Comatrol
RESPONSIVENESS IN MOTION
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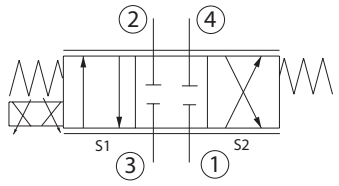
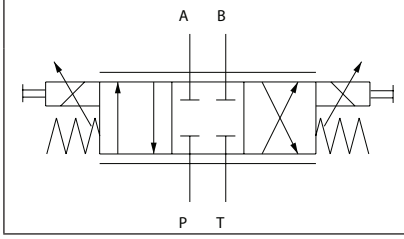
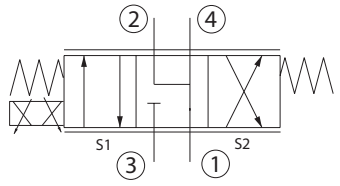
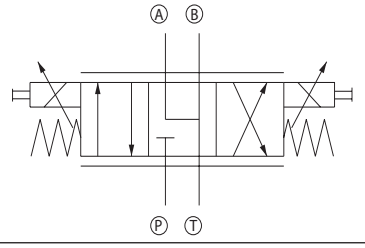
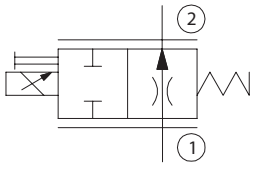
Proportional Directional	Model No.	Cavity	Description	Flow*	Pressure	Page
	PSV10-34-02	SDC10-4	Proportional Directional Valve	22 l/min [6 US gal/min]	250 bar [3600 psi]	11.12

Proportional Directional	Model No.	Cavity	Description	Flow*	Pressure	Page
	PDCV03-3Z11	ISO D03	Proportional Directional Valve	30.3 l/min [8 US gal/min]	320 bar [4640 psi]	11.13
	PDCV05-3Z11	ISO D05		60 l/min [16 US gal/min]	320 bar [4600 psi]	11.14

Proportional Directional	Model No.	Cavity	Description	Flow*	Pressure	Page
	PSV10-34-05	SDC10-4	Proportional Directional Valve	22 l/min [6 US gal/min]	250 bar [3600 psi]	11.15

Proportional Directional	Model No.	Cavity	Description	Flow*	Pressure	Page
	PDCV03-3Y11	ISO D03	Proportional Directional Valve	30.3 l/min [8 US gal/min]	320 bar [4640 psi]	11.16
	PDCV05-3Y11	ISO D05		60 l/min [16 US gal/min]	320 bar [4600 psi]	11.17

Proportional Flow Controls	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP518-PNC	SDC08-2	Proportional Flow Control Valve, Non-Compensated, Normally Open	12 l/min [3 US gal/min]	210 bar [3000 psi]	11.18
	PSV10-NC	SDC10-2		40 l/min [11 US gal/min]	260 bar [3770 psi]	11.19
	PSV12-NC	SDC12-2		80 l/min [21 US gal/min]	260 bar [3770 psi]	11.20
	PSV16-NC	SDC16-2		100 l/min [26 US gal/min]	260 bar [3770 psi]	11.21

* Flow ratings are based on a pressure drop of 7 bar [100 psi] unless otherwise noted. They are for comparison purposes only.

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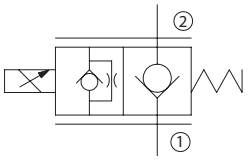
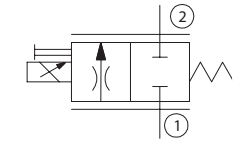
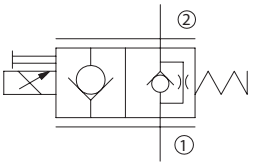
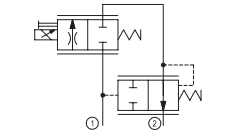
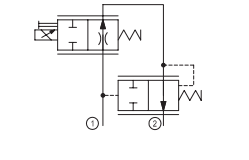
Proportional Flow Controls	Model No.	Cavity	Description	Flow*	Pressure	Page
	PSVP10-NCR	SDC10-2	Proportional Flow Control Valve, Non-Compensated, Normally Closed, Poppet Type	55 l/min [14 US gal/min]	260 bar [3770 psi]	11.22
	PSVP12-NCR	SDC12-2		70 l/min [18 US gal/min]	260 bar [3770 psi]	11.23
	PSVP16-NCR	SDC16-2		90 l/min [24 US gal/min]	260 bar [3770 psi]	11.24

Proportional Flow Controls	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP518-PNO	SDC08-2	Proportional Flow Control Valve, Non-Compensated, Normally Open	12 l/min [3 US gal/min]	210 bar [3000 psi]	11.25
	PSV10-NO	SDC10-2		45 l/min [12 US gal/min]	260 bar [3770 psi]	11.26
	PSV12-NO	SDC12-2		100 l/min [26 US gal/min]	260 bar [3770 psi]	11.27

Proportional Flow Controls	Model No.	Cavity	Description	Flow*	Pressure	Page
	PSVP10-NOR	SDC10-2	Proportional Flow Control Valve, Non-Compensated, Normally Open, Poppet Type	45 l/min [12 US gal/min]	260 bar [3770 psi]	11.28
	PSVP12-NOR	SDC12-2		70 l/min [18 US gal/min]	260 bar [3770 psi]	11.29
	PSVP16-NOR	SDC16-2		80 l/min [21 US gal/min]	260 bar [3770 psi]	11.30

Proportional Flow Controls	Model No.	Cavity	Description	Flow*	Pressure	Page
	PFC10-RC	SDC10-2	Proportional Flow Control Valve, Pressure Compensated, Restrictive Type, Normally Closed	30 l/min [8 US gal/min]	260 bar [3770 psi]	11.31
	PFC12-RC	SDC12-2		65 l/min [17 US gal/min]	260 bar [3770 psi]	11.32
	PFC16-RC	SDC16-2		90 l/min [24 US gal/min]	260 bar [3770 psi]	11.33

Proportional Flow Controls	Model No.	Cavity	Description	Flow*	Pressure	Page
	PFC10-RO	SDC10-2	Proportional Flow Control Valve, Pressure Compensated, Restrictive Type, Normally Open	30 l/min [8 US gal/min]	260 bar [3770 psi]	11.34
	PFC12-RO	SDC12-2		60 l/min [16 US gal/min]	260 bar [3770 psi]	11.35
	PFC16-RO	SDC16-2		85 l/min [22 US gal/min]	260 bar [3770 psi]	11.36

* Flow ratings are based on a pressure drop of 7 bar [100 psi] unless otherwise noted. They are for comparison purposes only.

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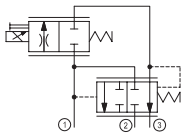
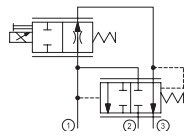
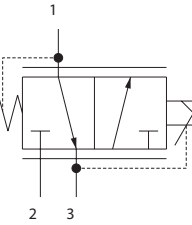
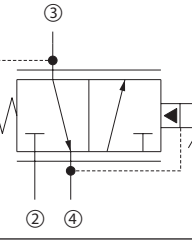
	PFC10-PC	SDC10-3	Proportional Flow Control Valve, Pressure Compensated, Priority Type, Normally Closed	40 l/min [11 US gal/min]	260 bar [3770 psi]	11.37
	PFC12-PC	SDC12-3		65 l/min [17 US gal/min]	260 bar [3770 psi]	11.38
	PFC16-PC	SDC16-3		85 l/min [22 US gal/min]	260 bar [3770 psi]	11.39

Proportional Flow Controls	Model No.	Cavity	Description	Flow*	Pressure	Page
	PFC10-PO	SDC10-3	Proportional Flow Control Valve, Pressure Compensated, Priority Type, Normally Open	35 l/min [9 US gal/min]	260 bar [3770 psi]	11.40
	PFC12-PO	SDC12-2		70 l/min [18 US gal/min]	260 bar [3770 psi]	11.41
	PFC16-PO	SDC16-3		90 l/min [24 US gal/min]	260 bar [3770 psi]	11.42

Proportional Pressure Reducing	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP558-24	SDC08-3	Proportional Pressure Reducing Valve, Direct Acting, Normally Open	4 l/min [1 US gal/min]	34 bar [500 psi]	11.43

Proportional Pressure Reducing	Model No.	Cavity	Description	Flow*	Pressure	Page
	XRP 044	SDC10-4	Proportional Pressure Reducing/Relieving Valve, Piloted, Normally Open	25 l/min [7 US gal/min]	50 bar [700 psi]	11.44

* Flow ratings are based on a pressure drop of 7 bar [100 psi] unless otherwise noted. They are for comparison purposes only.

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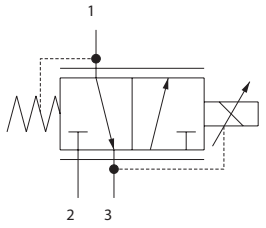
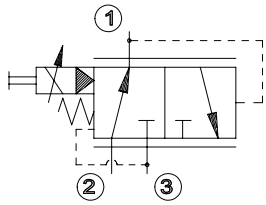
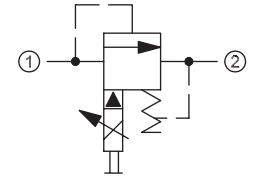
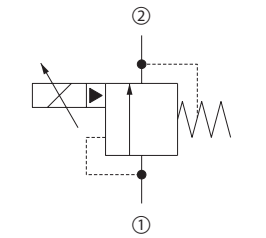
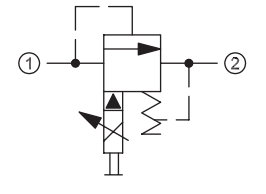
Proportional Pressure Reducing	Model No.	Cavity	Description	Flow*	Pressure	Page
	PPR10-PAC	SDC10-3	Proportional Pressure Reducing/Relieving Valve, Piloted, Normally Closed	18 l/min [5 US gal/min]	250 bar [3625 psi]	11.45

Proportional Pressure Reducing	Model No.	Cavity	Description	Flow*	Pressure	Page
	XRP 06	NCS06/3	Proportional Pressure Reducing/Relieving Valve, Piloted, Normally Open	25 l/min [7 US gal/min]	315 bar [4500 psi]	11.46

Proportional Pressure Relieving	Model No.	Cavity	Description	Flow*	Pressure	Page
	XMD 04	NCS04/2	Proportional Pressure Reducing Valve, Direct Acting, Normally Open	5 l/min [1 US gal/min]	250 bar [3600 psi]	11.47
	CP558-20	SDC08-2		8 l/min [2 US gal/min]	210 bar [3000 psi]	11.48

Proportional Pressure Relieving	Model No.	Cavity	Description	Flow*	Pressure	Page
	PRV10-POC	SDC10-2	Proportional Relief Valve, Pilot Operated, Normally Closed	76 l/min [20 US gal/min]	250 bar [3600 psi]	11.49
	PRV12-POC	SDC12-2		180 l/min [48 US gal/min]	250 bar [3600 psi]	11.50

Proportional Pressure Relieving	Model No.	Cavity	Description	Flow*	Pressure	Page
	XMP 06	NCS06/2	Proportional Relief Valve, Pilot Operated, Normally Open	50 l/min [13 US gal/min]	315 bar [4500 psi]	11.51

* Flow ratings are based on a pressure drop of 7 bar [100 psi] unless otherwise noted. They are for comparison purposes only.

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PROPORTIONAL VALVES

Proportional, or electro-proportional valves, provide infinitely variable control of flow, pressure, or direction, in response to a electric input signal.

There are four basic types of Comatrol proportional valves:

- Flow control valves.
- Pressure reducing/relieving valves.
- Pressure relief valves.
- Directional control valves

Proportional valves

PLUS+1™ COMPLIANT

Comatrol solenoid valves are PLUS+1™ compliant. PLUS+1 compliance means our valves are directly compatible with the PLUS+1 machine control architecture. Adding solenoid valves to your application using PLUS+1 GUIDE software is as easy as *drag-and-drop*. Software development that used to take months can now be done in just a few hours. For more information on PLUS+1 GUIDE, visit ***www.comatrol.com*** or *www.sauer-danfoss.com/plus1*. The table below details available GUIDE function blocks for controlling Comatrol solenoid valves.

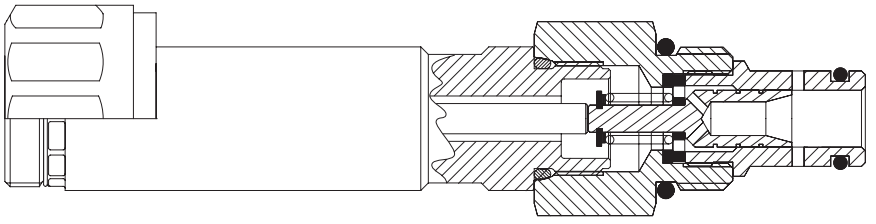
GUIDE function blocks

Two-way proportional	10106103
Three-way proportional	10106104

PROPORTIONAL FLOW CONTROL VALVES

Comatrol proportional flow control valves are 2-way, spool-type valves that are directly operated with a proportional electromagnetic solenoid actuator. By controlling electric current, these valves create an infinitely variable orifice.

Proportional flow control valve



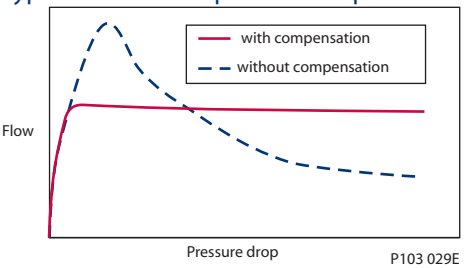
P108 349

These valves are designed to be used with a logic element to provide pressure compensation. Pressure compensation provides two advantages:

1. A constant pressure differential is maintained across the proportional valve (variable orifice), which maintains constant flow regardless of changes in operating pressure or load.

2. A constant pressure differential across the proportional valve limits the flow forces acting on the valve spool. At high flow and pressure, the electromagnetic and spring forces can be insufficient to maintain valve operation without pressure compensation.

Typical flow versus pressure drop

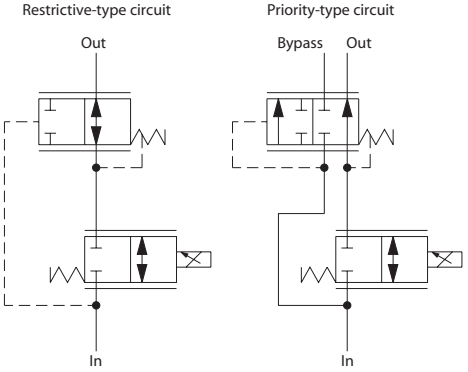


P103 029E

Typical circuits use restrictive-type or priority-type pressure compensators with proportional flow control valves to control speed of a hydraulic motor or cylinder.

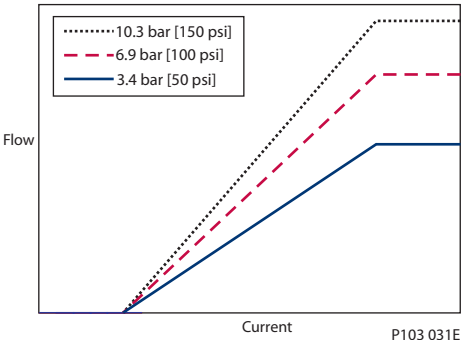
Proportional flow control valves are available with a variety of flow capabilities (variable orifice sizes). By matching this flow capability to various pressure compensator settings, a wide range of flow vs. current control curves can be attained.

Typical circuit using a proportional valve



P103 030E

Flow versus current



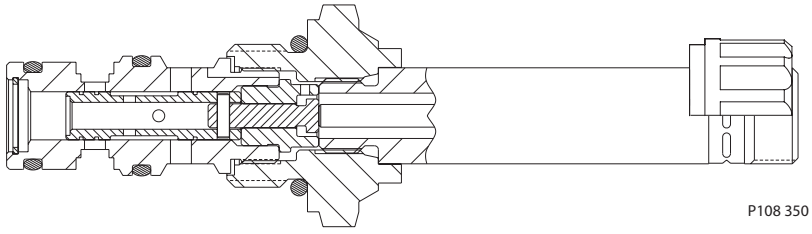
P103 031E

Effect of pressure compensator setting

PROPORTIONAL PRESSURE REDUCING/ RELIEVING VALVES

Proportional pressure reducing/relieving valves are 3-way valves that provide a controlled output pressure as a function of electric current, regardless of system pressure or flow (within the valve's limits). Direct acting designs are available for low-flow applications.

Direct-acting, proportional, pressure reducing valve



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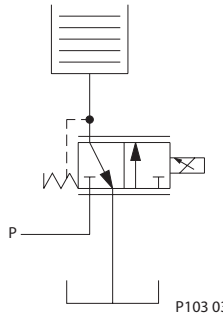
Proportional pressure reducing valves have a variety of applications including:

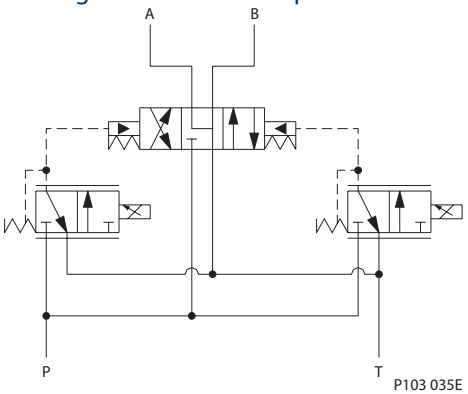
- Single acting cylinder position control, e.g. combine header height control.
- Clutch or brake pressure control.
- Pilot signal to a directional control valve. By slowly ramping the current to the proportional valve in this example, a soft-start and soft-stop is attained.

Clutch pressure control



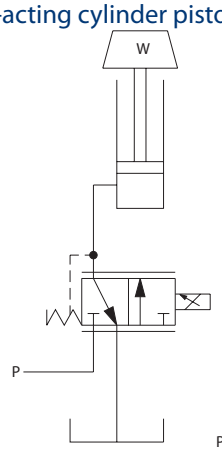
P103 034E

Pilot signal to directional spool valve



P103 035E

Single-acting cylinder piston control



P103 033E

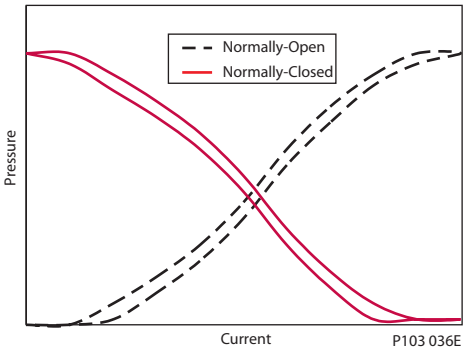
High flow proportional pressure reducing valve functions can be created by using a proportional valve to pilot a differential sensing valve; see differential sensing valve application notes for more information.

PROPORTIONAL PRESSURE RELIEF VALVES

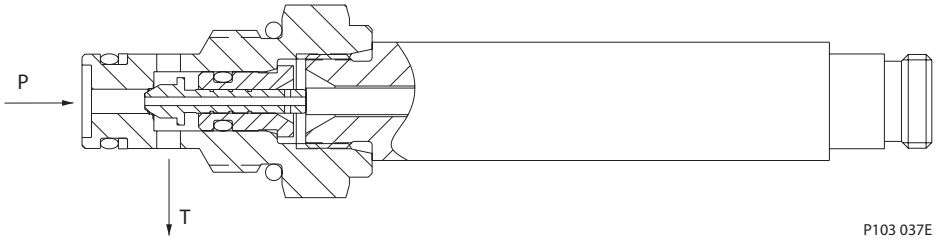
Proportional pressure relief valves are 2-way valves that provide a relief pressure as a function of electric current. Both normally-open (increasing pressure with increasing current), and normally-closed (decreasing pressure with increasing current) are available.

The normally-open proportional relief valve is a direct-acting design for low flow applications. High flow normally-open proportional relief valve functions can be created by using a proportional valve to pilot a differential sensing valve; see differential sensing valve application notes for more information.

Normally closed versus normally open proportional relief valves



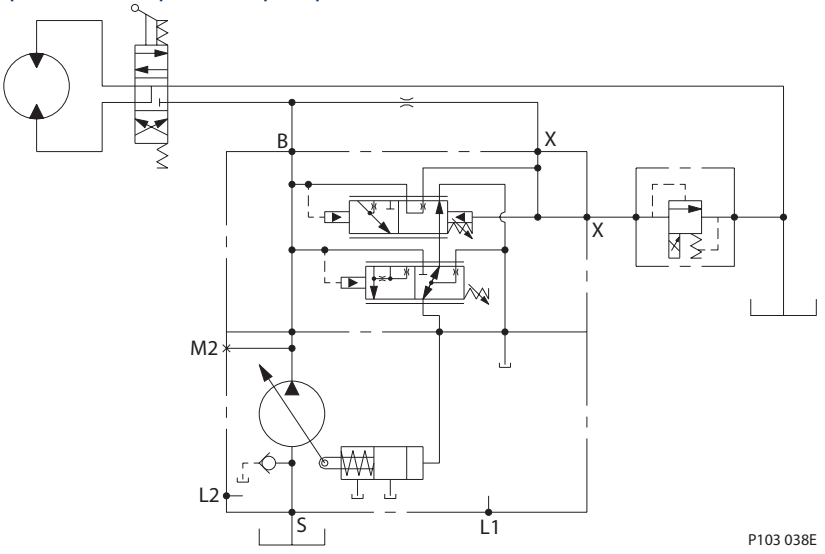
Normally-open proportional relief valve



Common applications for normally-open proportional relief valves are:

- Electro-proportional control of system relief pressure; see differential sensing valve application notes for more information.
- Electro-proportional remote pressure compensator control for open circuit piston pumps (for more information refer to BLN-10128 Series 45 Open Circuit Axial Piston Pumps Technical Information).

