
VITON: SKV–1622, SKV–1632
INSTALLATION: No restrictions.
WEIGHT: 7.42 lbs [3,37 kg]. aluminum body.
21.70 lbs [9,86 kg]. steel body.

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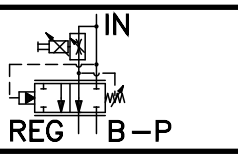
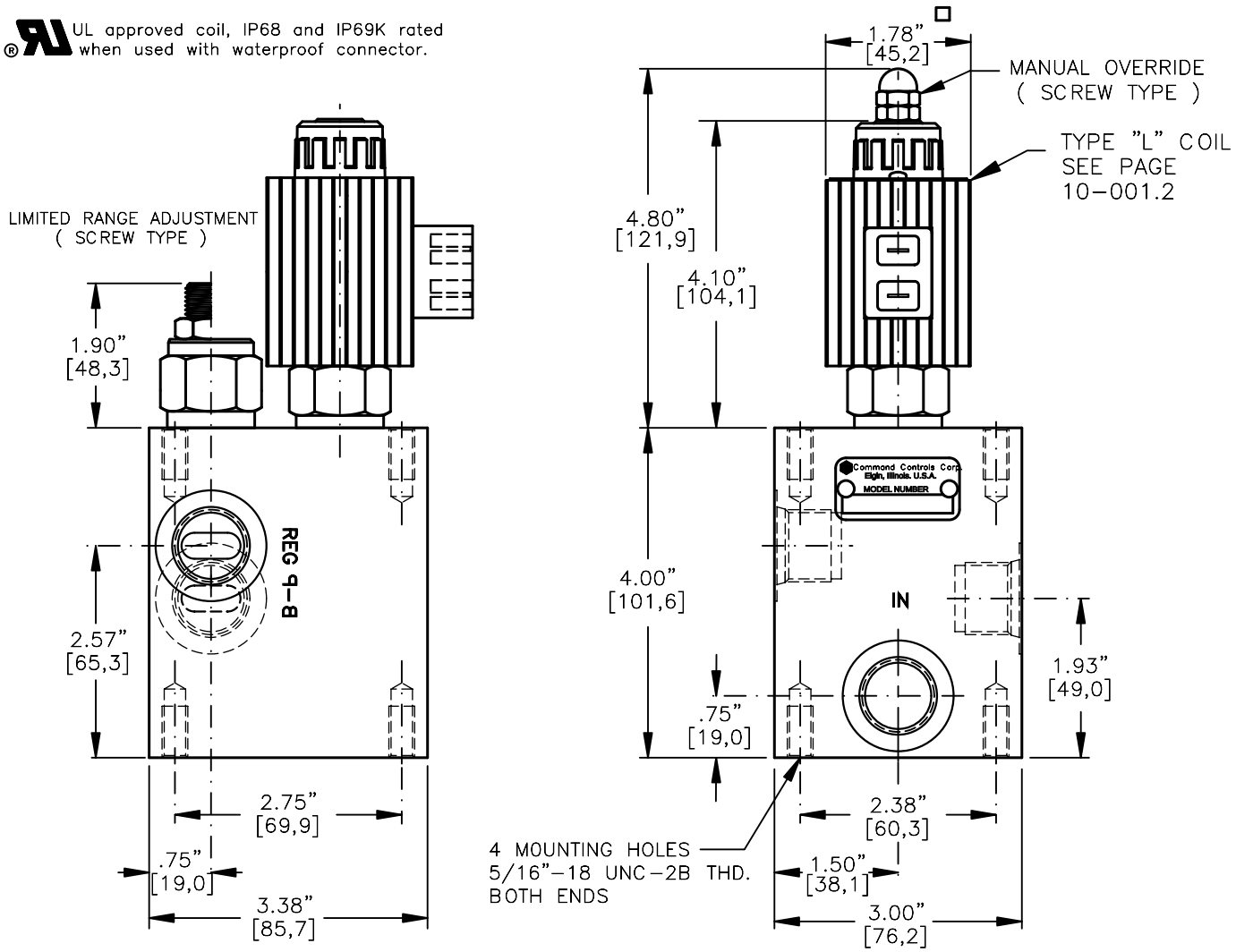
BUCHER hydraulics

PRESSURE COMPENSATED, NORMALLY CLOSED OR NORMALLY OPEN PROPORTIONAL, PRIORITY FLOW CONTROL VALVE.



UL approved coil, IP68 and IP69K rated when used with waterproof connector.



NOTES:
1. SOLENOIDS AVAILABLE WITH DIODES – CONSULT FACTORY.

PBFC–10–X–X–XX–X–X–X–XXX–XXX X

BASIC

SIZE
10 = 7/8"–14UNF

SEALS
N = BUNA "N"
V = VITON

STYLE
C = NORMALLY CLOSED
O = NORMALLY OPEN

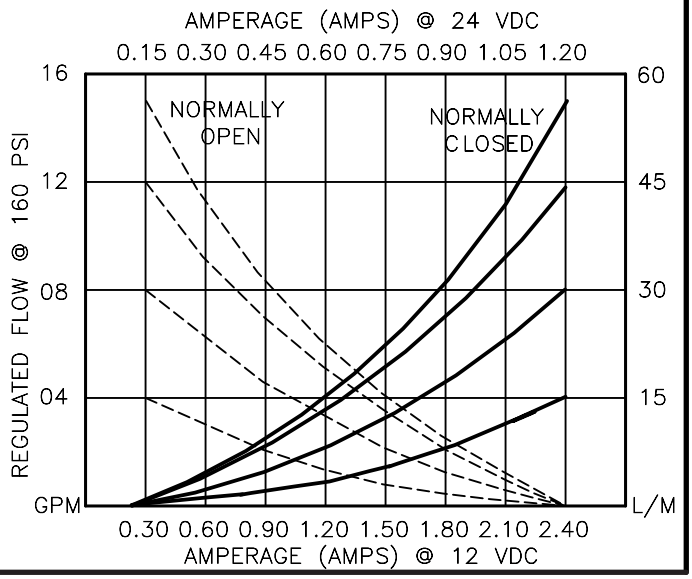
REGULATED FLOW
04 = 0 TO 4.0 GPM
08 = 0 TO 8.0 GPM
12 = 0 TO 12.0 GPM
16 = 0 TO 16.0 GPM

ADJUSTMENT OPTIONS
O–F–100 = NONE
M–F–100 = MANUAL OVERRIDE
O–S–160 = LIMITED RANGE ADJ.
M–S–160 = BOTH MO/LTD ADJ

PORTS
10TX = SAE – #10
"A" = ALUM. HOUSING
"S" = STEEL HOUSING

TERMINALS
L = 18GA. 24" LEADS
T = SPADE TERM.
B = BOLT TERM.
G = DIN43650
W = WEATHER–PACK
D = DEUTSCH–DT04–2P
M = METRI–PACK CONN.

VOLTAGE	AMPS
12D = 12 VDC	3.00
24D = 24 VDC	1.50



BUCHER hydraulics

PRESSURE COMPENSATED, PROPORTIONAL, PRIORITY FLOW CONTROL VALVE.

DESCRIPTION

This valve is an electro–hydraulic, proportional, priority (By–Pass) type, pressure compensated, hydraulic flow control. Regulated flow normally closed 0 to 16.0 GPM [0 to 61,0 L/m] or normally open 16.0 to 0 GPM [61,0 to 0 L/m] @ 160 PSI DELTA P. is proportional to the current input regardless of load or system pressure. After the priority flow is satisfied the excess flow is diverted to a secondary circuit or to tank. Maximum inlet flow is 25.0 GPM [95,0 L/m].

OPERATIONS

This unit is a direct acting (NO PILOT FLOW), electro–hydraulic, pro–portional, pressure compensated, flow control valve. When the coil is energized the armature moves the metering orifice open or closed against a precision bias spring varying the flow. A pressure compensator spool (HYDROSTAT) modulates the flow at 160 PSI/11,0 Bar delta "P" providing pressure. When current is increased or decreased to the coil; the flow will increase or decrease proportionally.

IN THE EVENT OF POWER FAILURE THE VALVE WILL CLOSE OR OPEN RESPECTIVELY.

FEATURES AND BENEFITS

Continuous–duty, very low heat rise & waterproof solenoid coil.
Interchangeable solenoid coils & terminations options available.
Hardened precision fitted spool & sleeve provides reliable, long life.
Very efficient wet – armature solenoid core tube construction.
All external carbon steel parts are plated for longer life against the elements.
All valves are 100% functionally tested.

BUCHER hydraulics

PRESSURE COMPENSATED, PROPORTIONAL, PRIORITY FLOW CONTROL VALVE.

SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]
PROOF PRESSURE: 10,000 PSI [700 Bar]
REGULATED FLOW: 16.0 GPM [61,0 L/m] Max. See performance chart.
INTERNAL LEAKAGE: 20 cu.in/min [330 cc/m] @ 5,000 PSI [350 Bar]
VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.
5000 PSI [350 Bar] = Steel – Unplated.
OPERATING TEMPERATURE: –40° to +250° F. [–40° to +120° C.]
OPERATING MEDIA: All general purpose hydraulic fluids such as MIL–H–5606, SAE–#10, SAE–#20, etc.
RESPONSE: The most efficient method to control this valve is with current control and a 50 Hz dither.
POWER REQUIREMENTS: 12 VDC, Operating current 0.4 to 2.4 AMPS.
24 VDC, Operating current 0.2 to 1.2 AMPS.
SEAL KIT: Buna "N": SKN–1022, SKN–1042
VITON: SKV–1022, SKV–1042
INSTALLATION: No restrictions.
WEIGHT: 4.58 lbs [2,09 kg]. aluminum body.
7.65 lbs [3,48 kg]. steel body.

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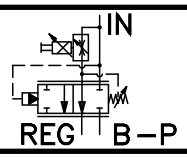
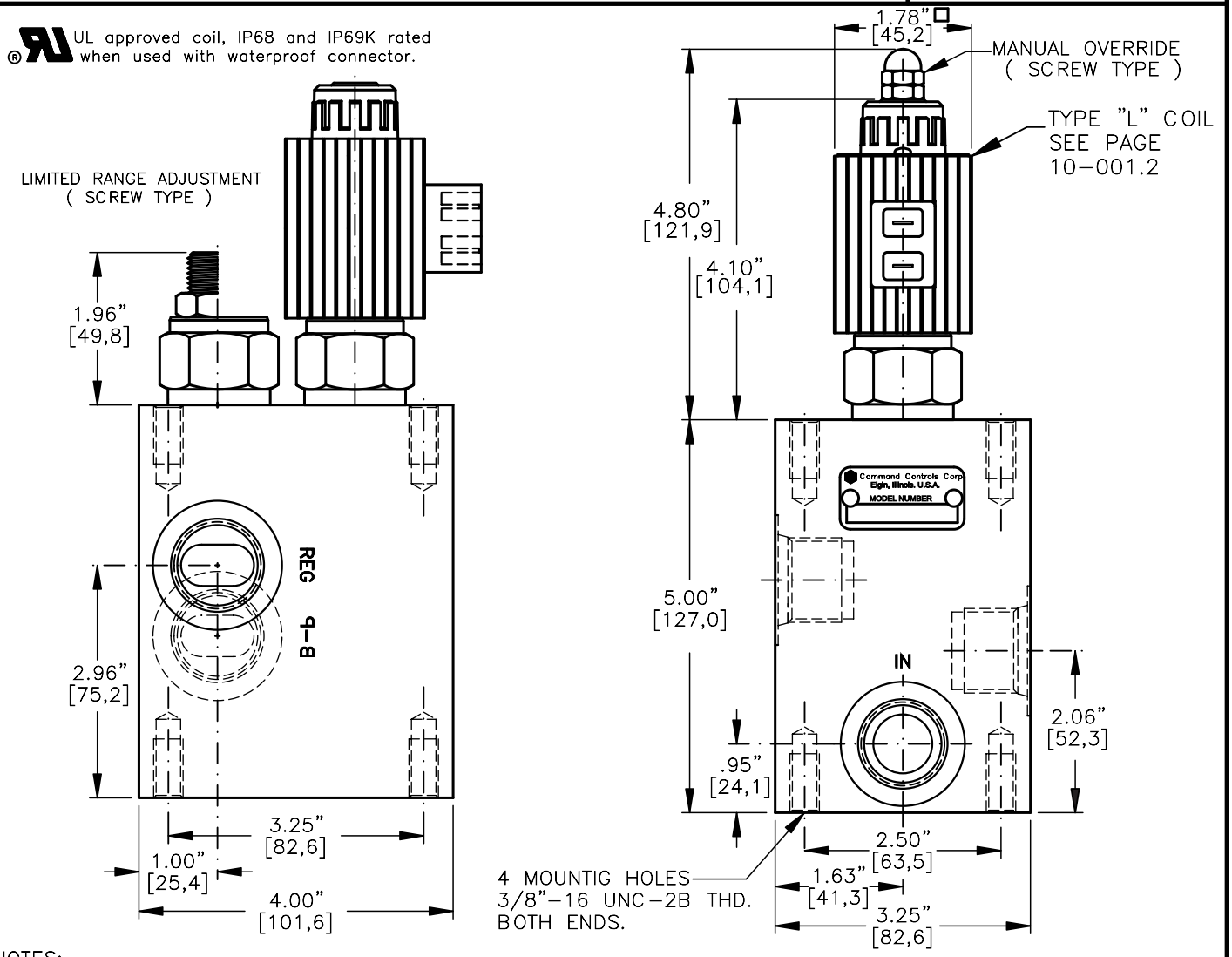
BUCHER hydraulics