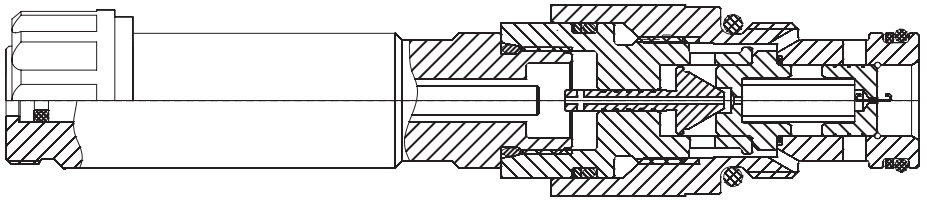
Remote pressure compensator pump control



PROPORTIONAL PRESSURE RELIEF VALVES (continued)

Normally-closed proportional relief valves are available in direct-acting and pilot-operated designs. A direct-acting, normally-closed proportional relief valve is used for low flow applications. For high flow applications, internally pilot-operated cartridges are available.

Internally pilot-operated cartridge for high flow applications

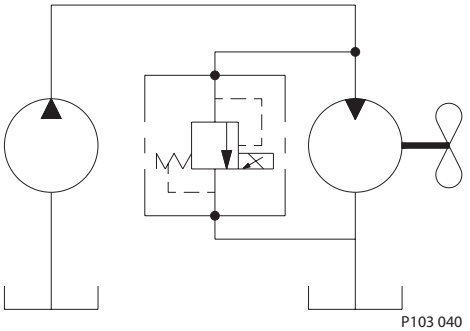


P108 351

Common applications for normally-closed proportional relief valves are:

- Electro-proportional control of system relief pressure or electro-proportional remote pressure compensator control for open circuit piston pumps as above, but where system requirements dictate full pressure with no electrical signal.
- Cooling fan speed control in hydrostatic fan drive systems. (For more information refer to BLN-10080 *Fan Drives Systems and Components Technical Information*).

Cooling fan speed control

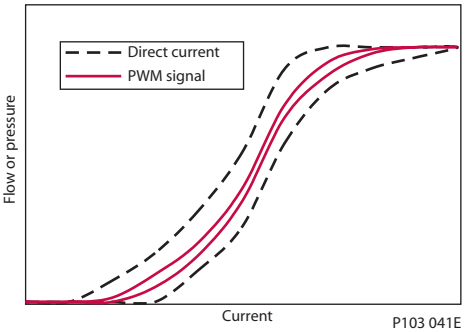


P103 040

ELECTRICAL REQUIREMENTS

All proportional cartridge valves are analog-type valves that control flow or pressure as a function of electric current. For this reason, proportional valves should be driven with a current-controlled device that will maintain constant output regardless of changes in system voltage, line losses, or temperature. Typically available current-controlled valve drivers output a pulse-width-modulated (PWM) square-wave signal. An advantage of a PWM signal is that the dither it provides significantly reduces hysteresis. Comatrol recommends using a 100-200 Hz dither for best performance.

Proportional valve hysteresis



P103 041E

Typical performance

TERMS AND DEFINITIONS

Analog Proportional Valves are controlled by electric current, which may be direct current (DC) or a PWM signal.

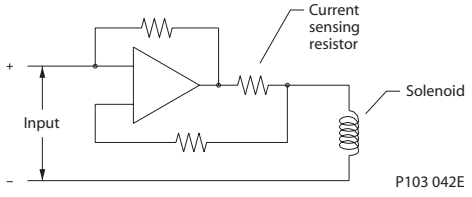
Compensator is a hydraulic component that maintains a constant pressure drop across a fixed or variable orifice.

Current is the flow of electricity through a conductor or coil, normally measured in amps (A). Steady-state current flow in an electrical circuit can be calculated by Ohm's Law, as well as voltage and resistance.

Ohm's Law $I = \frac{V}{R}$

Current Control is a feature of almost all valve drivers. The output of analog proportional valves is a direct function of current. If a valve is controlled with voltage, higher solenoid temperatures, which increase solenoid resistance, will result in lower valve output. To compensate for this, most valve drivers are designed with current feedback circuitry. This means that as solenoid temperature rises or as supply voltage and voltage losses change, the current and corresponding valve output are maintained.

Current feedback circuit



Deadband is the range from zero to the minimum current which causes the valve to respond.

Digital Proportional Valves are extremely fast responding valves that are controlled by a precise on-off signal to produce an average output that is a function of duty cycle.

Dither is a "ripple" signal sent to a solenoid to reduce hysteresis. Dither can be a sine, square, or saw-tooth wave superimposed on a PWM signal or it can be a wave on top of a DC signal.

Duty Cycle is the % of time the valve is on divided by total time.

Hysteresis is the difference in output for a given input, depending on whether the input is increasing or decreasing. It is normally expressed as a % of the maximum rated output. For example, if a 160 l/min [42 US gal/min] proportional flow control valve provides 80 l/min [21 US gal/min] with 1 amp-increasing and 88 l/min [23 US gal/min] at 1 amp-decreasing, the hysteresis is:

$$\frac{(88\text{-}80)}{160} = 5\%$$

I_{min} is the minimum current required for valve response (see deadband).

I_{max} is the current required for maximum valve output.

TERMS AND DEFINITIONS (continued)

PWM is an acronym for Pulse-Width-Modulation. Most valve drivers use a current-controlled PWM output to reduce valve hysteresis and to allow current control without excessive heat generation. A typical PWM output is a square wave from 80-500 Hz.

Ramping is the application of current to a solenoid with a linear or non-linear ramp, rather than an instantaneous step. Ramping current on and off to a proportional valve provides actuators with soft-starts and soft-stops. Ramps can generally be set or pre-programmed into valve drivers.

Resistance is a component's opposition to the flow of electrical current, usually measured in ohms (Ω). Resistance depends on the conductivity of the material, as well as size, shape, and temperature. Solenoid resistance can vary greatly with temperature; to compensate for this, current-controlled drivers are generally always used with proportional valves.

Threshold is the minimum current required for valve response; see deadband.

Valve Driver is a generic term for any device that sends a signal to a proportional valve. A valve driver may range from a simple electronic circuit attached to a knob or lever up to a microcontroller with custom software and multiple inputs and outputs.

Voltage is the potential for current to flow in an electric circuit, usually measured in volts (V).

Comatrol
RESPONSIVENESS IN MOTION
MEMBER OF THE SAUER-DANFOSS GROUP

Cartridge Valves Technical Information
Proportional Valves
Proportional Directional
PSV10-34-02

COMPLIANT

OPERATION

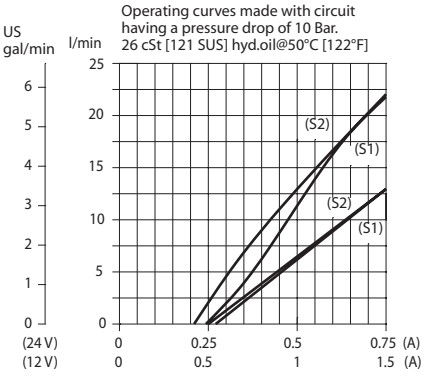
This is a non-compensated proportional directional control valve.

SPECIFICATIONS

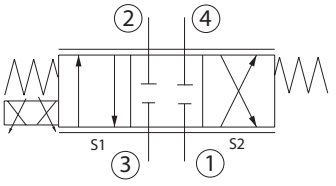
Specifications

Rated pressure	250 bar [3600 psi]
Rated flow at 10 bar [150 psi]	22 l/min [6 US gal/min]
Weight	0.77 kg [1.70 lb]
Hysteresis	4% maximum
Threshold current	0.5 A (12 VDC coil) 0.25 A (24 VDC coil)
Maximum control current	1.5 A (12 VDC coil) 0.8 A (24 VDC coil)
Cavity	SDC10-4
Standard Coil	M16 26 Watt

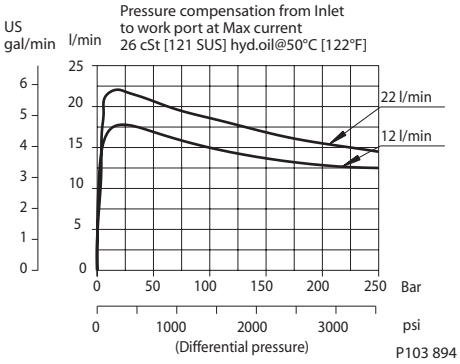
Theoretical performance



Schematic



P102 711

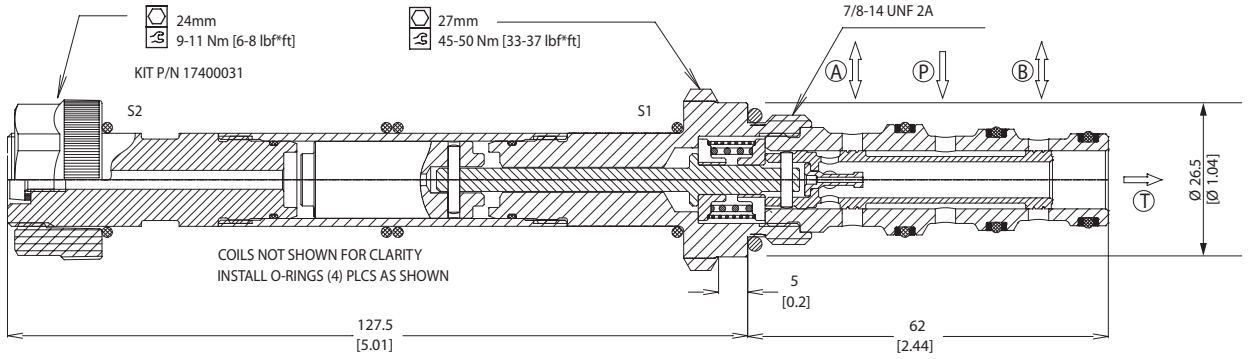


P103 894

DIMENSIONS

mm [in]

Cross-sectional view



P103 824

ORDERING INFORMATION

PSV10-34-02-12-DN-22-B-XX

Coil voltage
0 = No coil
12 = 12V DC
24 = 24V DC

Coil termination
0 = No connector
AJ = Amp junior
AS = Amp superseal 1.5
DE = Deutsch
DN = DIN 43650
FL = Lead wires
SP = Spade

Housing and ports

00	=	No Housing
L3B	=	AL, 3/8 BSP
L4B	=	AL,1/2 BSP
6S	=	AL, #6 SAE
8S	=	AL, #8 SAE

Other housings available

Seals / **Seal Kit**

B = Buna-N	354001919
V = Viton	354002019

Max regulated flow
12 = 12 l/min [3.2 gal/min]
22 = 22 l/min [5.8 gal/min]

Housing P/N
No Housing
SDC10-4-L-3B
SDC10-4-L-4B
CP10-4-6S
CP10-4-8S

P103 826E

Comatrol
RESPONSIVENESS IN MOTION
MEMBER OF THE SAUER-DANFOSS GROUP

Cartridge Valves Technical Information
Proportional Valves
Proportional Directional
PDCV03-3Z11

COMPLIANT

OPERATION

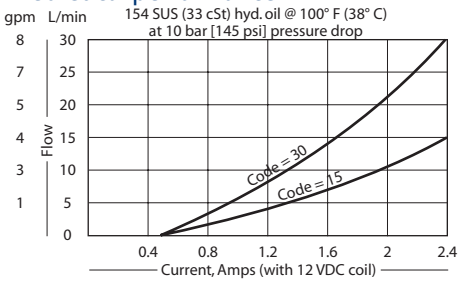
This valve is a proportional directional control.

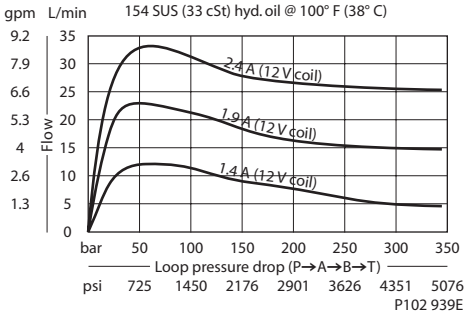
SPECIFICATIONS

Specifications

Rated pressure	320 bar [4640 psi]
Rated flow at 10 bar [145 psi]	30 l/min [8 US gal/min]
Weight	2.40 kg [5.29 lb]
Hysteresis	6% maximum
Threshold current	0.5 A (12 VDC coil) 0.25 A (24 VDC coil)
Maximum control current	2.4 A (12 VDC coil) 1.2 A (24 VDC coil)
Cavity	ISO D03
Standard Coil	PD03 40 Watt
Coil nut	158-8005

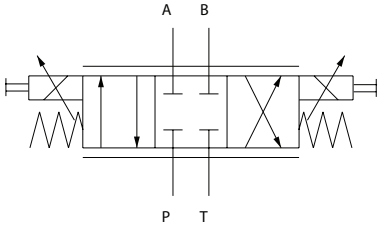
Theoretical performance





P102 939E

Schematic

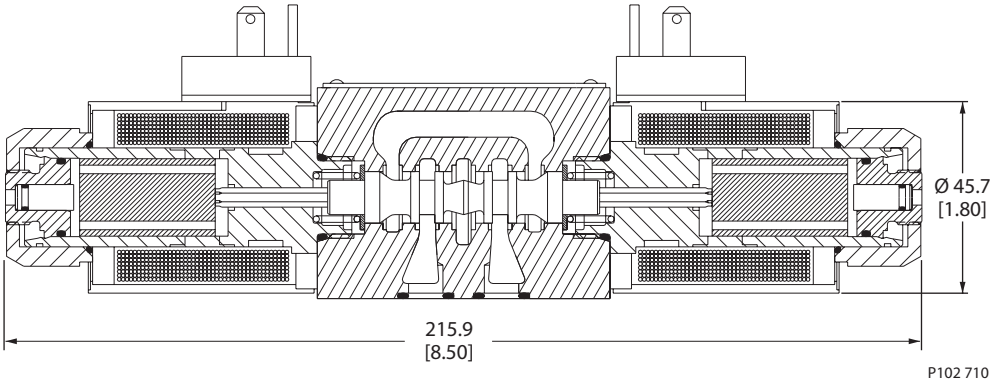


P102 711E

DIMENSIONS

mm [in]

Cross-sectional view



P102 710

ORDERING INFORMATION

PDCV03-3Z11/15-12-E1-8S

Subplate option
OMIT = No subplate
8S = Aluminum, #8 SAE ports
S8S = Steel, #8 SAE ports

Termination
E1 = DIN 43650
E3 = Amp Jr.
E8 = Lead wires
E12 = Deutsch
E14 = Dual spade

Voltage
12 = 12 VDC
24 = 24 VDC

Nominal flow rate
15 = 15 L/min [4.0 gpm]
30 = 30 L/min [7.9 gpm]

Seal Kit

	Seal kit
B = Buna-N	158-8007
V = Viton	158-8062

Note : All internal seals are viton

Bolt Kit

#10-24 Thd.	158-8064
M5 Thd.	158-8026

P102 714E

Comatrol
RESPONSIVENESS IN MOTION
MEMBER OF THE SAUER-DANFOSS GROUP

Cartridge Valves Technical Information
Proportional Valves
Proportional Directional
PDCV05-3Z11

COMPLIANT

OPERATION

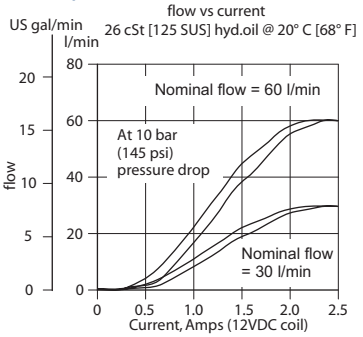
This is a non-compensated proportional directional control valve.

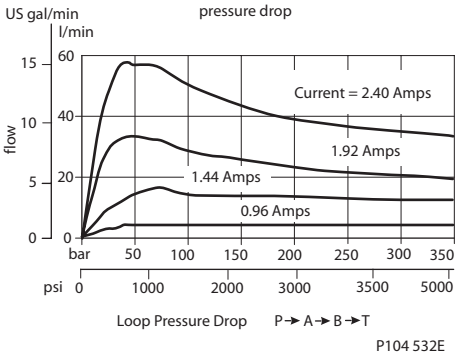
SPECIFICATIONS

Specifications

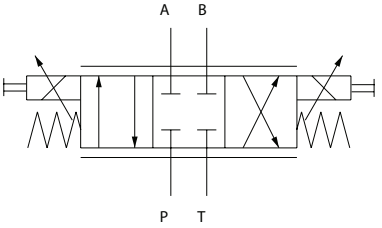
Rated pressure	320 bar [4600 psi]
Rated flow at 10 bar [150 psi]	60 l/min [16 US gal/min]
Weight	6.60 kg [14.60 lb]
Hysteresis	6% maximum
Threshold current	0.2 A (12 VDC coil) 0.1 A (24 VDC coil)
Maximum control current	1.8 A (12 VDC coil) 0.9 A (24 VDC coil)
Cavity	ISO D05
Standard Coil	PD05 23 Watt

Theoretical performance





Schematic

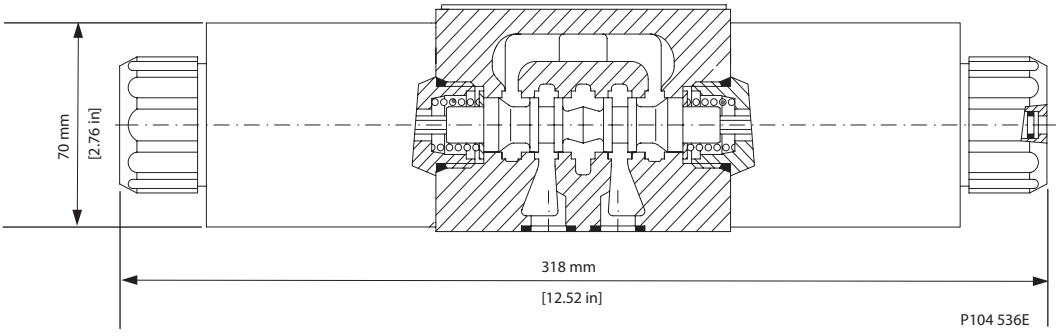


P102 711E

DIMENSIONS

mm [in]

Cross-sectional view



P104 536E

ORDERING INFORMATION

PDCV05-3Z11/30-12-E1

Connector
E1 = DIN 43650
E8 = Lead wires
E10 = Deutsch on leads

Seal kit
B = Buna N 158-8023
V = Viton 158-8094
All internal seals are Viton

Flow rate
30 = 30 l/min [7.9 US gal/min]
60 = 60 l/min [15.8 US gal/min]

Voltage
12 = 12 VDC
24 = 24 VDC

Bolt kit
1/4-20 Thd 158-8095
M6 Thd 158-8024

P103 987E

Comatrol
RESPONSIVENESS IN MOTION
MEMBER OF THE SAUER-DANFOSS GROUP

Cartridge Valves Technical Information
Proportional Valves
Proportional Directional
PSV10-34-05

COMPLIANT

OPERATION

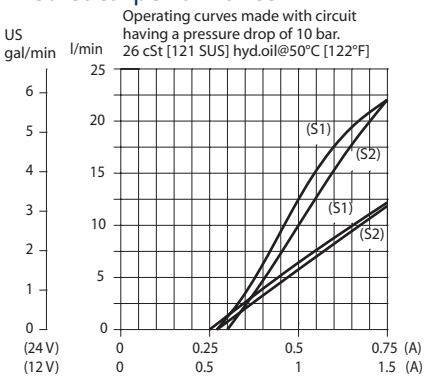
This is a non-compensated proportional directional control valve.