PRESSURE COMPENSATED, NORMALLY CLOSED OR NORMALLY OPEN PROPORTIONAL, PRIORITY FLOW CONTROL VALVE.



UL approved coil, IP68 and IP69K rated when used with waterproof connector.



NOTES:
1. SOLENOIDS AVAILABLE WITH DIODES – CONSULT FACTORY.

PBFC–12–X–X–XX–X–X–X–XXX–XXX X

BASIC

SIZE
12=1.062"–12UNF

SEALS
N = BUNA "N"
V = VITON

STYLE
C = NORMALLY CLOSED
O = NORMALLY OPEN

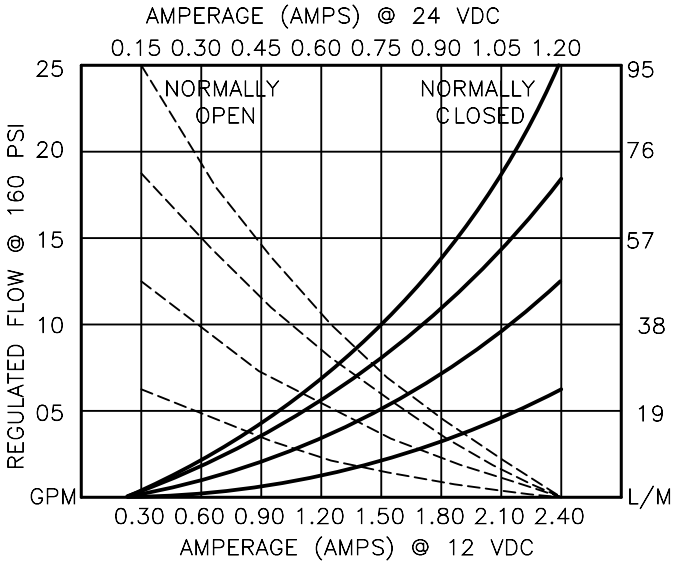
REGULATED FLOW
06 = 0 TO 6.0 GPM
12 = 0 TO 12.0 GPM
18 = 0 TO 18.0 GPM
24 = 0 TO 24.0 GPM

ADJUSTMENT OPTIONS
O–F–100 = NONE
M–F–100 = MANUAL OVERRIDE
O–S–160 = LIMITED RANGE ADJ.
M–S–160 = BOTH MO/LTD ADJ

PORTS
12TX = SAE – #12
"A" = ALUM. HOUSING
"S" = STEEL HOUSING

TERMINALS
L = 18GA. 24" LEADS
T = SPADE TERM.
B = BOLT TERM.
G = DIN43650
W = WEATHER–PACK
D = DEUTSCH–DT04–2P
M = METRI–PACK CONN.

VOLTAGE	AMPS
12D = 12 VDC	3.00
24D = 24 VDC	1.50



BUCHER hydraulics

PRESSURE COMPENSATED, PROPORTIONAL, PRIORITY FLOW CONTROL VALVE.

DESCRIPTION

This valve is an electro–hydraulic, proportional, priority (By–Pass) type, pressure compensated, hydraulic flow control. Regulated flow normally closed 0 to 24.0 GPM [0 to 91,2 L/M] or normally open 24.0 to 0 GPM [91,2 to 0 L/M] @ 160 PSI DELTA P. is proportional to the current input regardless of load or system pressure. After the priority flow is satisfied the excess flow is diverted to a secondary circuit or to tank. Maximum inlet flow is 35.0 GPM [130,0 L/M].

OPERATIONS

This unit is a direct acting (NO PILOT FLOW), electro–hydraulic, proportional, pressure compensated, flow control valve. When the coil is energized the armature moves the metering orifice open or closed against a precision bias spring varying the flow. A pressure compensator spool (HYDROSTAT) modulates the flow at 160 PSI/11,0 Bar delta "P" providing pressure. When current is increased or decreased to the coil; the flow will increase or decrease proportionally.

IN THE EVENT OF POWER FAILURE THE VALVE WILL CLOSE OR OPEN RESPECTIVELY.

FEATURES AND BENEFITS

Continuous–duty, very low heat rise & waterproof solenoid coil.
Interchangeable solenoid coils & terminations options available.
Hardened precision fitted spool & sleeve provides reliable, long life.
Very efficient wet – armature solenoid core tube construction.
All external carbon steel parts are plated for longer life against the elements.
All valves are 100% functionally tested.

BUCHER hydraulics

PRESSURE COMPENSATED, PROPORTIONAL, PRIORITY FLOW CONTROL VALVE.

SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]
PROOF PRESSURE: 10,000 PSI [700 Bar]
REGULATED FLOW: 24.0 GPM [91,2 l/m] Max. See performance chart.
INTERNAL LEAKAGE: 30 cu.in/min [495 cc/m] @ 5,000 PSI [350 Bar]
VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.
5000 PSI [350 Bar] = Steel – Unplated.
OPERATING TEMPERATURE: –40° to +250° F. [–40° to +120° C.]
OPERATING MEDIA: All general purpose hydraulic fluids such as MIL–H–5606, SAE–#10, SAE–#20, etc.
RESPONSE: The most efficient method to control this valve is with current control and a 50 Hz dither.
POWER REQUIREMENTS: 12 VDC, Operating current 0.4 to 2.4 AMPS.
24 VDC, Operating current 0.2 to 1.2 AMPS.
SEAL KIT: Buna "N": SKN–1222, SKN–1242
VITON: SKV–1222, SKV–1242
INSTALLATION: No restrictions.
WEIGHT: 5.58 lbs [2,54 kg]. aluminum body.
9.65 lbs [4,38 kg]. steel body.

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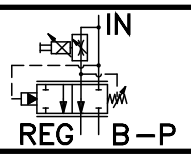
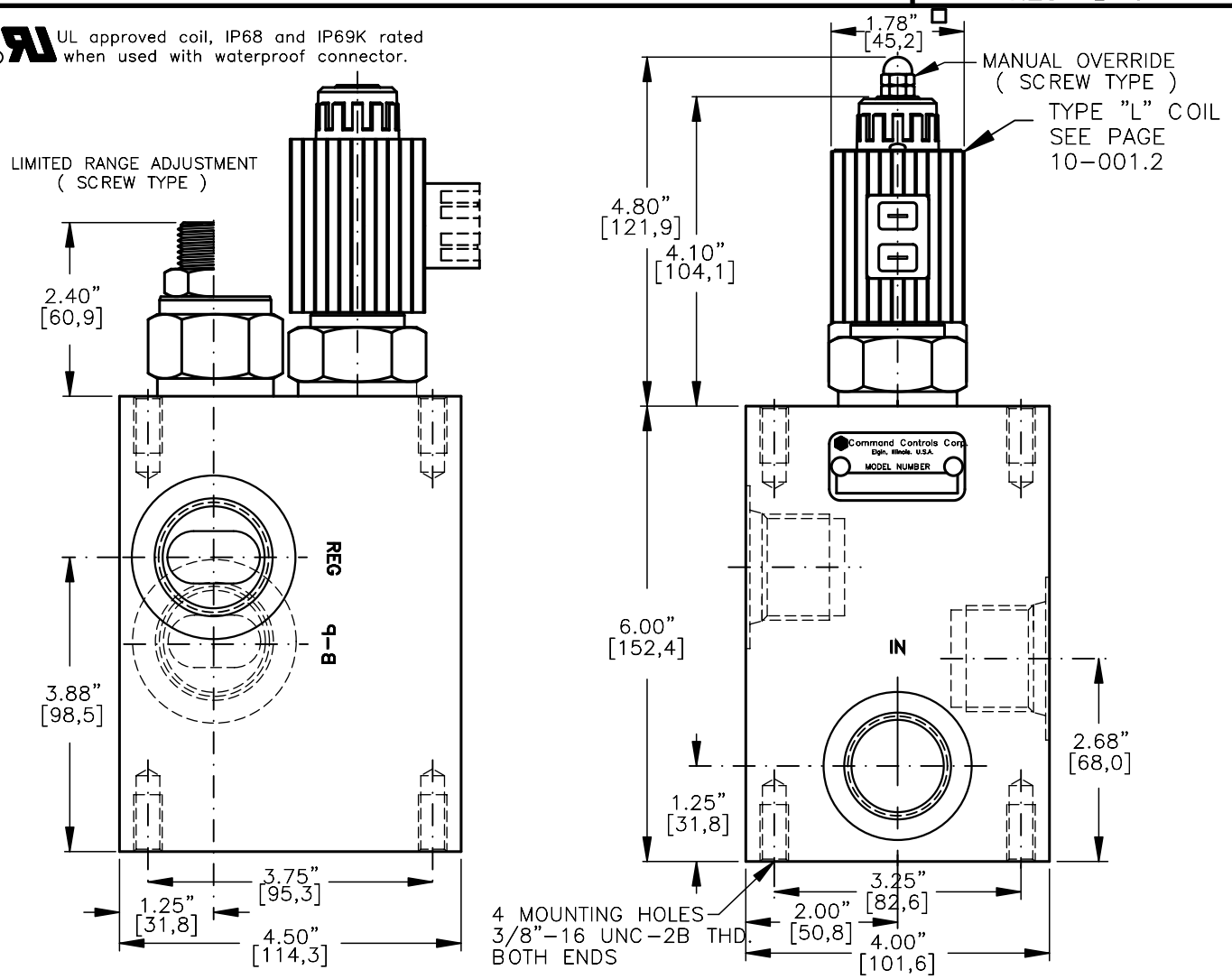
BUCHER hydraulics

PRESSURE COMPENSATED, NORMALLY CLOSED OR NORMALLY OPEN PROPORTIONAL, PRIORITY FLOW CONTROL VALVE.



UL approved coil, IP68 and IP69K rated when used with waterproof connector.



NOTES:
1. SOLENOIDS AVAILABLE WITH DIODES – CONSULT FACTORY.