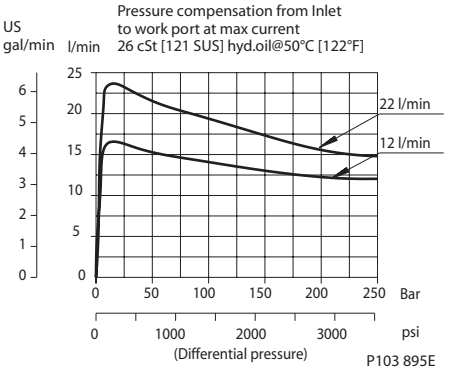
SPECIFICATIONS

Specifications

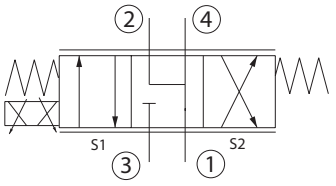
Rated pressure	250 bar [3600 psi]
Rated flow at 10 bar [150 psi]	22 l/min [6 US gal/min]
Weight	0.77 kg [1.70 lb]
Hysteresis	4% maximum
Threshold current	0.5 A (12 VDC coil) 0.25 A (24 VDC coil)
Maximum control current	1.5 A (12 VDC coil) 0.8 A (24 VDC coil)
Cavity	SDC10-4
Standard Coil	M16 26 Watt

Theoretical performance





Schematic

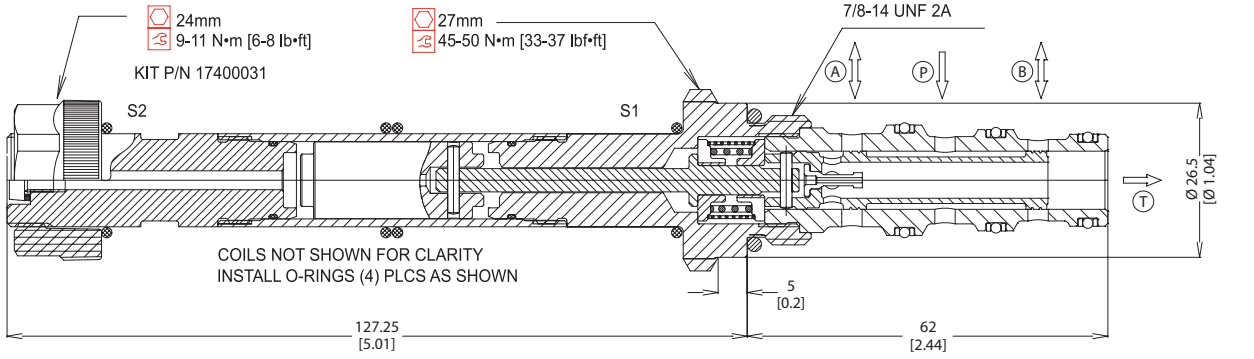


P108 287

DIMENSIONS

mm [in]

Cross-sectional view



P103 825

ORDERING INFORMATION

PSV10-34-05-12-DN-22-B-XX

Coil voltage
0 = No coil
12 = 12V DC
24 = 24V DC

Coil termination
0 = No connector
AJ = Amp junior
AS = Amp superseal 1.5
DE = Deutsch
DN = DIN 43650
FL = Lead wires
SP= Spade

Housing and ports

00	=	No Housing
L3B	=	AL, 3/8 BSP
L4B	=	AL,1/2 BSP
6S	=	AL, #6 SAE
8S	=	AL, #8 SAE

Other housings available

Seals / **Seal Kit**
B = Buna-N 354001919
V = Viton 354002019

Max regulated flow
12 = 12 l/min [3.2 gal/min]
22 = 22 l/min [5.8 gal/min]

Housing P/N
No Housing
SDC10-4-L-3B
SDC10-4-L-4B
CP10-4-6S
CP10-4-8S

P103 827E

Comatrol
RESPONSIVENESS IN MOTION
MEMBER OF THE SAUER-DANFOSS GROUP

Cartridge Valves Technical Information
Proportional Valves
Proportional Directional
PDCV03-3Y11

COMPLIANT

OPERATION

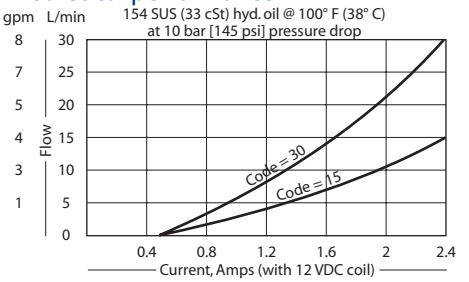
This valve is a proportional directional control.

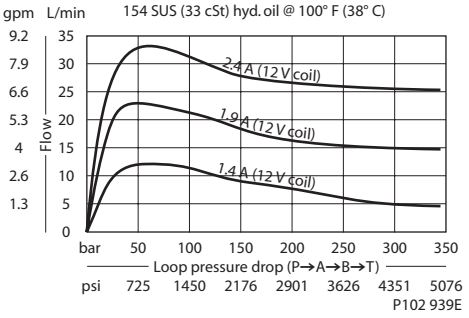
SPECIFICATIONS

Specifications

Rated pressure	320 bar [4640 psi]
Rated flow at 10 bar [145 psi]	30 l/min [8 US gal/min]
Weight	2.40 kg [5.29 lb]
Hysteresis	6% maximum
Threshold current	0.5 A (12 VDC coil) 0.25 A (24 VDC coil)
Maximum control current	2.4 A (12 VDC coil) 1.2 A (24 VDC coil)
Cavity	ISO D03
Standard Coil	PD03 40 Watt
Coil nut	158-8005

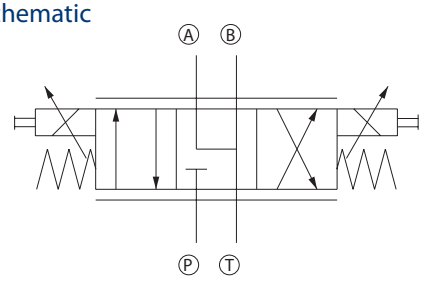
Theoretical performance





P102 939E

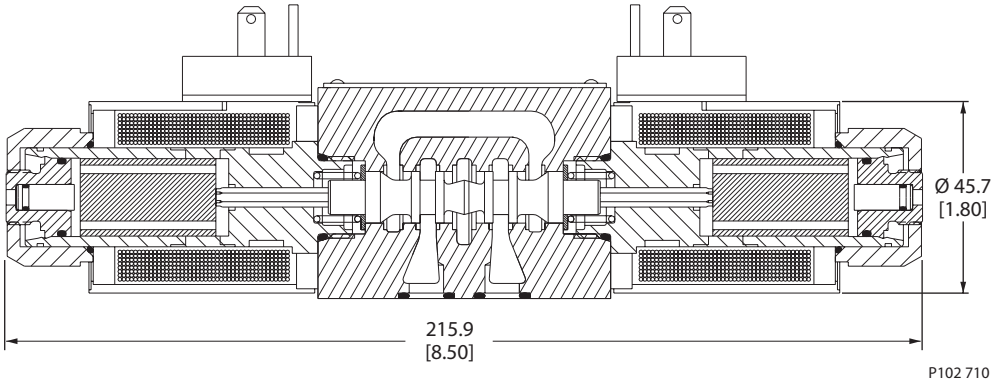
Schematic



DIMENSIONS

mm [in]

Cross-sectional view



P102 710

ORDERING INFORMATION

PDCV03-3Y11/15-12-E1-8S

Subplate option
OMIT = No subplate
8S = Aluminum, #8 SAE ports
S8S = Steel, #8 SAE ports

Termination
E1 = DIN 43650
E3 = Amp Jr.
E8 = Lead wires
E12 = Deutsch
E14 = Dual spade

Voltage
12 = 12 VDC
24 = 24 VDC

Nominal flow rate
15 = 15 L/min [4.0 gpm]
30 = 30 L/min [7.9 gpm]

Seal Kit

	Seal kit
B = Buna-N	158-8007
V = Viton	158-80062

Note : All internal seals are viton

Bolt Kit

#10-24 Thd.	158-8064
M5 Thd.	158-8026

P102 713E

Comatrol
RESPONSIVENESS IN MOTION
MEMBER OF THE SAUER-DANFOSS GROUP

Cartridge Valves Technical Information
Proportional Valves
Proportional Directional
PDCV05-3Y11

COMPLIANT

OPERATION

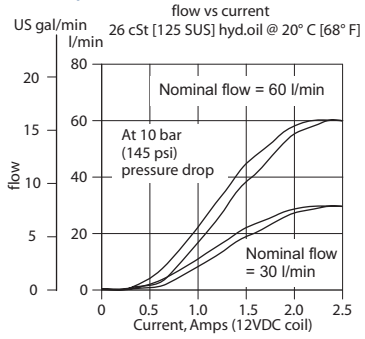
This is a non-compensated proportional directional control valve.

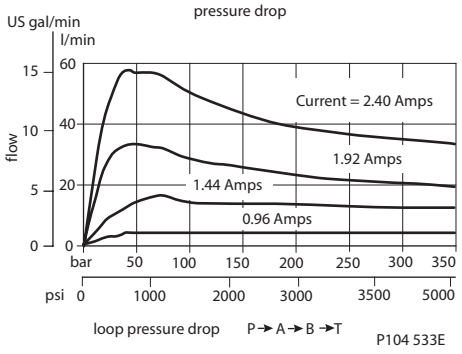
SPECIFICATIONS

Specifications

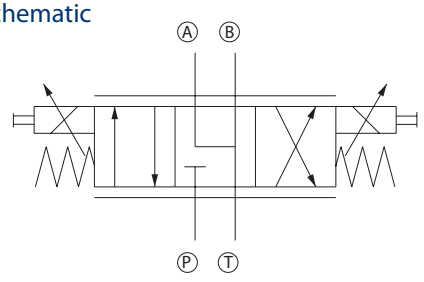
Rated pressure	320 bar [4600 psi]
Rated flow at 10 bar [150 psi]	60 l/min [16 US gal/min]
Weight	6.60 kg [14.60 lb]
Hysteresis	6% maximum
Threshold current	0.2 A (12 VDC coil) 0.1 A (24 VDC coil)
Maximum control current	1.8 A (12 VDC coil) 0.9 A (24 VDC coil)
Cavity	ISO D05
Standard Coil	PD05 23 Watt

Theoretical performance





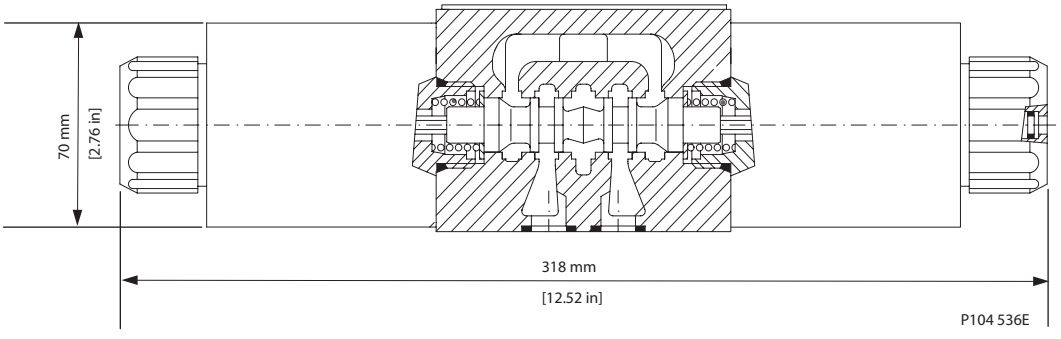
Schematic



DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

P-DCV05-3Y11/30-12-E1

Connector
E1 = DIN 43650
E8 = Lead wires
E10 = Deutsch on leads

Seal kit
B = Buna N 158-8023
V = Viton 158-8094
All internal seals are Viton

Nominal flow rate
30 = 30 l/min [7.9 US gal/min]
60 = 60 l/min [15.8 US gal/min]

Voltage
12 = 12 VDC
24 = 24 VDC

Bolt kit
1/4-20 Thd 158-8093
M6 Thd 158-8024

P103 986E

Comatrol
RESPONSIVENESS IN MOTION
MEMBER OF THE SAUER-DANFOSS GROUP

Cartridge Valves Technical Information
Proportional Valves
Proportional Flow Controls
CP518-PNC

COMPLIANT

OPERATION

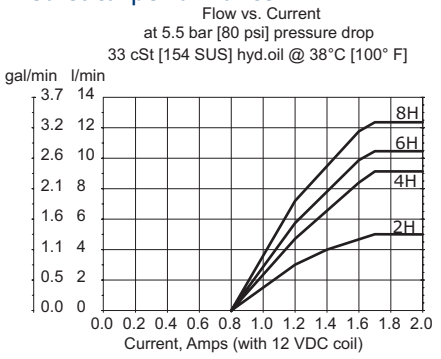
This valve is a non-compensated, normally-closed, proportional flow control.

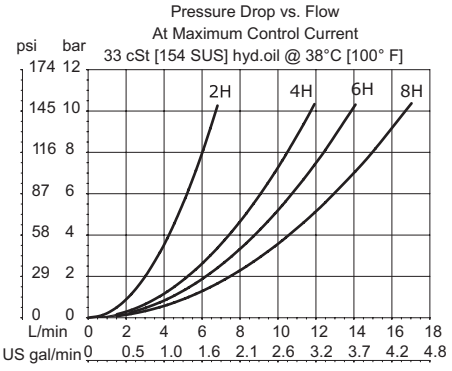
SPECIFICATIONS

Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 6 bar [80 psi]	12 l/min [3 US gal/min]
Weight	0.36 kg [0.80 lb]
Hysteresis	10% maximum
Threshold current	0.8 A (12 VDC coil) 0.4 A (24 VDC coil)
Maximum control current	1.8 A (12 VDC coil) 0.9 A (24 VDC coil)
Pressure differential	21 bar [300 psi] maximum
Cavity	SDC08-2
Standard Coil	M19P 22 Watt
Coil nut	173802114

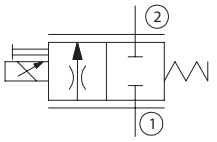
Theoretical performance





P102 940E

Schematic

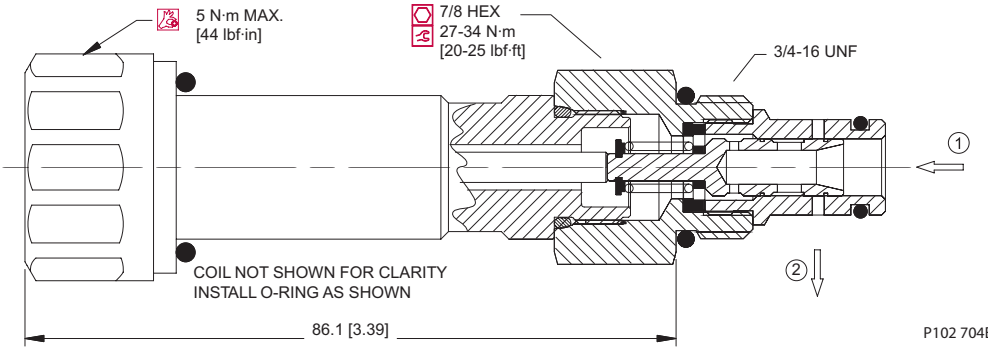


P104 832

DIMENSIONS

mm [in]

Cross-sectional view



P102 704E

ORDERING INFORMATION

CP518-PNC-U-6S-2H-24-DE

Seals
U = Urethane
Seal kits 120591

Termination
00 = No connector
DE = Deutsch
DN = DIN 43650
FL = Lead wires
AJ = AMP Jr

Voltage
00 = No coil
12 = 12 VDC
24 = 24 VDC

Flow code
2H = 5 l/min [1.3 US gal/min] at 5.5 bar [80 psi]
4H = 9 l/min [2.4 US gal/min]
6H = 11 l/min [2.9 US gal/min]
8H = 13 l/min [3.4 US gal/min]

Housing P/N
No Housing
CP08-2-4S
CP08-2-6S
SDC08-2-DG-2B
SDC08-2-DG-3B

Housing and ports
0 = Cartridge only
4S = AL, #4 SAE
6S = AL, #6 SAE
2B = AL,1/4 BSP
3B = AL, 3/8 BSP

P102 654E

Comatrol
RESPONSIVENESS IN MOTION
MEMBER OF THE SAUER-DANFOSS GROUP

Cartridge Valves Technical Information
Proportional Valves
Proportional Flow Controls
PSV10-NC

COMPLIANT

OPERATION

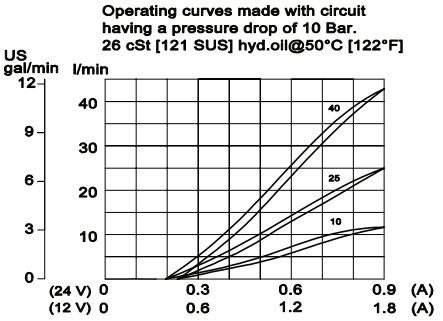
This is a normally-closed, direct-acting, spool-type, non-compensated, proportional flow-control. Controlled flow is from port 1 to 2.

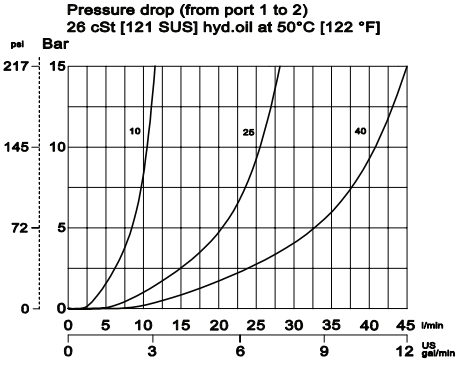
SPECIFICATIONS

Specifications

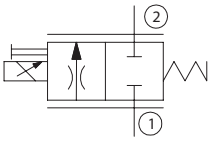
Rated pressure	260 bar [3770 psi]
Maximum flow at 10 bar [145 psi] pressure drop	PSV10-NC-10: 10 l/min [2.64 US gal/min] PSV10-NC-25: 25 l/min [6.6 US gal/min] PSV10-NC-40: 40 l/min [10.6 US gal/min]
Leakage	420 cm³/min [25.6 in³/min] @ at rated pressure
Weight	0.51 kg [1.12 lb]
Hysteresis	5% maximum
Threshold current	0.4 A (12 VDC coil) 0.2 A (24 VDC coil)
Maximum control current	1.8 A (12 VDC coil) 0.9 A (24 VDC coil)
Pressure differential	0 bar [0 psi] maximum
Cavity	SDC10-2
Standard Coil	M19P 22 Watt

Theoretical performance





Schematic

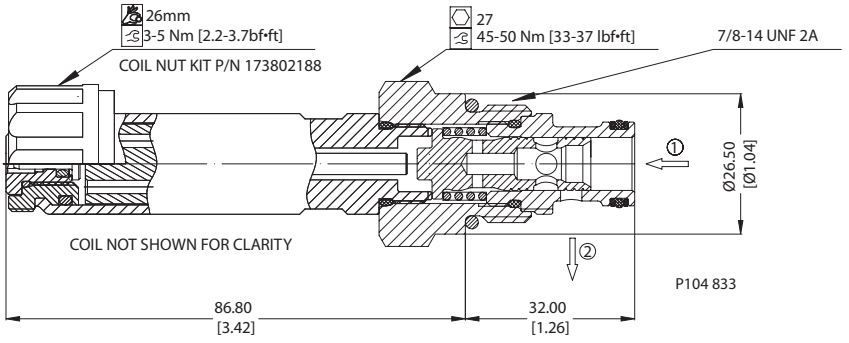


P104 832

DIMENSIONS

mm [in]

Cross-sectional view



P104 833

ORDERING INFORMATION

PSV10-NC-XX-12D-DN-B-00

Max regulated flow
10 = 10 l/min
25 = 25 l/min
40 = 40 l/min

Coil voltage
00 = No coil
12D = 12V DC
24D = 24V DC

Coil termination
00 = No coil
FL = Flying Lead
DN = ISO 4400 (DIN 43650)
DE = Deutsch

Body and Ports — **Body Nomenclature**
00 = no housing — No Body
6S = Al, #6 SAE — CP10-2-6S
8S = Al, #8 SAE — CP10-2-8S
DG3B = Al, 3/8 BSP — SDC10-2-DG3B
DG4B = Al, 1/2 BSP — SDC10-2-DG4B
Other housing available

Seals — **Seal Kit**
B = Buna-N seals — 35400401
V = Viton seals — 35400341

Comatrol
RESPONSIVENESS IN MOTION
MEMBER OF THE SAUER-DANFOSS GROUP

Cartridge Valves Technical Information
Proportional Valves
Proportional Flow Controls
PSV12-NC

COMPLIANT

OPERATION

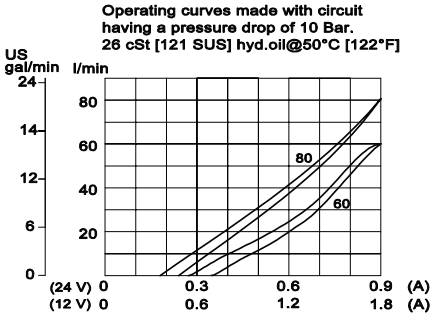
This is a normally-closed, direct-acting, spool-type, non-compensated, proportional flow-control. Controlled flow is from port 1 to 2.

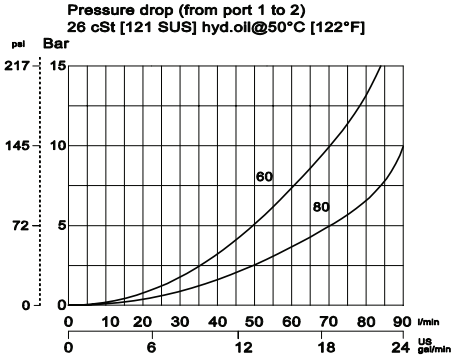
SPECIFICATIONS

Specifications

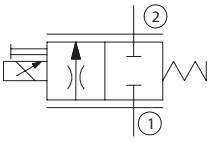
Rated pressure	260 bar [3770 psi]
Maximum flow at 10 bar [145 psi]	PSV12-NC-60: 60 l/min [15.85 US gal/min] PSV12-NC-80: 80 l/min [21.13 US gal/min]
Leakage	420 cm³/min [25.6 in³/min] @ at rated pressure
Weight	0.76 kg [1.68 lb]
Hysteresis	5% maximum
Threshold current	0.5 A (12 VDC coil) 0.25 A (24 VDC coil)
Maximum control current	1.8 A (12 VDC coil) 0.9 A (24 VDC coil)
Pressure differential	0 bar [0 psi] maximum
Cavity	SDC12-2
Standard Coil	D14E(35W) 35 Watt

Theoretical performance





Schematic

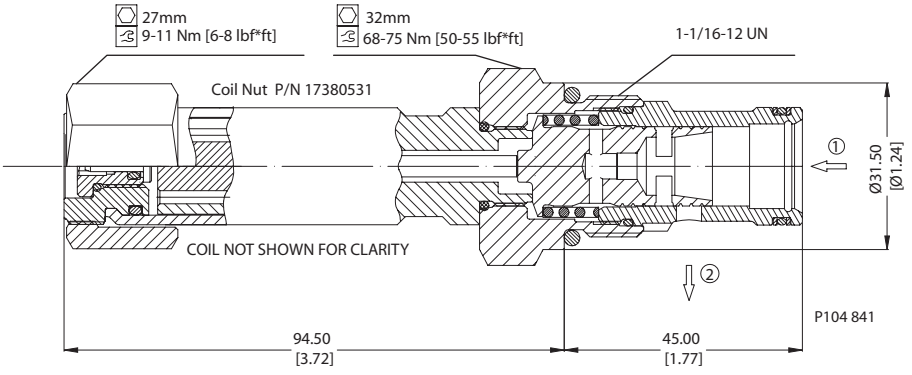


P104 832

DIMENSIONS

mm [in]

Cross-sectional view



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ORDERING INFORMATION

PSV12-NC-XX-12D-DN-B-00

Max regulated flow
60 = 60 l/min
80 = 80 l/min

Coil voltage
00 = No coil
12D = 12V DC
24D = 24V DC

Coil termination
00 = No coil
FL = Flying Lead
DN = ISO 4400 (DIN 43650)
DE = Deutsch
AJ = Amp Junior
AS = Amp Superseal

Body and Ports
00 = No housing
10S = Al, #10 SAE
12S = Al, #12 SAE
DG4B = Al, 1/2 BSP
DG6B = Al, 3/4 BSP
Other housing available

Body Nomencl.
No Body
CP12-2-10S
CP12-2-12S
SDC12-2-DG4B
SDC12-2-DG6B

Seals
B = Buna-N seals
V = Viton

Seal Kit
354008319
354008419

Comatrol
RESPONSIVENESS IN MOTION
MEMBER OF THE SAUER-DANFOSS GROUP

Cartridge Valves Technical Information
Proportional Valves
Proportional Flow Controls
PSV16-NC

COMPLIANT

OPERATION

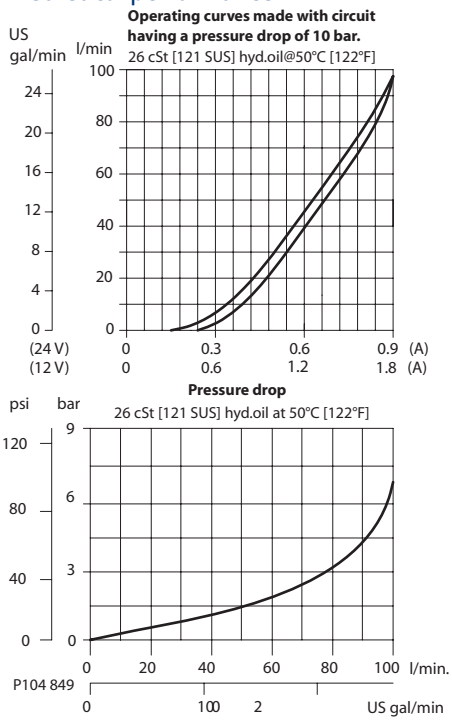
This is a normally-closed, direct-acting, spool-type, non-compensated, proportional flow-control. Controlled flow is from port 1 to 2.

SPECIFICATIONS

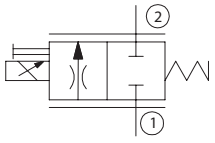
Specifications

Rated pressure	260 bar [3770 psi]
Rated flow at 10 bar [145 psi]	100 l/min [26 US gal/min]
Leakage	420 cm³/min [25.6 in³/min] @ at rated pressure
Weight	0.87 kg [1.92 lb]
Hysteresis	5% maximum
Threshold current	0.5 A (12 VDC coil) 0.25 A (24 VDC coil)
Maximum control current	1.8 A (12 VDC coil) 0.9 A (24 VDC coil)
Pressure differential	0 bar [0 psi] maximum
Cavity	SDC16-2
Standard Coil	D14E(35W) 35 Watt

Theoretical performance



Schematic

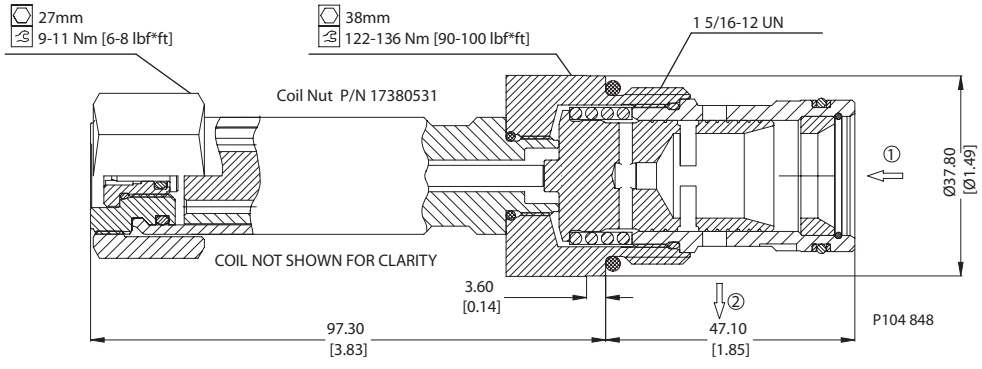


P104 832

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

PSV16-NC-100-12D-DN-B-00

Max regulated flow
100 = 100 l/min

Coil voltage
00 = No coil
12D = 12V DC
24D = 24V DC

Coil termination
00 = No coil
FL = Flying Lead
DN = ISO 4400 (DIN 43650)
DE = Deutsch
AJ = Amp Junior
AS = Amp Superseal

Body and Ports
00 = No housing
DG6B = Al, 3/4 BSP
DG8B = Al, 1 BSP
12S = Al, #12 SAE
16S = Al, #16 SAE
Other housing available

Body Nomencl.
No Body
SDC16-2-DG-6B
SDC16-2-DG-8B
CP16-2-12S
CP16-2-16S

Seals
B = Buna-N seals
V = Viton

Seal Kit
354008719
354008819

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Comatrol
RESPONSIVENESS IN MOTION
MEMBER OF THE SAUER-DANFOSS GROUP

Cartridge Valves Technical Information
Proportional Valves
Proportional Flow Controls
PSVP10-NCR

COMPLIANT

OPERATION

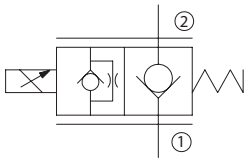
This is a non-compensated, normally-closed, pilot-operated, poppet-type, proportional flow-control. Controlled flow is from port 2 to 1.

SPECIFICATIONS

Specifications

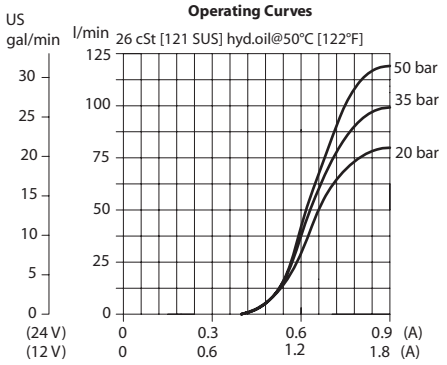
Rated pressure	260 bar [3770 psi]
Rated flow at 10 bar [150 psi]	55 l/min [14 US gal/min]
Leakage	6 drops/min @ at rated pressure
Weight	0.54 kg [1.19 lb]
Hysteresis	8% maximum
Threshold current	0.8 A (12 VDC coil) 0.4 A (24 VDC coil)
Maximum control current	1.8 A (12 VDC coil) 0.9 A (24 VDC coil)
Pressure differential	0 bar [0 psi] maximum
Cavity	SDC10-2
Standard Coil	M19P 22 Watt

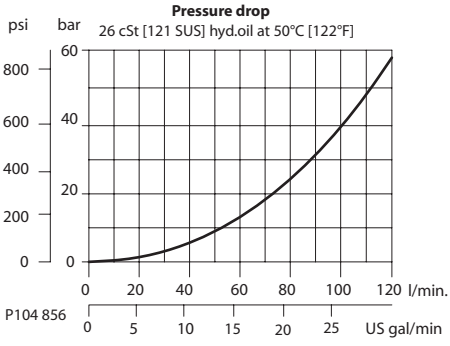
Schematic



P104 854

Theoretical performance



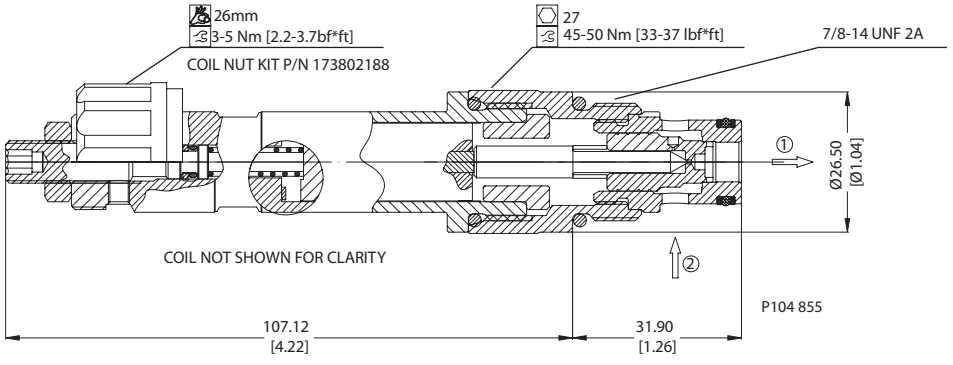


P104 856

DIMENSIONS

mm [in]

Cross-sectional view



P104 855

ORDERING INFORMATION

PSVP10-NCR-12D-DN-B-00

Coil voltage
00 = No coil
12D = 12V DC
24D = 24V DC

Coil termination
00 = No coil
FL = Flying Lead
DN = ISO 4400 (DIN 43650)
DE = Deutsch
AJ = AMP Jr

Body and Ports
00 = No housing
6S = Al, #6 SAE
8S = Al, #8 SAE
DG3B = Al, 3/8 BSP
DG4B = Al, 1/2 BSP
Other housing available

Seals **Seal Kit**
B = Buna-N seals 354004019
V = Viton seals 354003419

Body Nomenclature
No Body
CP10-2-6S
CP10-2-8S
SDC10-2-DG3B
SDC10-2-DG4B

P104 857

Comatrol
RESPONSIVENESS IN MOTION
MEMBER OF THE SAUER-DANFOSS GROUP

Cartridge Valves Technical Information
Proportional Valves
Proportional Flow Controls
PSVP12-NCR

COMPLIANT

OPERATION

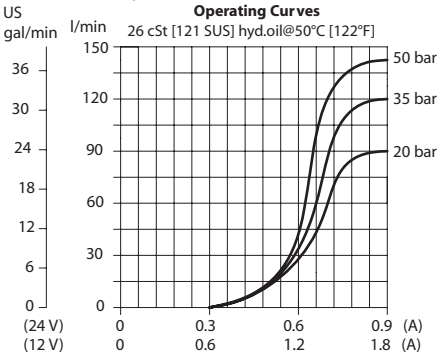
This is a non-compensated, normally-closed, pilot-operated, poppet-type, proportional flow-control. Controlled flow is from port 2 to 1.

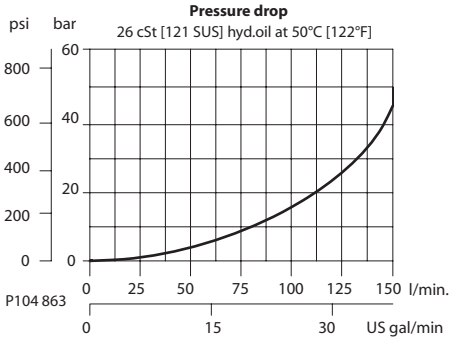
SPECIFICATIONS

Specifications

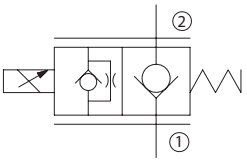
Rated pressure	260 bar [3770 psi]
Rated flow at 10 bar [150 psi]	70 l/min [18 US gal/min]
Leakage	6 drops/min @ at rated pressure
Weight	0.60 kg [1.32 lb]
Hysteresis	8% maximum
Pressure differential	0 bar [0 psi] maximum
Cavity	SDC12-2
Standard Coil	M19P 22 Watt

Theoretical performance





Schematic

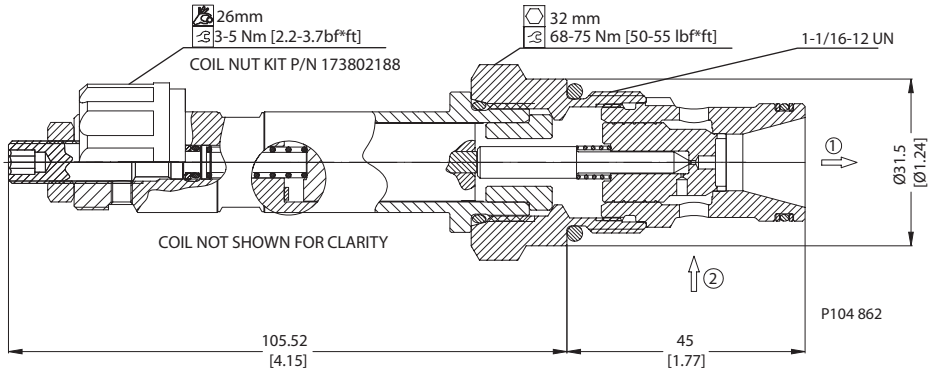


P104 854

DIMENSIONS

mm [in]

Cross-sectional view



P104 862

ORDERING INFORMATION

PSVP12-NCR-12D-DN-B-00

Coil voltage
00 = No coil
12D = 12V DC
24D = 24V DC

Coil termination
00 = No coil
FL = Flying Lead
DN = ISO 4400 (DIN 43650)
DE = Deutsch
AJ = AMP Jr

Body and Ports
00 = No housing
10S = Al, #10 SAE
12S = Al, #12 SAE
4B = Al, 1/2 BSP
6B = Al, 3/4 BSP
Other housing available

Body Nomencl.
No Body
CP12-3-10S
CP12-3-12S
CP12-3-4B
CP12-3-6B

Seals **Seal Kit**
B = Buna-N seals 354008319
V = Viton 354008419

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Comatrol
RESPONSIVENESS IN MOTION
MEMBER OF THE SAUER-DANFOSS GROUP

Cartridge Valves Technical Information
Proportional Valves
Proportional Flow Controls
PSVP16-NCR

COMPLIANT

OPERATION

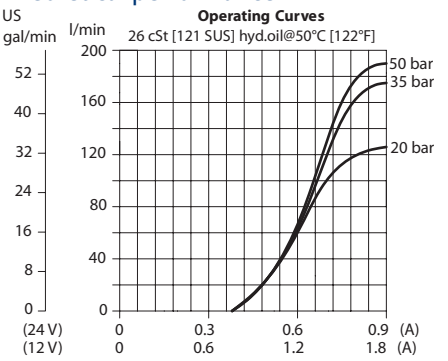
This is a non-compensated, normally-closed, pilot-operated, poppet-type, proportional flow-control. Controlled flow is from port 2 to 1.

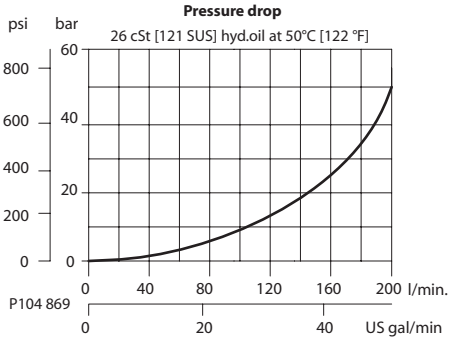
SPECIFICATIONS

Specifications

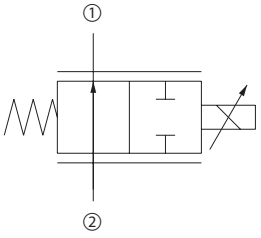
Rated pressure	260 bar [3770 psi]
Rated flow at 10 bar [150 psi]	100 l/min [26 US gal/min]
Leakage	6 drops/min @ at rated pressure
Weight	0.85 kg [1.87 lb]
Hysteresis	8% maximum
Pressure differential	0 bar [0 psi] maximum
Cavity	SDC16-2
Standard Coil	M19P 22 Watt

Theoretical performance





Schematic

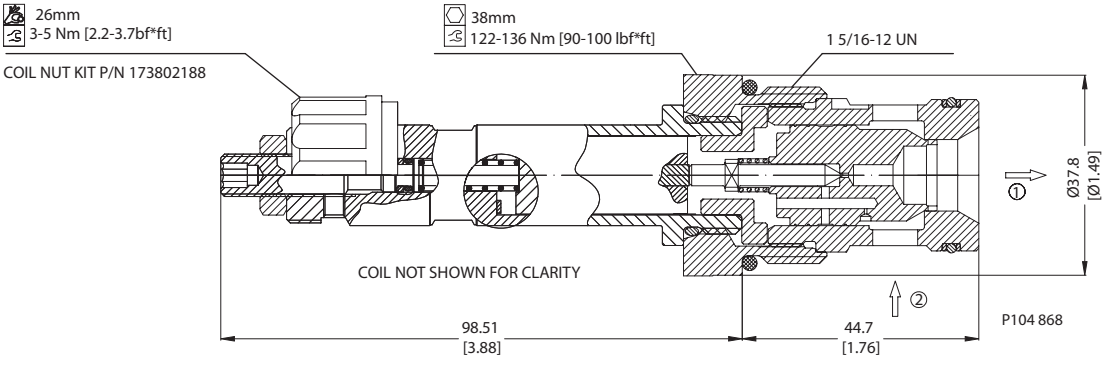


P102 660

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

PSVP16-NCR-12D-DN-B-00

Coil voltage
00 = No coil
12D = 12V DC
24D = 24V DC

Coil termination
00 = No coil
FL = Flying Lead
DN = ISO 4400 (DIN 43650)
DE = Deutsch
AJ = AMP Jr

Body and Ports
00 = No housing
DG6B = Al, 3/4 BSP
DG8B = Al, 1 BSP
12S = Al, #12 SAE
16S = Al, #16 SAE
Other housing available

Body Nomencl.
No Body
SDC16-2-DG-6B
SDC16-2-DG-8B
CP16-2-12S
CP16-2-16S

Seals
B = Buna-N seals
V = Viton

Seal Kit
354008719
354008819

P104 870

Comatrol
RESPONSIVENESS IN MOTION
MEMBER OF THE SAUER-DANFOSS GROUP

Cartridge Valves Technical Information
Proportional Valves
Proportional Flow Controls
CP518-PNO

COMPLIANT

OPERATION

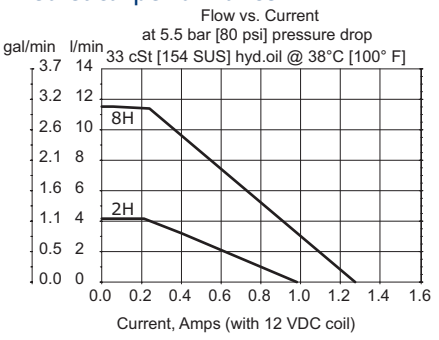
This valve is a non-compensated, normally-open, proportional flow control.

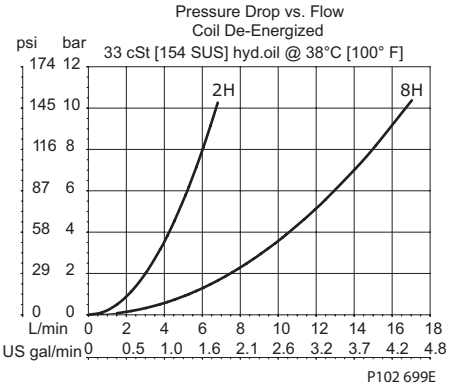
SPECIFICATIONS

Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 6 bar [80 psi]	12 l/min [3 US gal/min]
Weight	0.36 kg [0.80 lb]
Hysteresis	4% maximum
Threshold current	0.2 A (12 VDC coil) 0.1 A (24 VDC coil)
Maximum control current	1.2 A (12 VDC coil) 0.6 A (24 VDC coil)
Pressure differential	21 bar [300 psi] maximum
Cavity	SDC08-2
Standard Coil	M19P 22 Watt
Coil nut	173802114

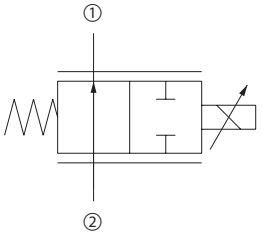
Theoretical performance





P102 699E

Schematic

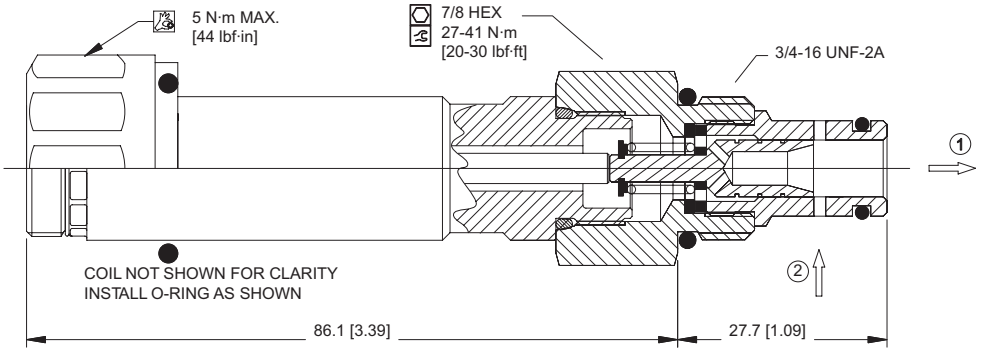


P102 660

DIMENSIONS

mm [in]

Cross-sectional view



P102 703E

ORDERING INFORMATION

CP518-PNO-U-6S-2H-24-DE

Seals
U = Urethane
Seal kits
120591

Housing and ports
0 = Cartridge only
4S = AL, #4 SAE
6S = AL, #6 SAE
2B = AL,1/4 BSP
3B = AL, 3/8 BSP

Housing P/N
No Housing
CP08-2-4S
CP08-2-6S
SDC08-2-DG-2B
SDC08-2-DG-3B

Flow code
2H
8H

Voltage
00 = No coil
12 = 12 VDC
24 = 24 VDC

Termination
00 = No connector
DE = Deutsch
DN = DIN 43650
FL = Lead wires
AJ = AMP Jr

P102 655E

Comatrol
RESPONSIVENESS IN MOTION
MEMBER OF THE SAUER-DANFOSS GROUP

Cartridge Valves Technical Information
Proportional Valves
Proportional Flow Controls
PSV10-NO

COMPLIANT

OPERATION

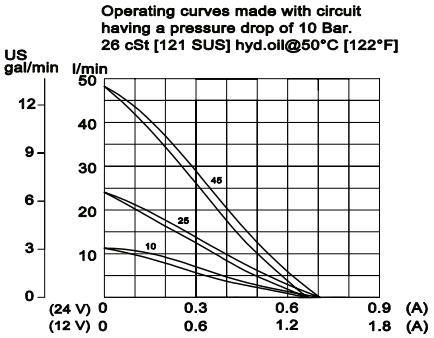
This is a normally-open, direct-acting, spool-type, non-compensated, proportional flow-control. Controlled flow is from port 1 to 2.