PBFC–16–X–X–XX–X–X–X–XXX–XXX X

BASIC

SIZE
16= 1.312"–12UNF

SEALS
N = BUNA "N"
V = VITON

STYLE
C = NORMALLY CLOSED
O = NORMALLY OPEN

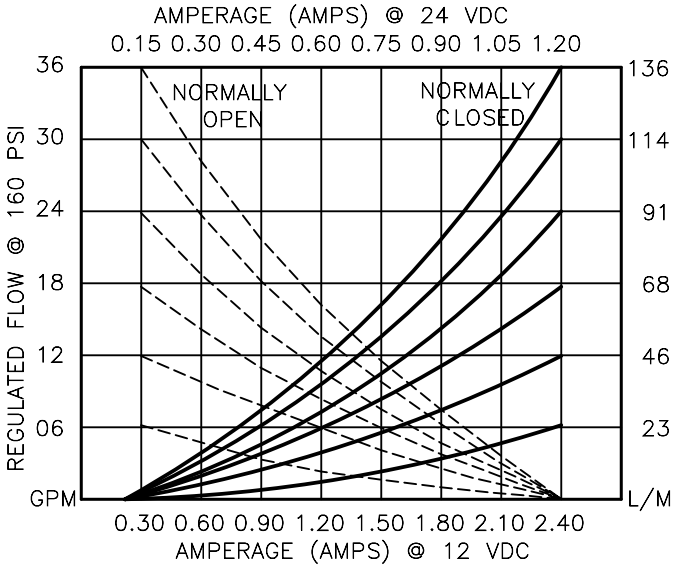
REGULATED FLOW
06 = 0 TO 6.0 GPM
12 = 0 TO 12.0 GPM
18 = 0 TO 18.0 GPM
24 = 0 TO 24.0 GPM
30 = 0 TO 30.0 GPM
36 = 0 TO 36.0 GPM

PORTS
16TX = SAE – #16
"A" = ALUM. HOUSING
"S" = STEEL HOUSING

ADJUSTMENT OPTIONS
O–F–100 = NONE
M–F–100 = MANUAL OVERRIDE
O–S–180 = LIMITED RANGE ADJ.
M–S–180 = BOTH MO/LTD ADJ

TERMINALS
L =18GA. 24" LEADS
T =SPADE TERM.
B =BOLT TERM.
G =DIN43650
W =WEATHER–PACK
D =DEUTSCH–DT04–2P
M =METRI–PACK CONN.

VOLTAGE	AMPS
12D = 12 VDC	3.00
24D = 24 VDC	1.50



BUCHER hydraulics

PRESSURE COMPENSATED, PROPORTIONAL, PRIORITY FLOW CONTROL VALVE.

DESCRIPTION

This valve is an electro–hydraulic, proportional, priority (By–Pass) type, pressure compensated, hydraulic flow control. Regulated flow normally closed 0 to 36.0 GPM [0 to 136,8 L/M] or normally open 36.0 to 0 GPM [136,8 to 0 L/M] @ 160 PSI DELTA P. is proportional to the current input regardless of load or system pressure. After the priority flow is satisfied the excess flow is diverted to a secondary circuit or to tank. Maximum inlet flow is 50.0 GPM [190,0 L/M].

OPERATIONS

This unit is a direct acting (NO PILOT FLOW), electro–hydraulic, pro–portional, pressure compensated, flow control valve. When the coil is energized the armature moves the metering orifice open or closed against a precision bias spring varying the flow. A pressure compensator spool (HYDROSTAT) modulates the flow at 160 PSI/11,0 Bar delta "P" providing pressure. When current is increased or decreased to the coil; the flow will increase or decrease proportionally.

IN THE EVENT OF POWER FAILURE THE VALVE WILL CLOSE OR OPEN RESPECTIVELY.

FEATURES AND BENEFITS

Continuous–duty, very low heat rise & waterproof solenoid coil.
Interchangeable solenoid coils & terminations options available.
Hardened precision fitted spool & sleeve provides reliable, long life.
Very efficient wet – armature solenoid core tube construction.
All external carbon steel parts are plated for longer life against the elements.
All valves are 100% functionally tested.

BUCHER hydraulics

PRESSURE COMPENSATED, PROPORTIONAL, PRIORITY FLOW CONTROL VALVE.

SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]
PROOF PRESSURE: 10,000 PSI [700 Bar]
REGULATED FLOW: 36.0 GPM [136,8 l/m] Max. See performance chart.
INTERNAL LEAKAGE: 40 cu.in/min [660 cc/m] @ 5,000 PSI [350 Bar]
VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.
5000 PSI [350 Bar] = Steel – Unplated.
OPERATING TEMPERATURE: –40° to +250° F. [–40° to +120° C.]
OPERATING MEDIA: All general purpose hydraulic fluids such as MIL–H–5606, SAE–#10, SAE–#20, etc.
RESPONSE: The most efficient method to control this valve is with current control and a 50 Hz dither.
POWER REQUIREMENTS: 12 VDC, Operating current 0.4 to 2.4 AMPS.
24 VDC, Operating current 0.2 to 1.2 AMPS.
SEAL KIT: Buna "N": SKN–1622, SKN–1642
VITON: SKV–1622, SKV–1642
INSTALLATION: No restrictions.
WEIGHT: 6.78 lbs [2,54 kg] aluminum body.
9.89 lbs [4,50 kg] steel body.