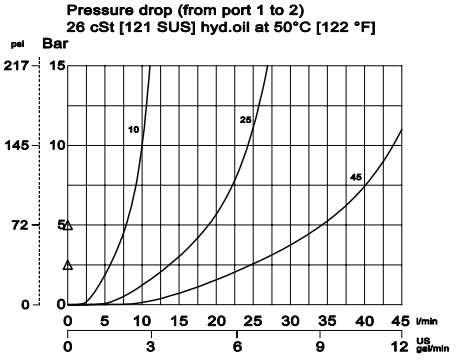
SPECIFICATIONS

Specifications

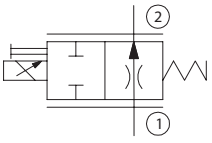
Rated pressure	260 bar [3770 psi]
Maximum flow at 10 bar [145 psi]	PSV10-NO-10: 10 l/min [2.64 US gal/min] PSV10-NO-25: 25 l/min [6.6 US gal/min] PSV10-NO-40: 40 l/min [10.6 US gal/min]
Leakage	420 cm³/min [25.6 in³/min] @ at rated pressure
Weight	0.51 kg [1.12 lb]
Hysteresis	5% maximum
Threshold current	0.1 A (12 VDC coil) 0.05 A (24 VDC coil)
Maximum control current	1.8 A (12 VDC coil) 0.9 A (24 VDC coil)
Pressure differential	0 bar [0 psi] maximum
Cavity	SDC10-2
Standard Coil	M19P 22 Watt

Theoretical performance





Schematic

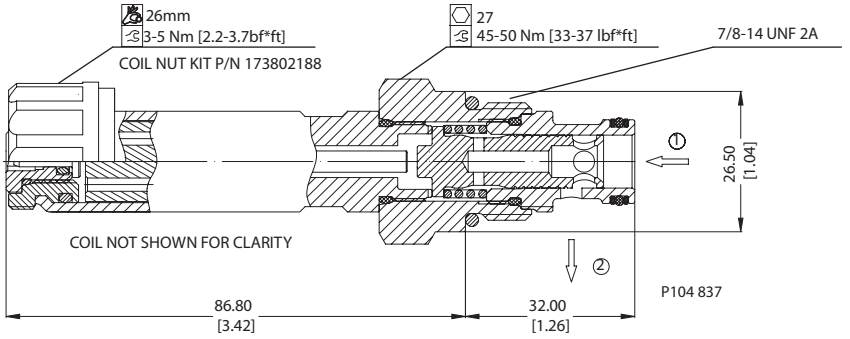


P104 836

DIMENSIONS

mm [in]

Cross-sectional view



P104 837

ORDERING INFORMATION

PSV10-NO-XX-12D-DN-B-00

Max regulated flow
10 = 10 l/min
25 = 25 l/min
45 = 45 l/min

Coil voltage
00 = No coil
12D = 12V DC
24D = 24V DC

Coil termination
00 = No coil
FL = Flying Lead
DN = ISO 4400 (DIN 43650)
DE = Deutsch

Body and Ports
Omit = Cartridge only
6S = Al #6 SAE
8S = Al, #8 SAE
DG3B = Al, 3/8 BSP
DG4B = Al, 1/2 BSP
Hother housing available

Body Nomenclature
No Body
CP10-2-6S
CP10-2-8S
SDC10-2-DG3B
SDC10-2-DG4B

Seals
B = Buna-N seals
V = Viton seals

Seal Kit
35400401
35400341

Comatrol
RESPONSIVENESS IN MOTION
MEMBER OF THE SAUER-DANFOSS GROUP

Cartridge Valves Technical Information
Proportional Valves
Proportional Flow Controls
PSV12-NO

COMPLIANT

OPERATION

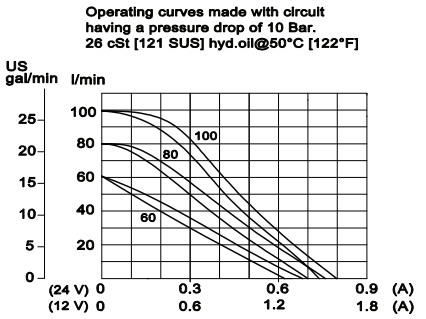
This is a normally-open, direct-acting, spool-type, non-compensated, proportional flow-control. Controlled flow is from port 1 to 2.

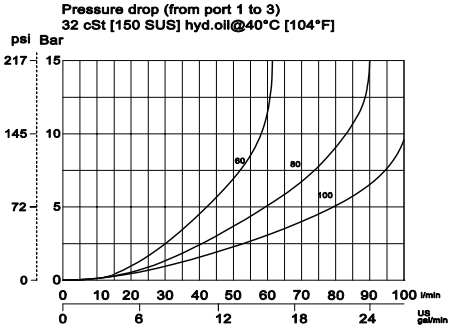
SPECIFICATIONS

Specifications

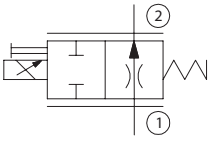
Rated pressure	260 bar [3770 psi]
Maximum flow at 10 bar [145 psi]	PSV12-NO-60: 60 l/min [15.85 US gal/min] PSV12-NO-80: 80 l/min [31.13 US gal/min] PSV12-NO-100: 100 l/min [26.41 US gal/min]
Leakage	420 cm³/min [25.6 in³/min] @ at rated pressure
Weight	0.76 kg [1.68 lb]
Hysteresis	5% maximum
Threshold current	0.3 A (12 VDC coil) 0.15 A (24 VDC coil)
Maximum control current	1.8 A (12 VDC coil) 0.9 A (24 VDC coil)
Pressure differential	0 bar [0 psi] maximum
Cavity	SDC12-2
Standard Coil	D14E(35W) 35 Watt

Theoretical performance





Schematic

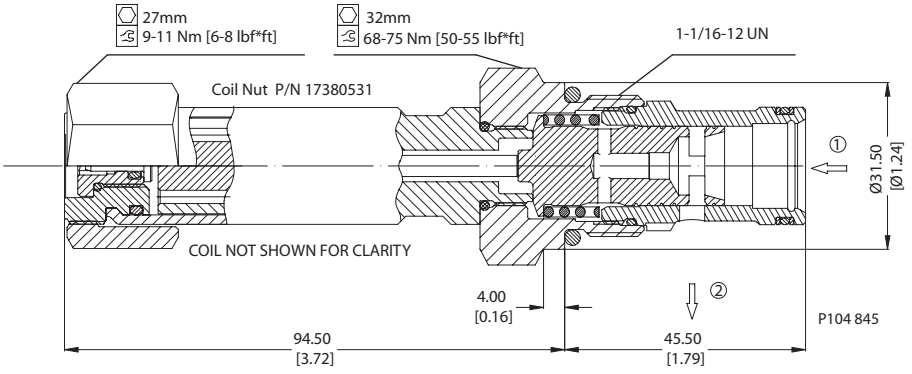


P104 836

DIMENSIONS

mm [in]

Cross-sectional view



P104 845

ORDERING INFORMATION

PSV12-NO-XX-12D-DN-B-00

Max regulated flow
60 = 60 l/min
80 = 80 l/min
100 = 100 l/min

Coil voltage
00 = No coil
12D = 12V DC
24D = 24V DC

Coil termination
00 = No coil
FL = Flying Lead
DN = ISO 4400 (DIN 43650)
DE = Deutsch
AJ = Amp Junior
AS = Amp superseal

Body and Ports
00 = No housing
10S = Al, #10 SAE
12S = Al, #12 SAE
DG4B = Al, 1/2 BSP
DG6B = Al, 3/4 BSP
Other housing available

Body Nomencl.
No Body
CP12-2-10S
CP12-2-12S
SDC12-2-DG4B
SDC12-2-DG6B

Seals
B = Buna-N seals
V = Viton

Seal Kit
354008319
354008419

Comatrol
RESPONSIVENESS IN MOTION
MEMBER OF THE SAUER-DANFOSS GROUP

Cartridge Valves Technical Information
Proportional Valves
Proportional Flow Controls
PSVP10-NOR

COMPLIANT

OPERATION

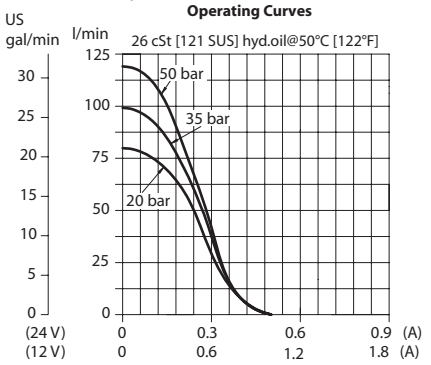
This is a non-compensated, normally-open, pilot-operated, poppet-type, proportional flow-control. Controlled flow is from port 2 to 1.

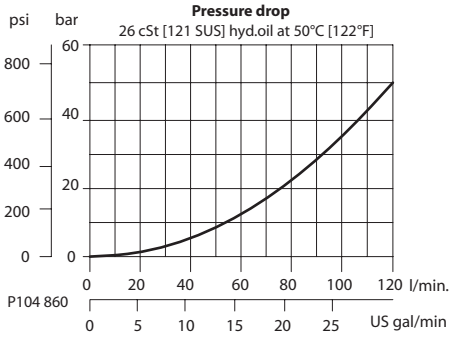
SPECIFICATIONS

Specifications

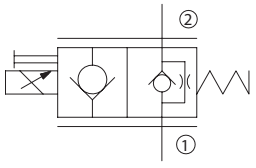
Rated pressure	260 bar [3770 psi]
Rated flow at 10 bar [2600150 psi]	45 l/min [12 US gal/min]
Leakage	6 drops/min @ at rated pressure
Weight	0.54 kg [1.19 lb]
Hysteresis	8% maximum
Pressure differential	0 bar [0 psi] maximum
Cavity	SDC10-2
Standard Coil	M19P 22 Watt

Theoretical performance





Schematic

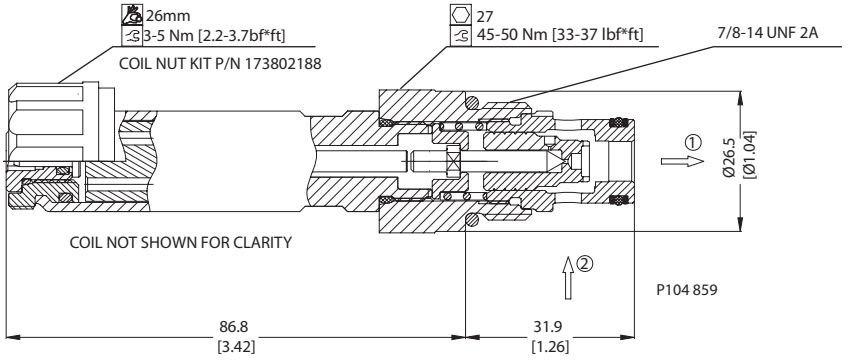


P104 858

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

PSVP10-NOR-12D-DN-B-00

Coil voltage
00 = No coil
12D = 12V DC
24D = 24V DC

Coil termination
00 = No coil
FL = Flying Lead
DN = ISO 4400 (DIN 43650)
DE = Deutsch
AJ = AMP Jr

Body and Ports
00 = No housing
6S = Al, #6 SAE
8S = Al, #8 SAE
DG3B = Al, 3/8 BSP
DG4B = Al, 1/2 BSP
Other housing available

Body Nomenclature
No Body
CP10-2-6S
CP10-2-8S
SDC10-2-DG3B
SDC10-2-DG4B

Seals
B = Buna-N seals
V = Viton seals

Seal Kit
354004019
354003419

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Comatrol
RESPONSIVENESS IN MOTION
MEMBER OF THE SAUER-DANFOSS GROUP

Cartridge Valves Technical Information
Proportional Valves
Proportional Flow Controls
PSVP12-NOR

COMPLIANT

OPERATION

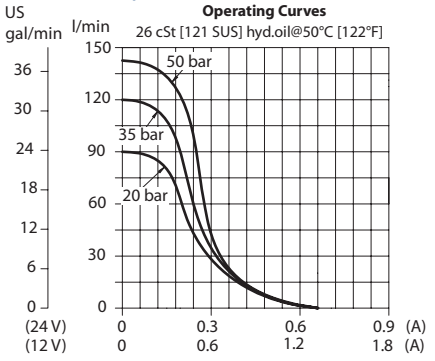
This is a non-compensated, normally-open, pilot-operated, poppet-type, proportional flow-control. Controlled flow is from port 2 to 1.

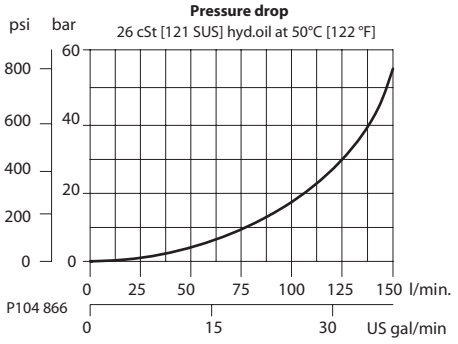
SPECIFICATIONS

Specifications

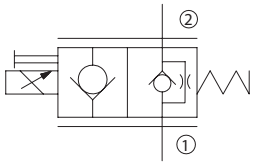
Rated pressure	260 bar [3770 psi]
Rated flow at 10 bar [150 psi]	70 l/min [18 US gal/min]
Leakage	6 drops/min @ at rated pressure
Weight	0.60 kg [1.32 lb]
Hysteresis	8% maximum
Pressure differential	0 bar [0 psi] maximum
Cavity	SDC12-2
Standard Coil	M19P 22 Watt

Theoretical performance





Schematic

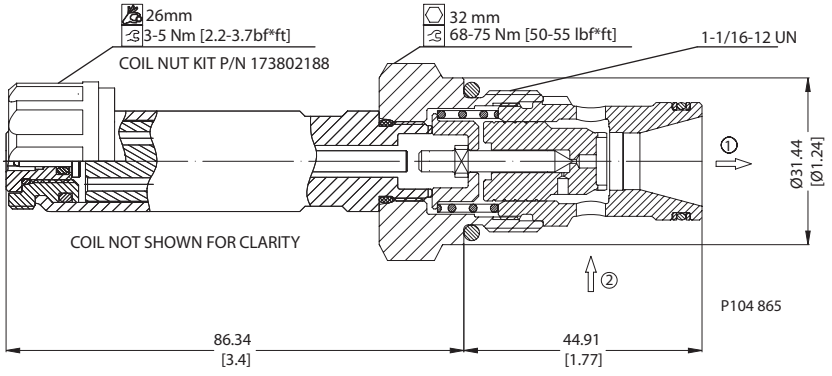


P104 858

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

PSVP12-NOR-12D-DN-B-00

Coil voltage
00 = No coil
12D = 12V DC
24D = 24V DC

Coil termination
00 = No coil
FL = Flying Lead
DN = ISO 4400 (DIN 43650)
DE = Deutsch
AJ = AMP Jr

Body and Ports
00 = No housing
10S = Al, #10 SAE
12S = Al, #12 SAE
4B = Al, 1/2 BSP
6B = Al, 3/4 BSP
Other housing available

Body Nomencl.
No Body
CP12-3-10S
CP12-3-12S
CP12-3-4B
CP12-3-6B

Seals
B = Buna-N seals
V = Viton

Seal Kit
354008319
354008419

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Comatrol
RESPONSIVENESS IN MOTION
MEMBER OF THE SAUER-DANFOSS GROUP

Cartridge Valves Technical Information
Proportional Valves
Proportional Flow Controls
PSVP16-NOR

COMPLIANT

OPERATION

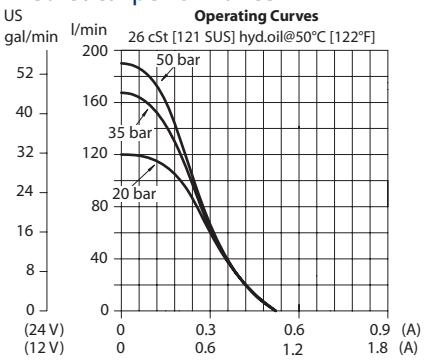
This is a non-compensated, normally-open, pilot-operated, poppet-type, proportional flow-control. Controlled flow is from port 2 to 1.

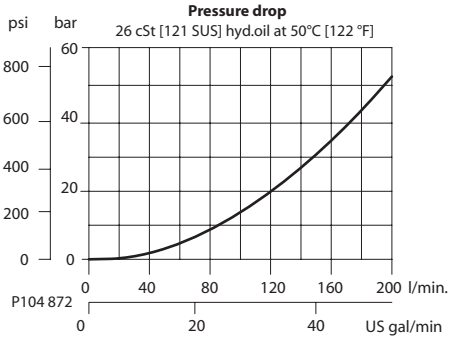
SPECIFICATIONS

Specifications

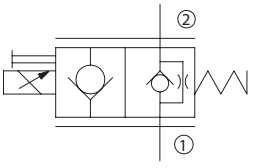
Rated pressure	260 bar [3770 psi]
Rated flow at 10 bar [150 psi]	80 l/min [21 US gal/min]
Leakage	6 drops/min @ at rated pressure
Weight	0.85 kg [1.87 lb]
Hysteresis	8% maximum
Pressure differential	0 bar [0 psi] maximum
Cavity	SDC16-2
Standard Coil	M19P 22 Watt

Theoretical performance





Schematic

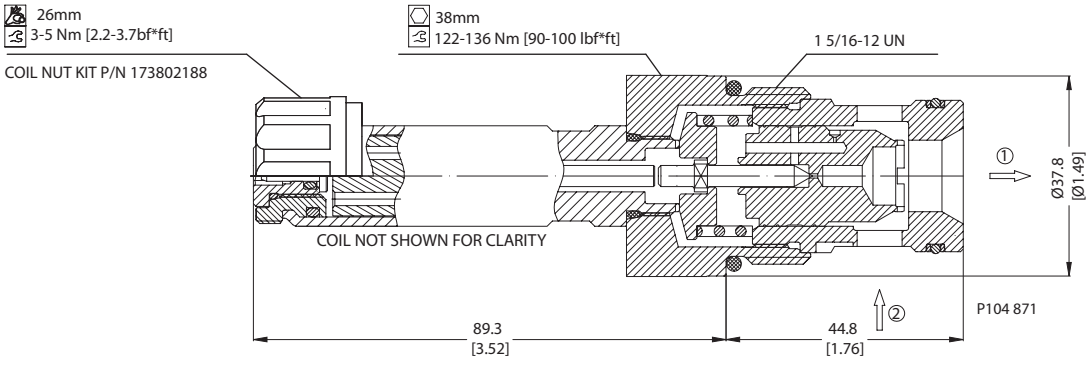


P104 858

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

PSVP16-NOR-12D-DN-B-00

Coil voltage
00 = No coil
12D = 12V DC
24D = 24V DC

Coil termination
00 = No coil
FL = Flying Lead
DN = ISO 4400 (DIN 43650)
DE = Deutsch
AJ = AMP Jr

Body and Ports
00 = No housing
DG6B = Al, 3/4 BSP
DG8B = Al, 1 BSP
12S = Al, #12 SAE
16S = Al, #16 SAE
Hother housing available

Body Nomencl.
No Body
SDC16-2-DG-6B
SDC16-2-DG-8B
CP16-2-12S
CP16-2-16S

Seals
B = Buna-N seals
V = Viton

Seal Kit
354008719
354008819

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Comatrol
RESPONSIVENESS IN MOTION
MEMBER OF THE SAUER-DANFOSS GROUP

Cartridge Valves Technical Information
Proportional Valves
Proportional Flow Controls
PFC10-RC

COMPLIANT

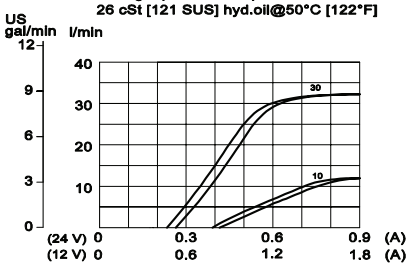
OPERATION

This is a pressure-compensated, restrictive-type, normally-closed, spool-type, proportional flow-control. Controlled flow is from port 1 to 2.

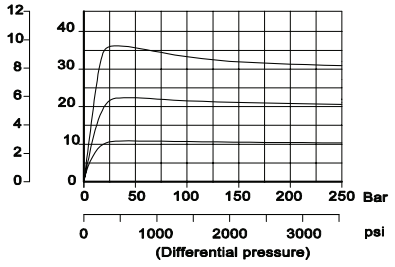
SPECIFICATIONS

Rated pressure	260 bar [3770 psi]
Maximum flow at rated pressure	PFC10-RC-10: 10 l/min [2.64 US gal/min] PFC10-RC-30: 30 l/min [7.9 US gal/min]
Leakage	420 cm³/min [25.6 in³/min] @ at rated pressure
Weight	0.65 kg [1.43 lb]
Hysteresis	8% maximum
Threshold current	0.5 A (12 VDC coil) 0.25 A (24 VDC coil)
Maximum control current	1.8 A (12 VDC coil) 0.9 A (24 VDC coil)
Pressure differential	0 bar [0 psi] maximum
Cavity	SDC10-2
Standard Coil	M19P 22 Watt

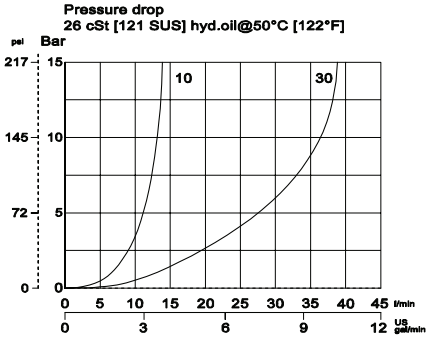
Operating curves made with circuit having a pressure drop of 50 Bar.
26 cSt [121 SUS] hyd.oil@50°C [122°F]



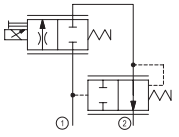
Pressure compensation from Inlet to work port at Max current
26 cSt [121 SUS] hyd.oil@50°C [122°F]



Pressure drop
26 cSt [121 SUS] hyd.oil@50°C [122°F]



Schematic



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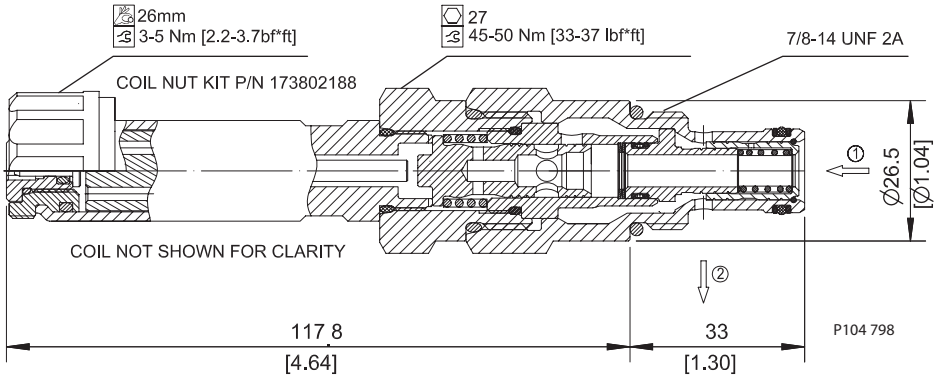
DIMENSIONS

mm [in]

Cross-sectional view



P104 798

ORDERING INFORMATION

PFC10-RC-XX-12D-DN-B-00

Max regulated flow
10 = 10 l/min
30 = 30 l/min

Coil voltage
00 = No coil
12D = 12V DC
24D = 24V DC

Coil termination
00 = No coil
FL = Flying Lead
DN = ISO 4400 (DIN 43650)
DE = Deutsch

Body and Ports
00 = No housing
6S = Al, #6 SAE
8S = Al, #8 SAE
DG3B = Al, 3/8 BSP
DG4B = Al, 1/2 BSP
Other housing available

Seals
B = Buna-N seals
V = Viton seals

Seal Kit
35400401
35400341

Body Nomenclature
No Body
CP10-2-6S
CP10-2-8S
SDC10-2-DG3B
SDC10-2-DG4B

Comatrol
RESPONSIVENESS IN MOTION
MEMBER OF THE SAUER-DANFOSS GROUP

Cartridge Valves Technical Information
Proportional Valves
Proportional Flow Controls
PFC12-RC

COMPLIANT

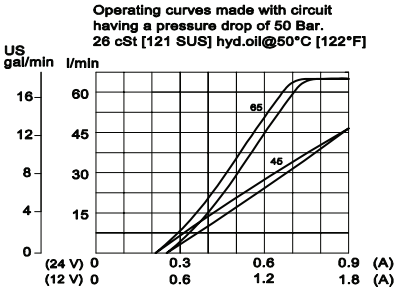
OPERATION

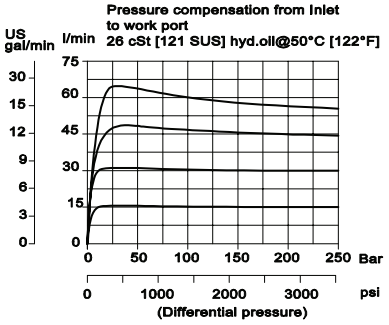
This is a pressure-compensated, restrictive-type, normally-closed, spool-type, proportional flow-control. Controlled flow is from port 1 to 2.

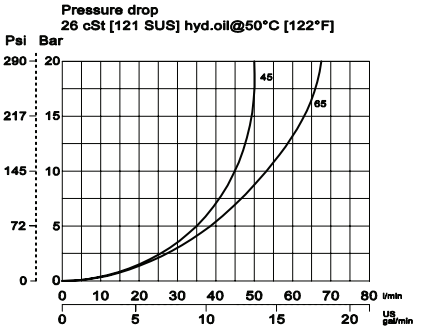
SPECIFICATIONS

Specifications

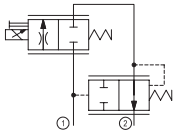
Rated pressure	260 bar [3770 psi]
Maximum flow at rated pressure	PFC12-RC-45: 45 l/min [11.9 US gal/min] PFC12-RC-65: 65 l/min [17.17 US gal/min]
Leakage	420 cm³/min [25.6 in³/min] @ at rated pressure
Weight	0.77 kg [1.70 lb]
Hysteresis	8% maximum
Threshold current	0.3 A (12 VDC coil) 0.15 A (14 VDC coil)
Maximum control current	1.8 A (12 VDC coil) 0.9 A (14 VDC coil)
Pressure differential	0 bar [0 psi] maximum
Cavity	SDC12-2
Standard Coil	D14E(35W) 35 Watt







Schematic

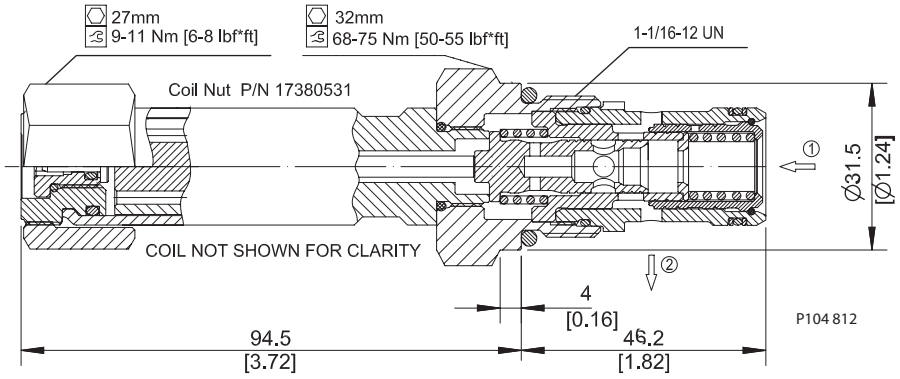


P104 797

DIMENSIONS

mm [in]

Cross-sectional view



P104 812

ORDERING INFORMATION

PFC12-RC-XX-12D-DN-B-00

Max regulated flow
45 = 45 l/min
65 = 65 l/min

Coil voltage
00 = No coil
12D = 12V DC
24D = 24V DC

Coil termination
00 = No coil
FL = Flying Lead
DN = ISO 4400 (DIN 43650)
DE = Deutsch
AJ = Amp Junior
AS = Amp Superseal

Body and Ports
00 = No housing
10S = Al, #10 SAE
12S = Al, #12 SAE
DG4B = Al, 1/2 BSP
DG6B = Al, 3/4 BSP
Other housing available

Body Nomencl.
No Body
CP12-2-10S
CP12-2-12S
SDC12-2-DG4B
SDC12-2-DG6B

Seals
B = Buna-N seals
V = Viton

Seal Kit
354008319
354008419

Comatrol
RESPONSIVENESS IN MOTION
MEMBER OF THE SAUER-DANFOSS GROUP

Cartridge Valves Technical Information
Proportional Valves
Proportional Flow Controls
PFC16-RC

COMPLIANT

OPERATION

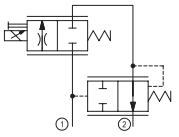
This is a pressure-compensated, restrictive-type, normally-closed, spool-type, proportional flow control. Controlled flow is from port 1 to 2.

SPECIFICATIONS

Specifications

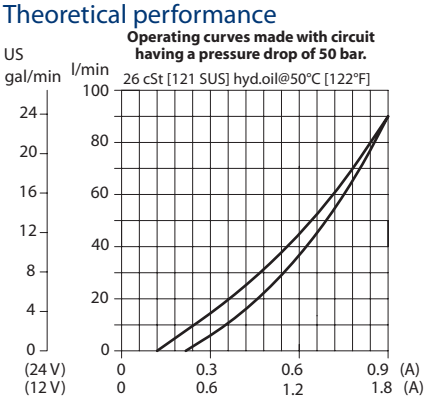
Rated pressure	260 bar [3770 psi]
Rated flow at 260 bar [3771 psi]	90 l/min [24 US gal/min]
Leakage	420 cm³/min [25.6 in³/min] @ at rated pressure
Weight	0.91 kg [2.01 lb]
Hysteresis	8% maximum
Threshold current	0.4 A (12 VDC coil) 0.2 A (24 VDC coil)
Maximum control current	1.8 A (12 VDC coil) 0.9 A (24 VDC coil)
Pressure differential	0 bar [0 psi] maximum
Cavity	SDC16-2
Standard Coil	D14E(35W) 35 Watt

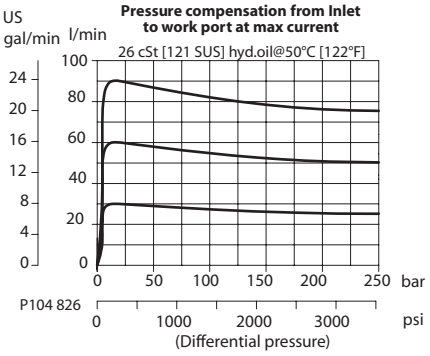
Schematic



P104 797

Theoretical performance

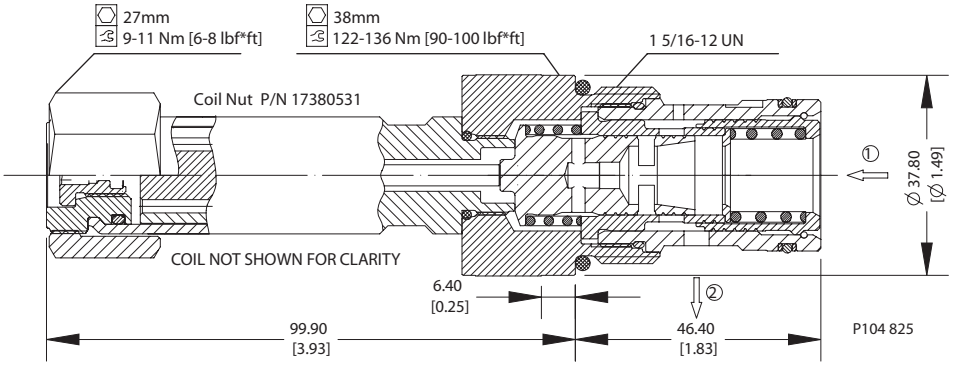




DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

PFC16-RC-90-12D-DN-B-00

Max regulated flow
90 = 90 l/min

Coil voltage
00 = No coil
12D = 12V DC
24D = 24V DC

Coil termination
00 = No coil
FL = Flying Lead
DN = ISO 4400 (DIN 43650)
DE = Deutsch
AJ = Amp Junior
AS = Amp Superseal

Body and Ports
00 = No housing
DG6B = Al, 3/4 BSP
DG8B = Al, 1 BSP
12S = Al, #12 SAE
16S = Al, #16 SAE
Other housing available

Seals
B = Buna-N seals
V = Viton

Seal Kit
354008719
354008819

Body Nomencl.
No Body
SDC16-2-DG-6B
SDC16-2-DG-8B
CP16-2-12S
CP16-2-16S

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Comatrol
RESPONSIVENESS IN MOTION
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Cartridge Valves Technical Information
Proportional Valves
Proportional Flow Controls
PFC10-RO

COMPLIANT

OPERATION

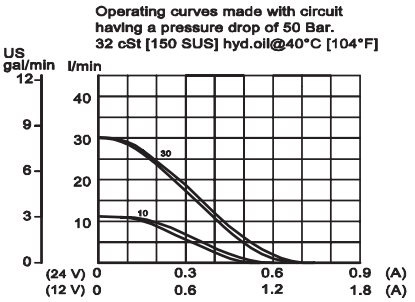
This is a pressure-compensated, restrictive-type, normally-open, spool-type, proportional flow-control. Controlled flow is from port 1 to 2.

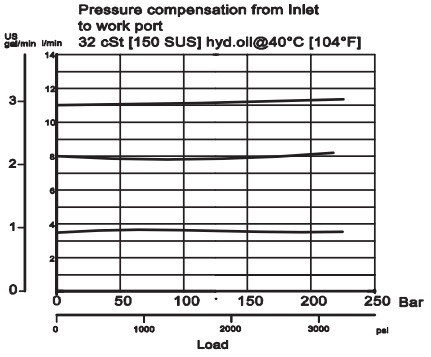
SPECIFICATIONS

Specifications

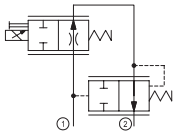
Rated pressure	260 bar [3770 psi]
maximum flow at rated pressure	PFC10-RO-10: 10 l/min [2.64 US gal/min] PFC10-RO-30: 30 l/min [7.9 US gal/min]
Leakage	420 cm³/min [25.6 in³/min] @ at rated pressure
Weight	0.65 kg [1.43 lb]
Hysteresis	8% maximum
Threshold current	0.2 A (12 VDC coil) 0.1 A (24 VDC coil)
Maximum control current	1.8 A (12 VDC coil) 0.9 A (24 VDC coil)
Pressure differential	0 bar [0 psi] maximum
Cavity	SDC10-2
Standard Coil	M19P 22 Watt

Theoretical performance





Schematic

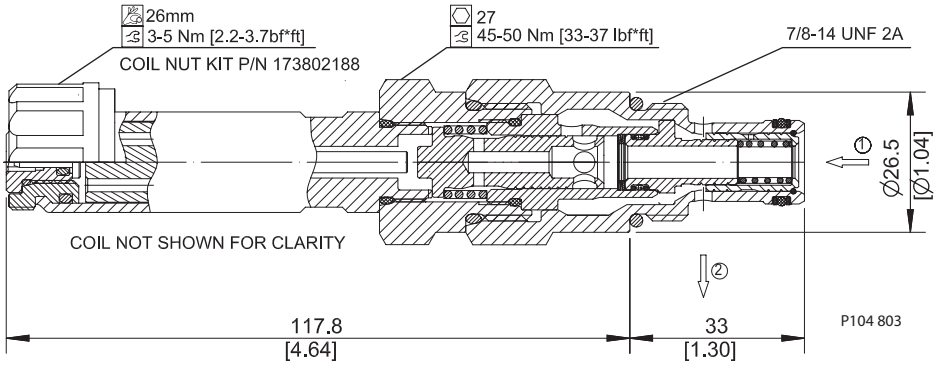


P104 802

DIMENSIONS

mm [in]

Cross-sectional view



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ORDERING INFORMATION

PFC10-RO-30-12D-DN-B-00

Max regulated flow
10 = 10 l/min
30 = 30 l/min

Coil voltage
00 = No coil
12D = 12V DC
24D = 24V DC

Coil termination
00 = No coil
FL = Flying Lead
DN = ISO 4400 (DIN 43650)
DE = Deutsch
AJ = AMP Jr

Body and Ports
00 = No housing
6S = Al, #6 SAE
8S = Al, #8 SAE
DG3B = Al, 3/8 BSP
DG4B = Al, 1/2 BSP
Other housing available

Seals **Seal Kit**
B = Buna-N seals 354004019
V = Viton seals 354003419

Body Nomenclature
No Body
CP10-2-6S
CP10-2-8S
SDC10-2-DG3B
SDC10-2-DG4B

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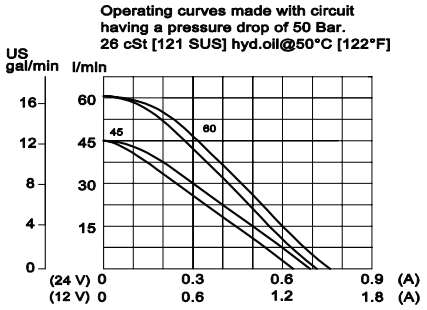
Cartridge Valves Technical Information
Proportional Valves
Proportional Flow Controls
PFC12-RO

COMPLIANT

OPERATION

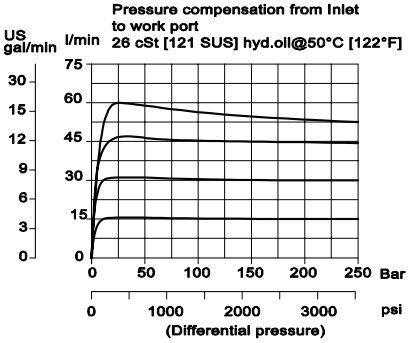
This is a pressure-compensated, restrictive-type, normally-open, spool-type, proportional flow-control. Controlled flow is from port 1 to 2.



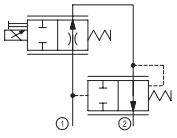
SPECIFICATIONS

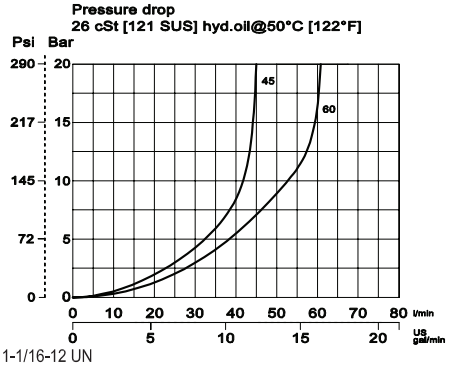
Specifications

Rated pressure	260 bar [3770 psi]
Maximum flow at rated pressure	PFC12-RO-45: 45 l/min [11.9 US gal/min] PFC12-RO-60: 60 l/min [15.9 US gal/min]
Leakage	420 cm³/min [25.6 in³/min] @ at rated pressure
Weight	0.77 kg [1.70 lb]
Hysteresis	8% maximum
Threshold current	0.42 A (12 VDC coil) 0.21 A (24 VDC coil)
Maximum control current	1.8 A (12 VDC coil) 0.9 A (24 VDC coil)
Pressure differential	0 bar [0 psi] maximum
Cavity	SDC12-2
Standard Coil	D14E(35W) 35 Watt



Schematic

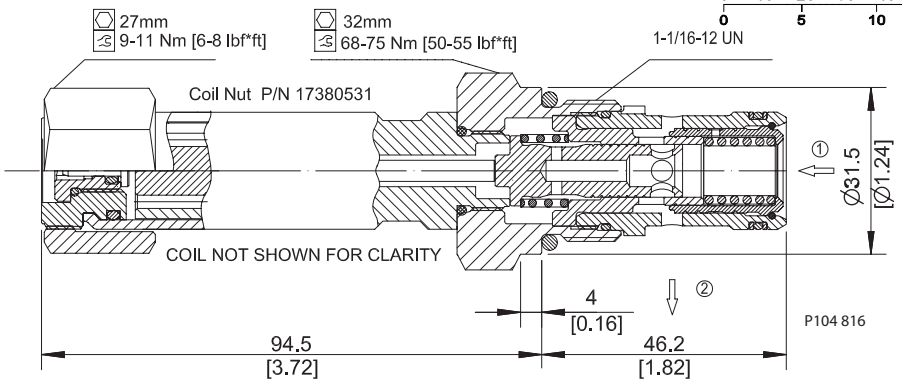




DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

PFC12-RO-XX-12D-DN-B-00

Max regulated flow
45 = 45 l/min
60 = 60 l/min

Coil voltage
00 = No coil
12D = 12V DC
24D = 24V DC

Coil termination
00 = No coil
FL = Flying Lead
DN = ISO 4400 (DIN 43650)
DE = Deutsch
AJ = Amp Junior
AS = Amp Superseal

Body and Ports
00 = No housing
10S = Al, #10 SAE
12S = Al, #12 SAE
DG4B = Al, 1/2 BSP
DG6B = Al, 3/4 BSP
Other housing available

Body Nomencl.
No Body
CP12-2-10S
CP12-2-12S
SDC12-2-DG4B
SDC12-2-DG6B

Seals
B = Buna-N seals
V = Viton

Seal Kit
354008319
354008419

Comatrol
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Cartridge Valves Technical Information
Proportional Valves
Proportional Flow Controls
PFC16-RO

COMPLIANT

OPERATION

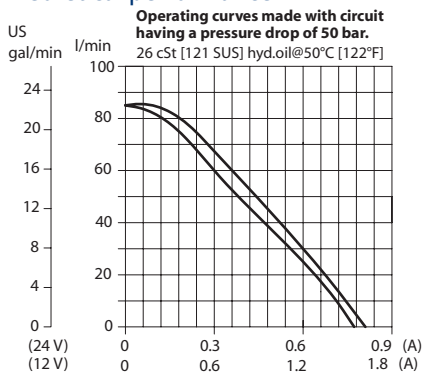
This is a pressure-compensated, restrictive-type, normally-open, spool-type, proportional flow-control. Controlled flow is from port 1 to 2.