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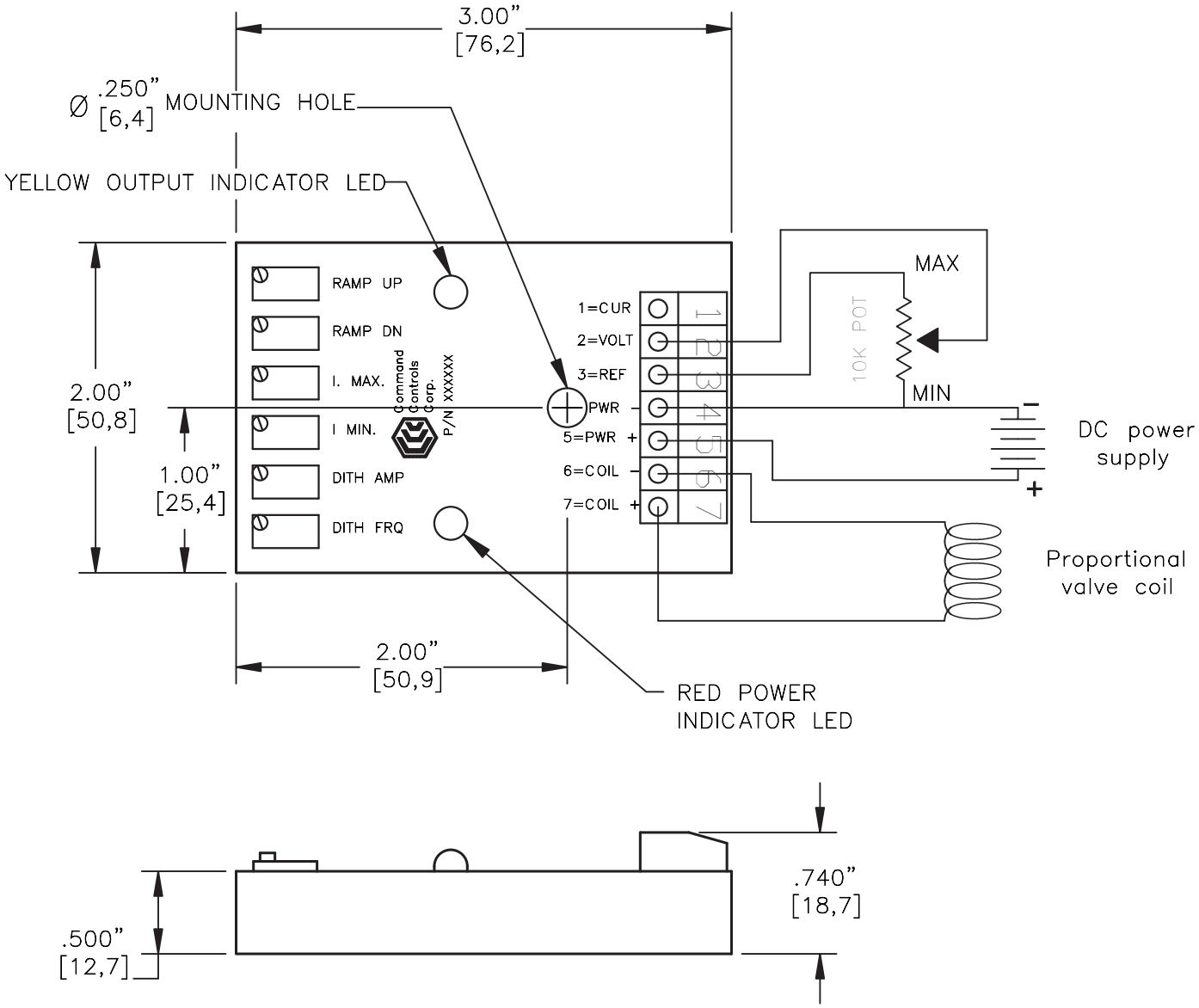
The technical information in this catalog, may contain calculated figures (for reference only) and not actual performance data for this product. Data is provided for the purpose of product description only, and must not be construed as warranted characteristics in the legal sense. The information does not relieve users from the duty of conducting their own evaluations and tests. Because the products are subject to continual improvement, we reserve the right to amend the product specifications contained in this catalogue.

BUCHER hydraulics

PWM MICRO PROPORTIONAL VALVE DRIVER



PWM-1400-12..... for use with 12 V.D.C.

PWM-1400-24..... for use with 24 V.D.C.

BUCHER hydraulics

PWM MICRO PROPORTIONAL VALVE DRIVER

DESCRIPTION:

The Block Micro Proportional Driver is a electrical circuit built into an epoxy potted enclosure designed to proportionally control the flow of our solenoid valves.

The BMPD provides a Ø0.25 [6,4] mounting hole that is built in the body. Assembly of the unit is accomplished by connecting stranded or solid #10 AWG [Ø3,0] wire, up to to the miniature header that is provided on the top surface of the block.
Adjustments made to the unit are made by turning the adjustment screws located on the top surface of the block. The block also includes a red power indicator LED and a variable intensity yellow LED, to indicate output level, for onboard diagnostics.

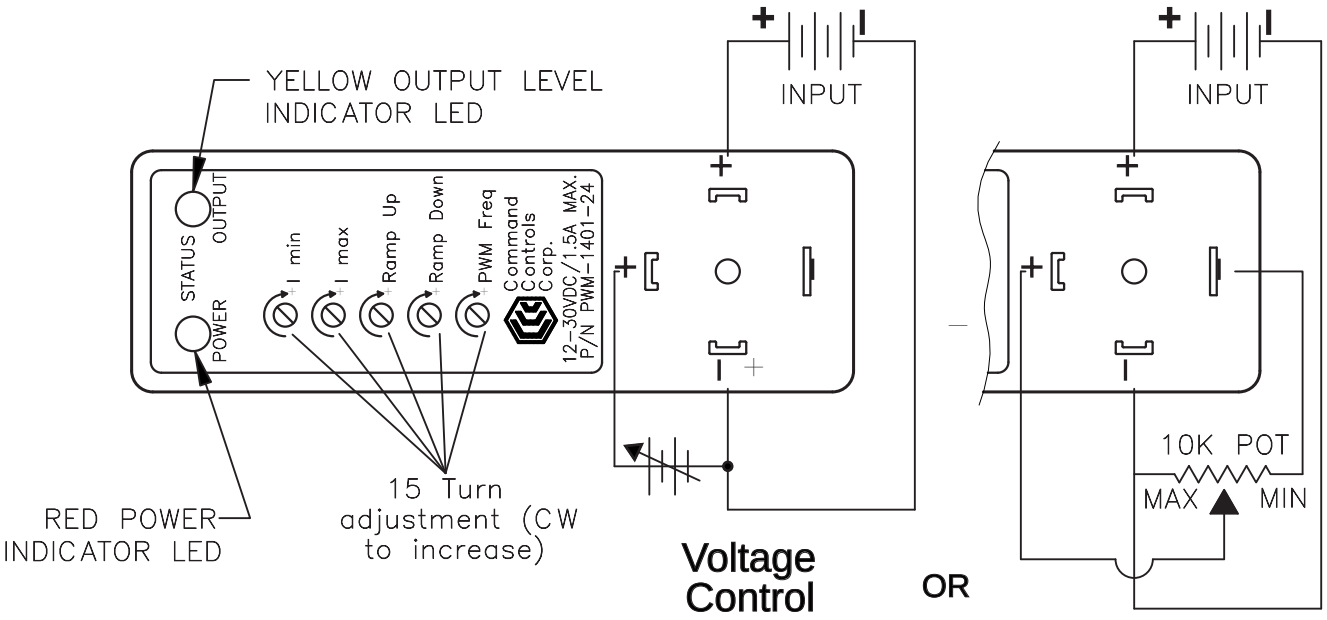
TECHNICAL DATA:

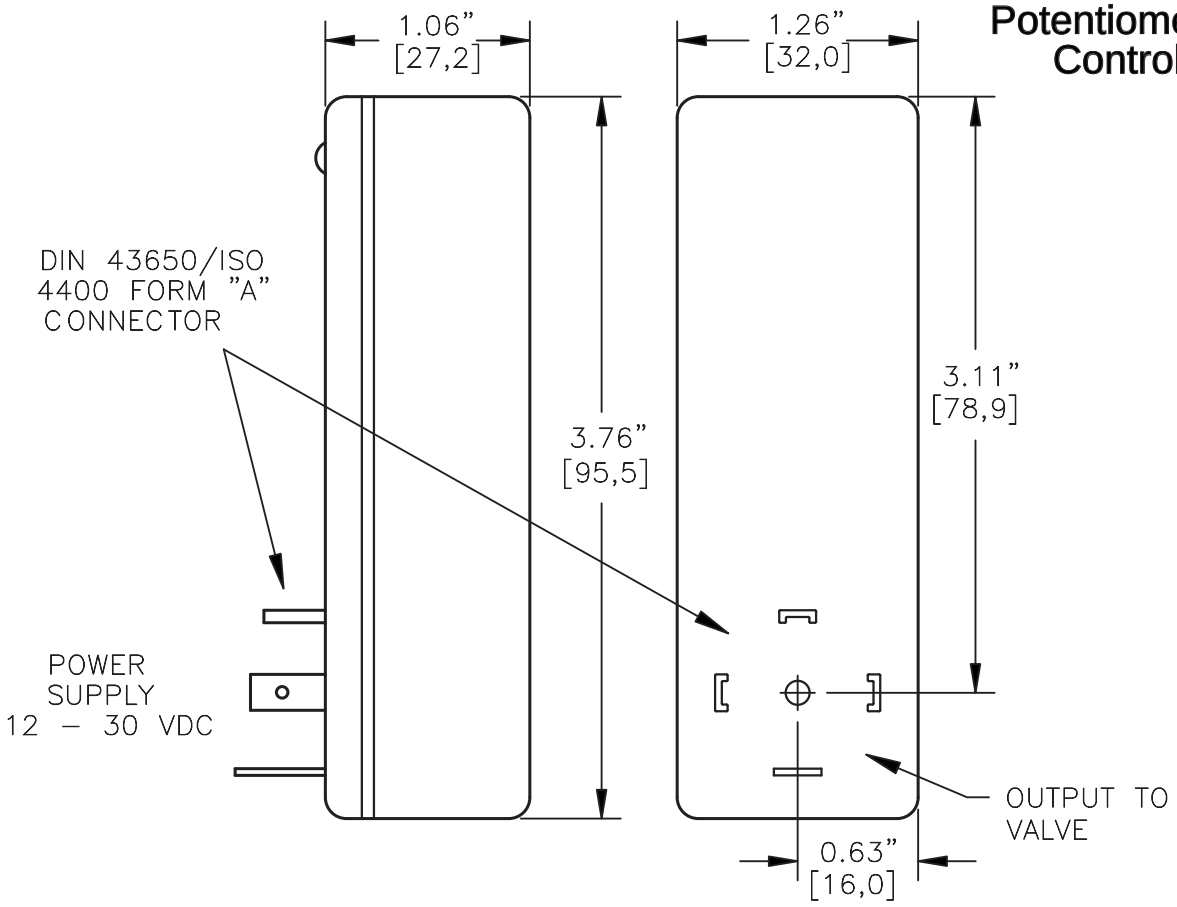
PARAMETER	ALL VERSIONS
SUPPLY VOLTAGE	9.0 V DC min. −32 VDC max.
SUPPLY CURRENT	45 mA max. (no load)
INPUT CONTROL SIGNAL VOLTAGE OR CURRENT	0 − 5 VDC (300 K ohm impedance) 0−20 mA (100 ohm impedance)
RAMPING UP/DOWN TIME	0.1 − 20 sec. linear (+/− 0.1%/°C)
PWM FREQUENCY	1.2 KHz fixed
OUTPUT LEAP TO I MIN	@ 0.1 V or 0.4 mA control (+/− 15%)
DITHERING FREQUENCY	30 − 150 Hz
DITHERING AMPLITUDE	0 − 500 mA peak to peak
VOLTAGE REFERENCE	5.0V +/− 5% regulated
OPERATING TEMP.	−25 to 85 °C

PARAMETER	PWM−1400−12	PWM−1400−24
OUTPUT CURRENT @ 25 °C Ta		
CONTINUOUS	3.0 Amps max.	1.5 Amps max.
PEAK PULSED (16ms)	17.0A max.	4.7A max.
I MIN. (+/− 20%)	0 − 1.0A max.	0 − 0.5A max.
I MAX. (+/− 20%)	Imin. + 2.0A max.	Imin. + 1.0A max.
REGULATION **D**V	+/− 0.2% / V	
REGULATION **D**T	+/− 0.1% / °C	

BUCHER hydraulics

PWM MICRO PROPORTIONAL VALVE DRIVER





PWM-1401-12..... for use with 12 V.D.C.

PWM-1401-24..... for use with 24 V.D.C.

BUCHER hydraulics

PWM MICRO PROPORTIONAL VALVE DRIVER

DESCRIPTION:

The Micro Proportional Driver is a coil mounted driver unit used to proportionally control the flow of our solenoid valves.

The electronic circuit for the Micro Proportional Driver is built into an environment resistant miniature enclosure. It incorporates a DIN 43650/ISO 4400 form "A" connector male and female interface, and it is mounted on our coils using a mounting screw.

The case for the driver is made from engineered polymers to resist harsh chemicals, foreign substances, and moisture.

The unit meets NEMA 4 environment standards.