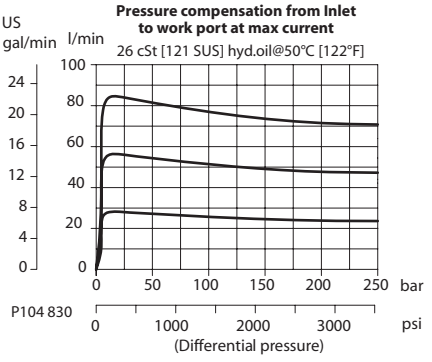
SPECIFICATIONS

Specifications

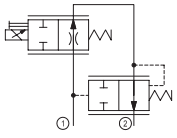
Rated pressure	260 bar [3770 psi]
Rated flow at 260 bar [3771 psi]	85 l/min [22 US gal/min]
Leakage	420 cm³/min [25.6 in³/min] @ at rated pressure
Weight	0.91 kg [2.01 lb]
Hysteresis	8% maximum
Threshold current	0.2 A (12 VDC coil) 0.1 A (24 VDC coil)
Maximum control current	1.8 A (12 VDC coil) 0.9 A (24 VDC coil)
Pressure differential	0 bar [0 psi] maximum
Cavity	SDC16-2
Standard Coil	D14E(35W) 35 Watt

Theoretical performance





Schematic



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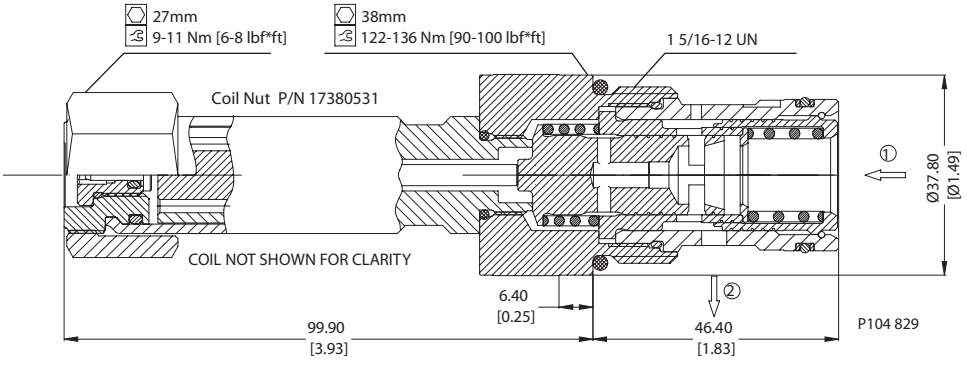
DIMENSIONS

mm [in]

Cross-sectional view



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ORDERING INFORMATION

PFC16-RO-85-12D-DN-B-00

Max regulated flow
85 = 85 l/min

Coil voltage
00 = No coil
12D = 12V DC
24D = 24V DC

Coil termination
00 = No coil
FL = Flying Lead
DN = ISO 4400 (DIN 43650)
DE = Deutsch
AJ = Amp Junior
AS = Amp Superseal

Body and Ports
00 = No housing
DG6B = Al, 3/4 BSP
DG8B = Al, 1 BSP
12S = Al, #12 SAE
16S = Al, #16 SAE
Other housing available

Seals / **Seal Kit**
B = Buna-N seals 354008719
V = Viton 354008819

Body Nomencl.
No Body
SDC16-2-DG-6B
SDC16-2-DG-8B
CP16-2-12S
CP16-2-16S

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Comatrol
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Cartridge Valves Technical Information
Proportional Valves
Proportional Flow Controls
PFC10-PC

COMPLIANT

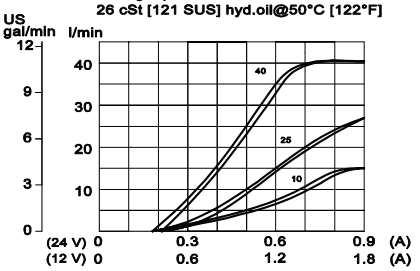
OPERATION

This is a pressure-compensated, priority-type, normally-closed, spool-type, proportional flow-control. Controlled flow is from port 1 to 3, port 2 is bypass.

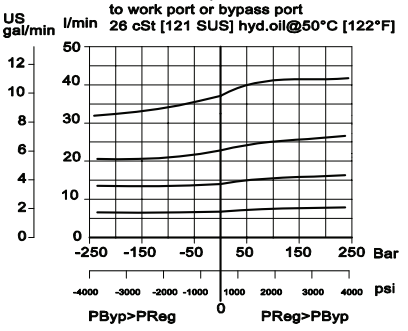
SPECIFICATIONS

Rated pressure	260 bar [3770 psi]
Maximum flow at rated pressure	PFC10-PC-10: 10 l/min [2.64 US gal/min] PFC10-PC-25: 25 l/min [6.6 US gal/min] PFC10-PC-40: 40 l/min [10.6 US gal/min]
Leakage	420 cm³/min [25.6 in³/min] @ at rated pressure
Weight including coil	0.62 kg [1.37 lb]
Hysteresis	8% maximum
Threshold current	0.36 A (12 VDC coil) 0.18 A (24 VDC coil)
Maximum control current	1.8 A (12 VDC coil) 0.9 A (24 VDC coil)
Pressure differential	0 bar [0 psi] maximum
Cavity	SDC10-3
Standard Coil	M19P 22 Watt

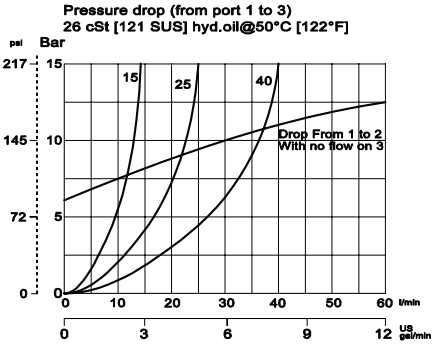
Operating curves made with circuit having a pressure load of 50 Bar. 26 cSt [121 SUS] hyd.oil@50°C [122°F]



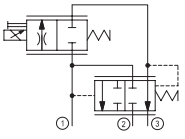
Pressure compensation from Inlet to work port or bypass port 26 cSt [121 SUS] hyd.oil@50°C [122°F]



Pressure drop (from port 1 to 3) 26 cSt [121 SUS] hyd.oil@50°C [122°F]



Schematic

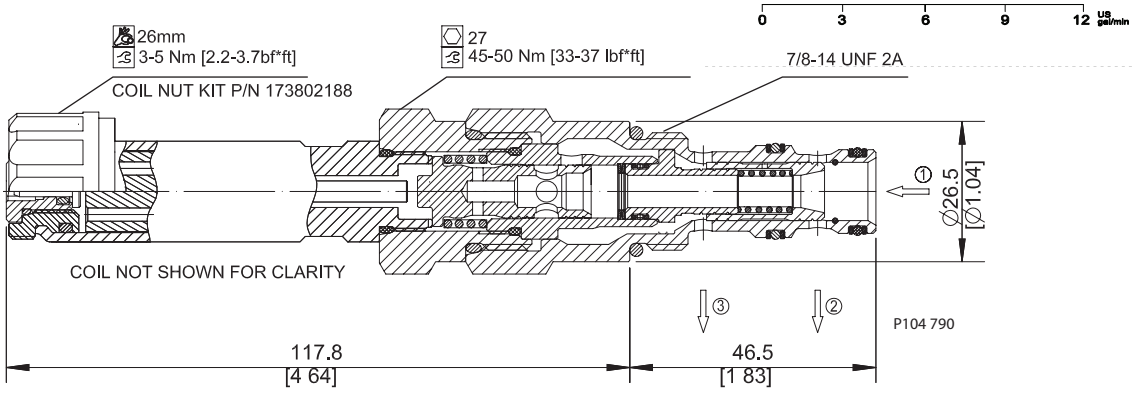


P104 789

DIMENSIONS

mm [in]

Cross-sectional view



P104 790

ORDERING INFORMATION

PFC10-PC-XX-12D-DN-B-00

Max regulated flow
10 = 10 l/min
25 = 25 l/min
40 = 40 l/min

Coil voltage
00 = No coil
12D = 12V DC
24D = 24V DC

Coil termination:
00 = No coil
FL = Flying Lead
DN = DIN 43650
DE = Deutsch

Body and ports
00 = No housing
6S = Al, #6 SAE
8S = Al, #8 SAE
SE3B = Al, 3/8" BSP
SE4B = Al, 1/2" BSP
Other housing available

Seals — **Seals kit**
B = Buna-N 35400421
V = Viton 35400371

Body Nomenclature
No Body
CP10-3-6S
CP10-3-8S
SDC10-3-SE3B
SDC10-3-SE4B

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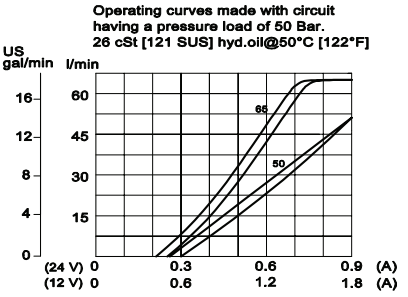
Cartridge Valves Technical Information
Proportional Valves
Proportional Flow Controls
PFC12-PC

COMPLIANT

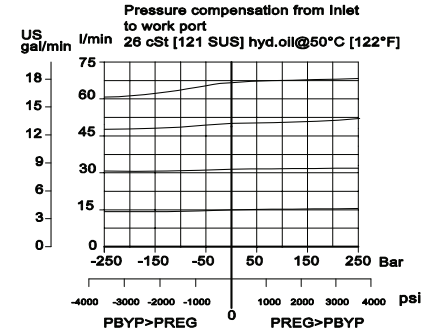
OPERATION

This is a pressure-compensated, priority-type, normally-closed, spool-type, proportional flow-control. Controlled flow is from port 1 to 3, port 2 is bypass.

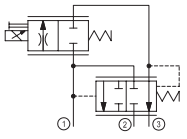


SPECIFICATIONS

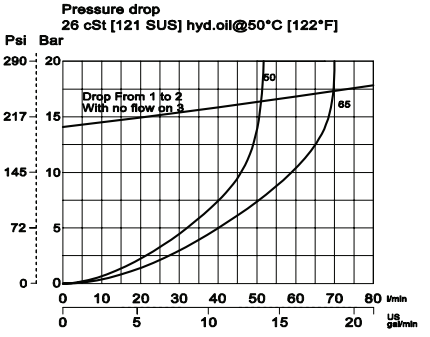
Rated pressure	260 bar [3770 psi]
Maximum flow at rated pressure	PFC12-PC-50: 50 l/min [13.21 US gal/min] PFC12-PC-65: 65 l/min [17.17 US gal/min]
Leakage	420 cm³/min [25.6 in³/min] @ at rated pressure
Weight	0.81 kg [1.79 lb]
Hysteresis	8% maximum
Threshold current	0.5 A (12 VDC coil) 0.25 A (24 VDC coil)
Maximum control current	1.8 A (12 VDC coil) 0.9 A (24 VDC coil)
Pressure differential	0 bar [0 psi] maximum
Cavity	SDC12-3
Standard Coil	D14E(35W) 35 Watt



Schematic



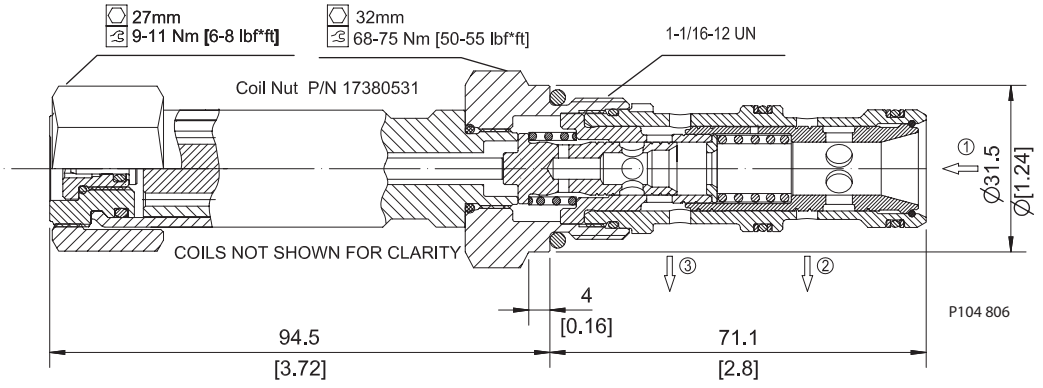
P104 789



DIMENSIONS

mm [in]

Cross-sectional view



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ORDERING INFORMATION

PFC12-PC-XX-12D-DN-B-00

Max regulated flow
50 = 50 l/min
65 = 65 l/min

Coil voltage
00 = No coil
12D = 12V DC
24D = 24V DC

Coil termination
00 = No coil
FL = Flying Lead
DN = ISO 4400 (DIN 43650)
DE = Deutsch
AJ = Amp Junior
AS = Amp Superseal

Body and Ports
00 = No housing
10S = Al, #10 SAE
12S = Al, #12 SAE
4B = Al, 1/2 BSP
6B = Al, 3/4 BSP
Other housing available

Body Nomencl.
No Body
CP12-3-10S
CP12-3-12S
CP12-3-4B
CP12-3-6B

Seals
B = Buna-N seals
V = Viton

Seal Kit
354008319
354008419

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Cartridge Valves Technical Information
Proportional Valves
Proportional Flow Controls
PFC16-PC

COMPLIANT

OPERATION

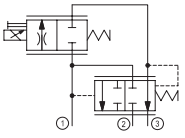
This is a pressure-compensated, priority-type, normally-closed, spool-type, proportional flow-control. Controlled flow is from port 1 to 3, port 2 is bypass.

SPECIFICATIONS

Specifications

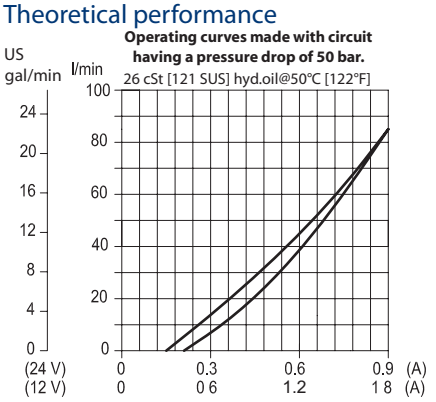
Rated pressure	260 bar [3770 psi]
Rated flow at 260 bar [3771 psi]	85 l/min [22 US gal/min]
Leakage	420 cm³/min [25.6 in³/min] @ at rated pressure
Weight	0.97 kg [2.14 lb]
Hysteresis	8% maximum
Threshold current	0.4 A (12 VDC coil) 0.2 A (24 VDC coil)
Maximum control current	1.8 A (12 VDC coil) 0.9 A (24 VDC coil)
Pressure differential	0 bar [0 psi] maximum
Cavity	SDC16-3
Standard Coil	D14E(35W) 35 Watt

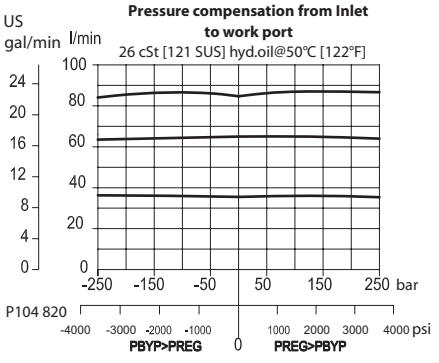
Schematic



P104 789

Theoretical performance



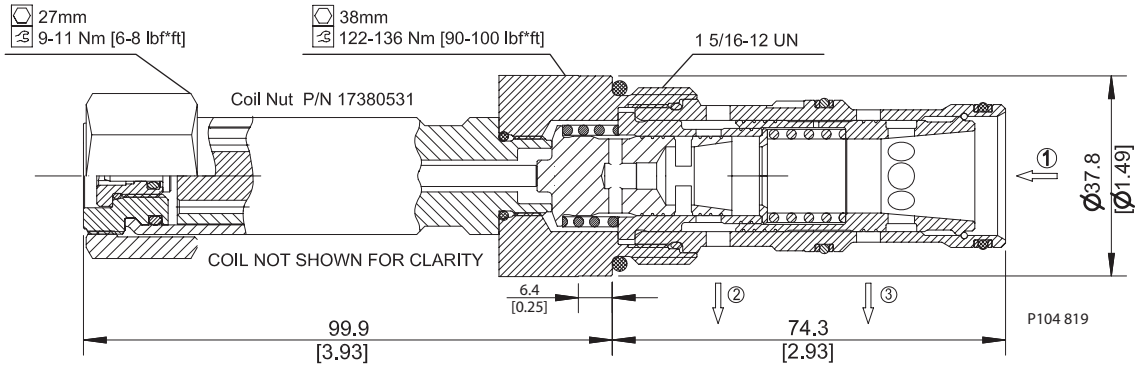


P104 820

DIMENSIONS

mm [in]

Cross-sectional view



P104 819

ORDERING INFORMATION

PFC16-PC-85-12D-DN-B-00

Max regulated flow
85 = 85 l/min

Coil voltage
00 = No coil
12D = 12V DC
24D = 24V DC

Coil termination
00 = No coil
FL = Flying Lead
DN = ISO 4400 (DIN 43650)
DE = Deutsch
AJ = Amp Junior
AS = Amp Superseal

Body and Ports
00 = No housing
6B = Al, 3/4 BSP
8B = Al, 1 BSP
12S = Al, #12 SAE
16S = Al, #16 SAE
Other housings available

Seals
B = Buna-N seals
V = Viton seals

Seal Kit
354008919
354009019

Body Nomenclature
No housing
SDC16-3-HE-6B
SDC16-3-HE-8B
CP16-3-12S
CP16-3-16S

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Comatrol
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Cartridge Valves Technical Information
Proportional Valves
Proportional Flow Controls
PFC10-PO

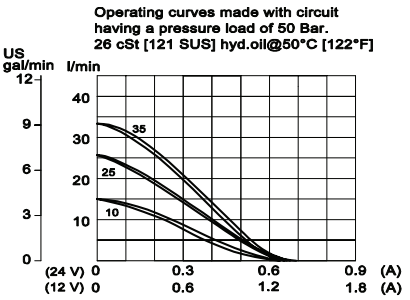
COMPLIANT

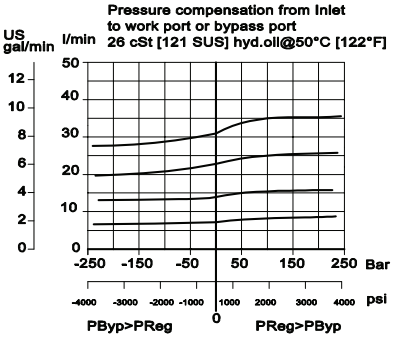
OPERATION

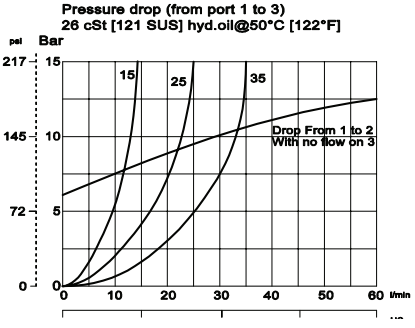
This is a pressure-compensated, priority-type, normally-open, spool-type, proportional flow-control. Controlled flow is from port 1 to 3, port 2 is bypass.

SPECIFICATIONS

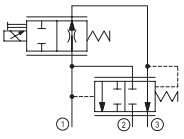
Rated pressure	260 bar [3770 psi]
Maximum flow at rated pressure	PFC10-PO-10: 10 l/min [2.64 US gal/min] PFC10-PO-25: 25 l/min [6.6 US gal/min] PFC10-PO-35: 35 l/min [9.25 US gal/min]
Leakage	420 cm³/min [25.6 in³/min] @ at rated pressure
Weight including coil	0.72 kg [1.59 lb]
Hysteresis	8% maximum
Threshold current	0.1 A (12 VDC coil) 0.05 A (24 VDC coil)
Maximum control current	1.8 A (12 VDC coil) 0.9 A (24 VDC coil)
Pressure differential	0 bar [0 psi] maximum
Cavity	SDC10-3
Standard Coil	M19P 22 Watt







Schematic

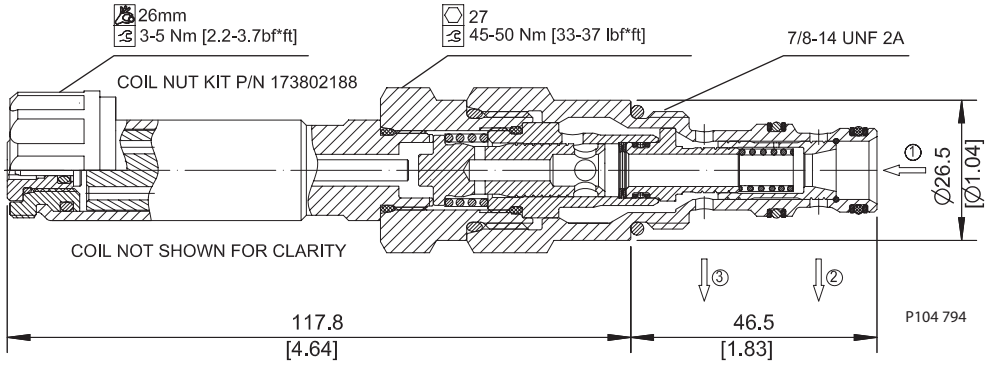


P104 793

DIMENSIONS

mm [in]

Cross-sectional view



P104 794

ORDERING INFORMATION

PFC10-PO-XX-12D-DN-B-00

Max regulated flow
10 = 10 l/min
25 = 25 l/min
35 = 35 l/min

Coil voltage
00 = No coil
12D = 12V DC
24D = 24V DC

Coil termination:
00 = No coil
FL = Flying Lead
DN = DIN 43650
DE = Deutsch

Body and ports
00 = No housing
6S = Al, #6 SAE
8S = Al, #8 SAE
SE3B = Al, 3/8" BSP
SE4B = Al, 1/2" BSP
Other housing available

Seals | **Seals kit**
B = Buna-N | 35400421
V = Viton | 35400371

Body Nomenclature
No Body
CP10-3-6S
CP10-3-8S
SDC10-3-SE3B
SDC10-3-SE4B

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RESPONSIVENESS IN MOTION
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Cartridge Valves Technical Information
Proportional Valves
Proportional Flow Controls
PFC12-PO

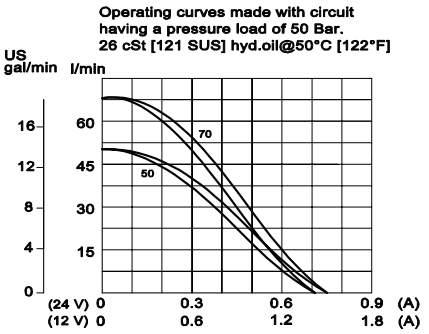
COMPLIANT

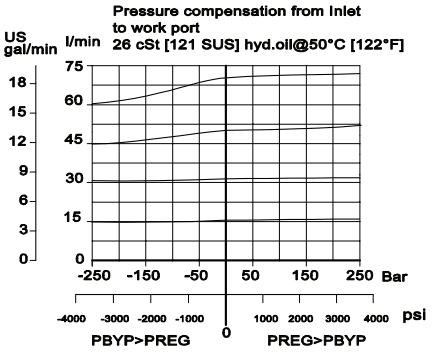
OPERATION

This is a pressure-compensated, priority-type, normally-open, spool-type, proportional flow-control. Controlled flow is from port 1 to 3, port 2 is bypass.