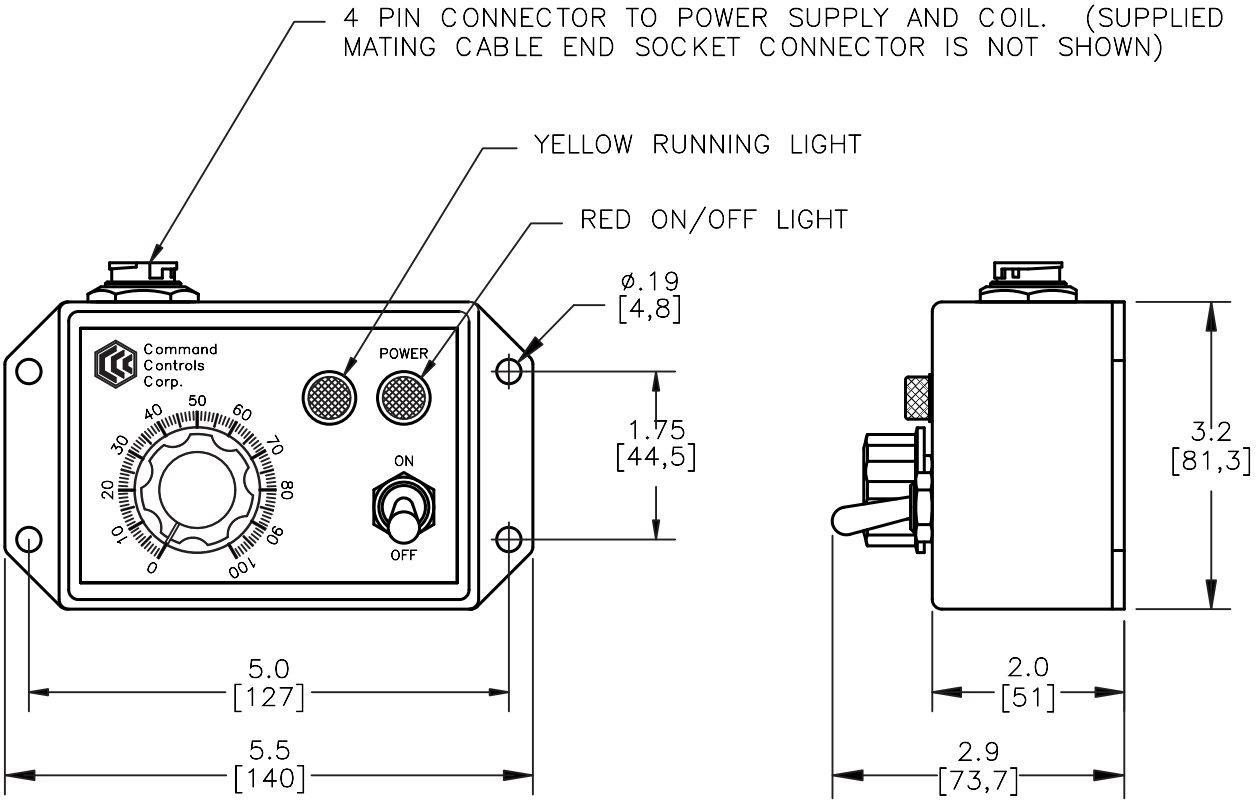
TECHNICAL DATA:

PARAMETER	ALL VERSIONS
SUPPLY VOLTAGE	12 V DC min. – 30 VDC max.
SUPPLY CURRENT	45 mA max. (no load)
INPUT CONTROL SIGNAL	0 – 10 VDC (500 K ohm impedance)
RAMPING UP/DOWN TIME	0.1 – 20 sec. linear (+/– 0.1% / °C)
PWM FREQUENCY	95 – 225 Hz
OUTPUT LEAP TO I MIN	@ 0.2 V or 0.4 mA control (+/– 15%)
OPERATING TEMP.	–25 to 85 °C

PARAMETER	PWM–1401–12	PWM–1401–24
OUTPUT CURRENT @ 25°C Ta		
CONTINUOUS	3.0 Amps max.	1.5 Amps max.
PEAK PULSED (16ms)	17.0A max.	4.7A max.
I MIN. (+/– 20%)	0 – 1.0A max.	0 – 0.5A max.
I MAX. (+/– 20%)	Imin. + 2.0A max.	Imin. + 1.0A max.
REGULATION **D**V	+/– 0.2% / V	
REGULATION **D**T	+/– 0.1% / °C	

BUCHER hydraulics

PWM PROPORTIONAL DRIVER CONTROL BOX



PWM-1404-12..... for use with 12 V.D.C.

PWM-1404-24..... for use with 24 V.D.C.

BUCHER hydraulics

PWM PROPORTIONAL DRIVER CONTROL BOX

DESCRIPTION:

THE PWM PROPORTIONAL DRIVER CONTROL BOX IS A COMPACT DEVICE, USED TO MANUALLY CONTROL PROPORTIONAL VALVES. IT USES A MICRO PROPORTIONAL DRIVER AND A POTENTIOMETER TO CONTROL THE VOLTAGE OR CURRENT TO THE SOLENOID COIL.

FEATURES INCLUDE A RED AND YELLOW INDICATOR LIGHT FOR ONBOARD DIAGNOSTICS AND A PLASTIC KNOB TO MANUALLY OPERATE THE VALVE.

THE PROPORTIONAL DRIVER CONTROL BOX ALSO INCLUDES A MOUNTING BRACKET WITH FOUR Ø .190 MOUNTING HOLES, FOR EASY MOUNTING.

TECHNICAL DATA:

COMPONENTS	PWM–1404–12	PWM–1404–24
POTENTIOMETER	10K SINGLE TURN TRIMMING POT.	10K SINGLE TURN TRIMMING POT.
LIGHT BULB	28 V INCANDESCENT BULB	28 V INCANDESCENT BULB
TOGGLE SWITCH	SPDT AC RATED GENERAL PURPOSE	SPDT AC RATED GENERAL PURPOSE
PWM DRIVER	PWM–1400–12	PWM–1400–24
RECEPTACLE	4 PIN PLASTIC CONNECTOR	4 PIN PLASTIC CONNECTOR