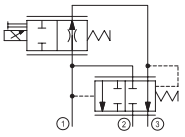
SPECIFICATIONS

Rated pressure	260 bar [3770 psi]
maximum flow at rated pressure	PFC12-PO-50: 50 l/min [13.21 US gal/min] PFC12-PO-70: 70 l/min [8.5 US gal/min]
Leakage	420 cm³/min [25.6 in³/min] @ at rated pressure
Weight	0.81 kg [1.79 lb]
Hysteresis	8% maximum
Threshold current	0.2 A (12 VDC coil) 0.1 A (24 VDC coil)
Maximum control current	1.8 A (12 VDC coil) 0.9 A (24 VDC coil)
Pressure differential	0 bar [0 psi] maximum
Cavity	SDC12-3
Standard Coil	D14E(35W) 35 Watt

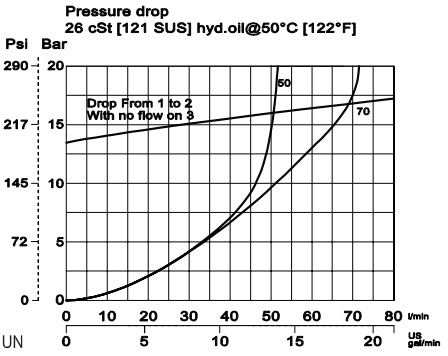




Schematic



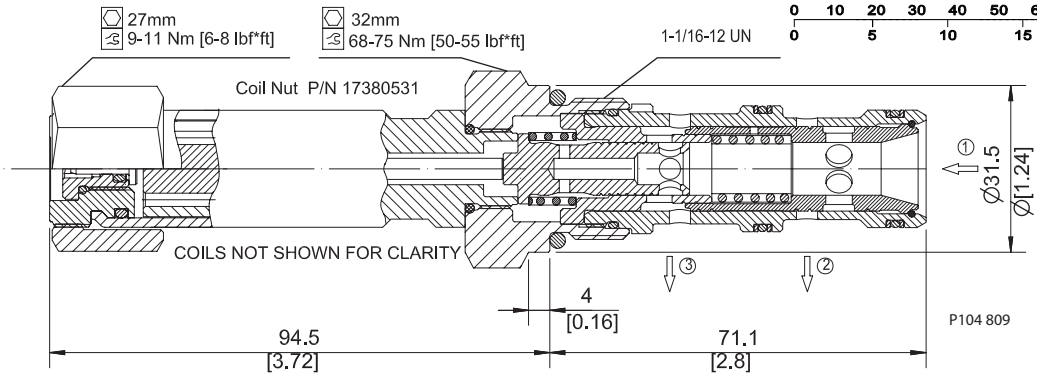
P104 793



DIMENSIONS

mm [in]

Cross-sectional view



P104 809

ORDERING INFORMATION

PFC12-PO-XX-12D-DN-B-00

Max regulated flow
50 = 50 l/min
70 = 70 l/min

Coil voltage
00 = No coil
12D = 12V DC
24D = 24V DC

Coil termination
00 = No coil
FL = Flying Lead
DN = ISO 4400 (DIN 43650)
DE = Deutsch
AJ = Amp Junior
AS = Amp Superseal

Body and Ports	Body Nomencl.
00 = No housing	No Body
10S = Al, #10 SAE	CP12-3-10S
12S = Al, #12 SAE	CP12-3-12S
4B = Al, 1/2 BSP	CP12-3-4B
6B = Al, 3/4 BSP	CP12-3-6B
Other housing available	

Seals	Seal Kit
B = Buna-N seals	354008319
V = Viton	354008419

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Cartridge Valves Technical Information
Proportional Valves
Proportional Flow Controls
PFC16-PO

COMPLIANT

OPERATION

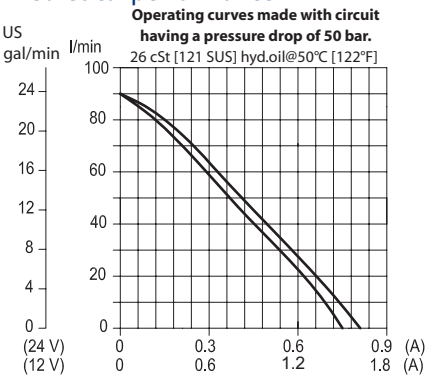
This is a pressure-compensated, priority-type, normally-open, spool-type, proportional flow-control. Controlled flow is from port 1 to 3, port 2 is bypass.

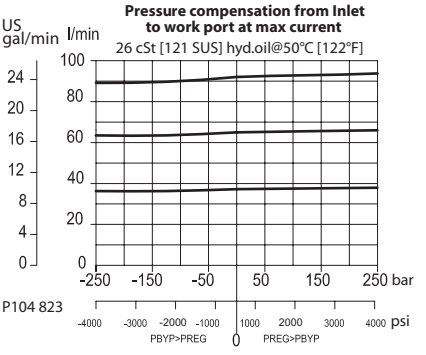
SPECIFICATIONS

Specifications

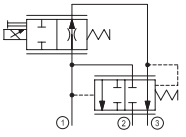
Rated pressure	260 bar [3770 psi]
Rated flow at 260 bar [3771 psi]	90 l/min [24 US gal/min]
Leakage	420 cm³/min [25.6 in³/min] @ at rated pressure
Weight	0.97 kg [2.14 lb]
Hysteresis	8% maximum
Threshold current	0.1 A (12 VDC coil) 0.05 A (24 VDC coil)
Maximum control current	1.8 A (12 VDC coil) 0.9 A (24 VDC coil)
Pressure differential	0 bar [0 psi] maximum
Cavity	SDC16-3
Standard Coil	D14E(35W) 35 Watt

Theoretical performance





Schematic

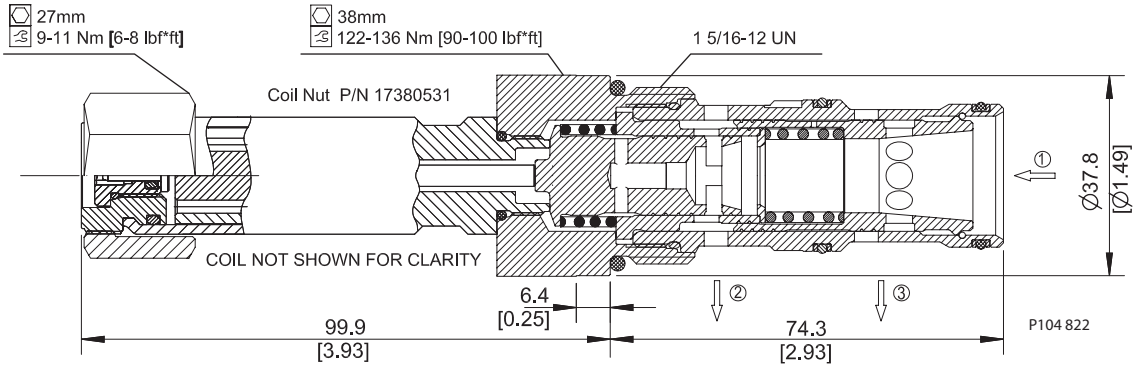


P104 793

DIMENSIONS

mm [in]

Cross-sectional view



P104 822

ORDERING INFORMATION

PFC16-PO-90-12D-DN-B-00

Max regulated flow
90 = 90 l/min

Coil voltage
00 = No coil
12D = 12V DC
24D = 24V DC

Coil termination
00 = No coil
FL = Flying Lead
DN = ISO 4400 (DIN 43650)
DE = Deutsch
A J = Amp Junior
AS = Amp Superseal

Body and Ports
00 = No housing
6B = Al, 3/4 BSP
8B = Al, 1 BSP
12S = Al, #12 SAE
16S = Al, #16 SAE
Other housings available

Seals
B = Buna-N seals
V = Viton seals

Seal Kit
354008919
354009019

Body Nomenclature
No housing
SDC16-3-HE-6B
SDC16-3-HE-8B
CP16-3-12S
CP16-3-16S

P104 824

Comatrol
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Cartridge Valves Technical Information
Proportional Valves
Proportional Pressure Reducing
CP558-24

COMPLIANT

OPERATION

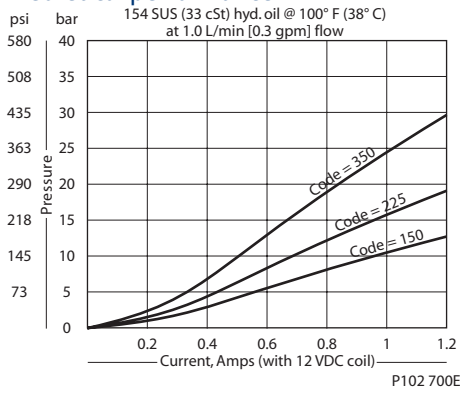
This valve is a direct acting, proportional, pressure reducing/relieving valve.

SPECIFICATIONS

Specifications

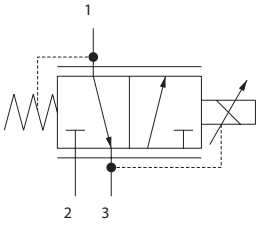
Rated pressure	34 bar [500 psi]
Rated flow at 7 bar [100 psi]	4 l/min [1 US gal/min]
Weight	0.27 kg [0.60 lb]
Hysteresis	10% maximum
Threshold current	0.1 A (12 VDC coil) 0.05 A (24 VDC coil)
Maximum control current	1 A (12 VDC coil) 0.5 A (24 VDC coil)
Cavity	SDC08-3
Standard Coil	D08 16 Watt
Coil nut	322399

Theoretical performance



P102 700E

Schematic

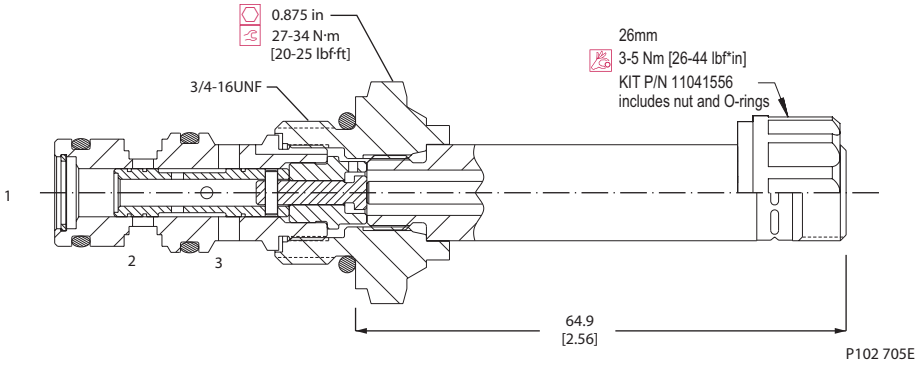


P102 433E

DIMENSIONS

mm [in]

Cross-sectional view



P102 705E

ORDERING INFORMATION

CP558-24-B-4S-150-12D-H

Seals

	Seal Kit
B = Buna-N	11016151
V = Viton	120708

Voltage
000 = No coil
12D = 12 VDC coil
24D = 24 VDC coil

Connector
0 = No connector
H = DIN 43650
L = Lead
S = Spade
AJ = Amp Junior
M2 = Metripak 150 Type 1
DE = Deutsch

Housing and ports

00	= No Housing
SE2B	= AL,1/4 BSP
SE3B	= AL, 3/8 BSP
4S	= AL, #4 SAE
6S	= AL, #6 SAE

Housing P/N

No Housing
SDC08-3-SE-2B
SDC08-3-SE-3B
CP08-3-4S
CP08-3-6S

Pressure Code
150 = 10.3 bar [150 psi]
225 = 15.5 bar [225 psi]
350 = 24.1 bar [350 psi]

P102 708E

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Cartridge Valves Technical Information
Proportional Valves
Proportional Pressure Reducing
XRP 044

COMPLIANT

OPERATION

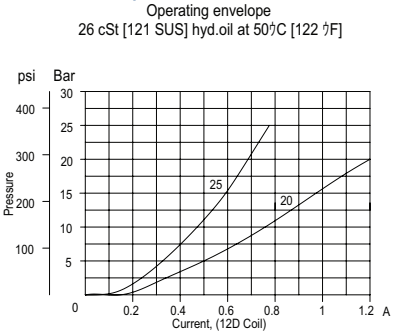
This is a pilot-operated, proportional pressure reducing/relieving valve.

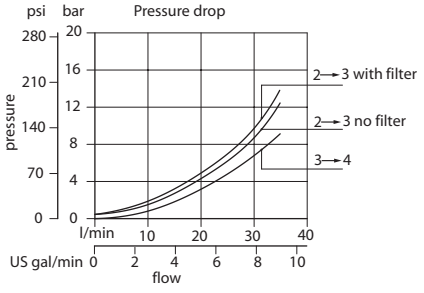
SPECIFICATIONS

Specifications

Rated pressure	50 bar [700 psi]
Rated flow at 7 bar [100 psi]	25 l/min [7 US gal/min]
Weight	0.34 kg [0.75 lb]
Hysteresis	6% maximum
Threshold current	0.15 A (12 VDC coil) 0.08 A (24 VDC coil)
Maximum control current	1.2 A (12 VDC coil) 0.6 A (24 VDC coil)
Cavity	SDC10-4
Standard Coil	M13 20 Watt

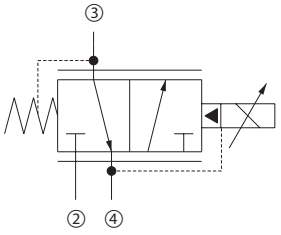
Theoretical performance





P103 705E

Schematic

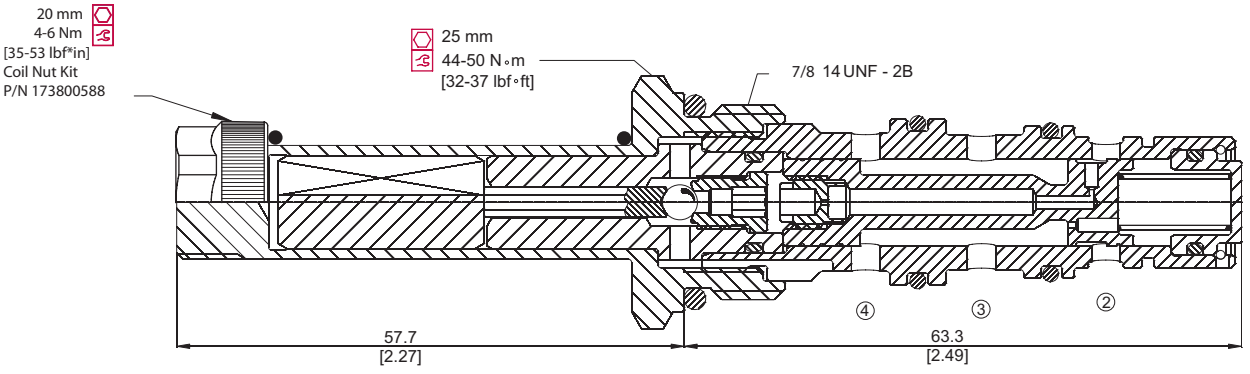


P102 943

DIMENSIONS

mm [in]

Cross-sectional view



P103 678

ORDERING INFORMATION

XRP 044 \ 25* - F - 24D - DE - 00 - V

Setting Range
20 = 0 - 20 bar [0 - 290 psi]
25 = 0 - 25 bar [0 - 360 psi]

Inlet filter
F = 300 µm filter
Omit = No filter

Voltage
0 = No coil
12D = 12 VDC coil
24D = 24 VDC coil

Termination
00 = No connector
AJ = AMP junior
AMS = AMP Superseal 1.5
DE = Deutsch
DN = DIN 43650 (ISO 4400)
DN1 = "DN" w/Connector
FL600 = Lead wires
SP = Spade

Seals
V = Viton
Omit = Buna-N

Seal kit
Consult factory
Consult factory

Housing and ports

		Housing P/N
00	= No Housing	No Housing
L3/8	= AL, 3/8 BSP	SDC10-4-L-3/8
L1/2	= AL,1/2 BSP	SDC10-4-L-1/2
6S	= AL, #6 SAE	CP10-4-6S
8S	= AL, #8 SAE	CP10-4-8S

Other housings available

* other pressure ranges available, consult factory

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Cartridge Valves Technical Information
Proportional Valves
Proportional Pressure Reducing
PPR10-PAC

COMPLIANT

OPERATION

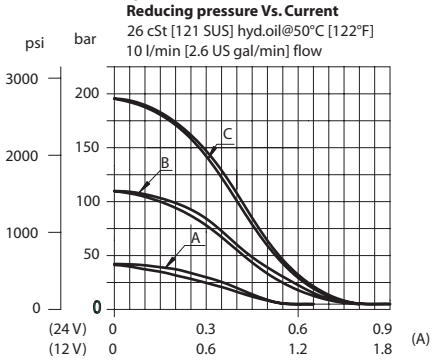
This is a pilot-operated, proportional pressure-reducing/relieving valve (Normally closed).

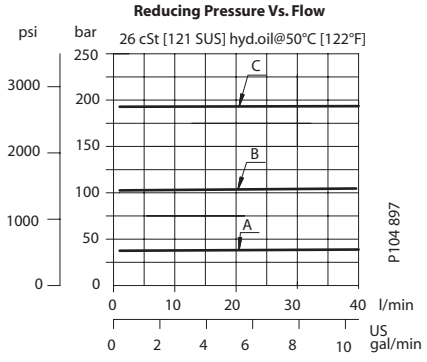
SPECIFICATIONS

Specifications

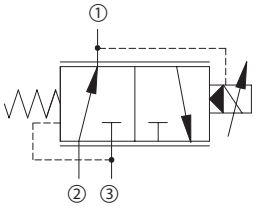
Rated pressure	250 bar [3625 psi]
Rated flow at 7 bar [100 psi]	18 l/min [5 US gal/min]
Weight	0.62 kg [1.37 lb]
Hysteresis	10% maximum
Threshold current	0 A (12 VDC coil) 0 A (24 VDC coil)
Maximum control current	1.4 A (12 VDC coil) 0.7 A (24 VDC coil)
Pressure differential	0 bar [0 psi] maximum
Cavity	SDC10-3
Standard Coil	M19P 22 Watt

Theoretical performance





Schematic

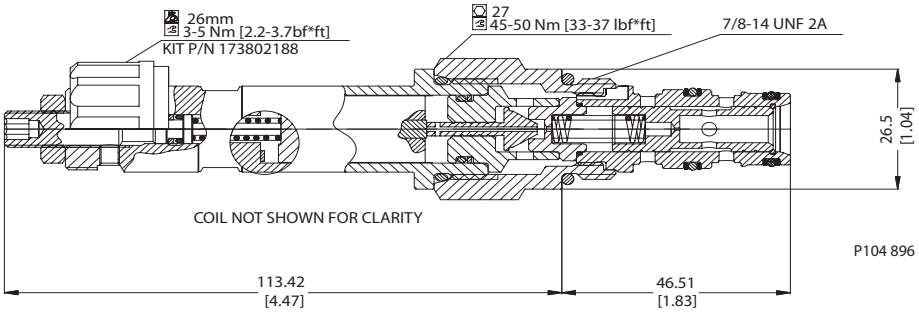


P104 895

DIMENSIONS

mm [in]

Cross-sectional view



P104 896

ORDERING INFORMATION

PPR10-PAC-40-A-12D-DN-B-00

Cracking pressure
Code = Setting in Bar
Std. setting
40 = 40 bar setting (type A)
100 = 100 bar setting (type B)
200 = 200 bar setting (type C)

Pressure range
A= 20 - 60 bar [360 - 940 psi] Max inlet pressure 150 Bar
B= 70 - 150 bar [960-2250 psi]
C= 160 - 210 bar [2260-3120 psi]

Coil voltage
12D=12VDC
24D=24VDC
00=No Coil

Housing and ports
00 = Cartridge only
6S = Al, #6 SAE
8S = Al, #8 SAE
SE3B = Al, 3/8" BSP
SE4B = Al, 1/2" BSP
Other housing available

Housing Nomenclature
No Body
CP10-3-6S
CP10-3-8S
SDC10-3-SE3B
SDC10-3-SE4B

Seals
B = Buna-N
V = Viton

Seals kit
354004210
354003719

Coil termination
00 = No coil, nut included
AJ= AMP Junior
DE= Deutsch
DN= DIN 46650
FL= Flying leads(140mm lead length standard)

P104 898

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Cartridge Valves Technical Information
Proportional Valves
Proportional Pressure Reducing
XRP 06

COMPLIANT

OPERATION

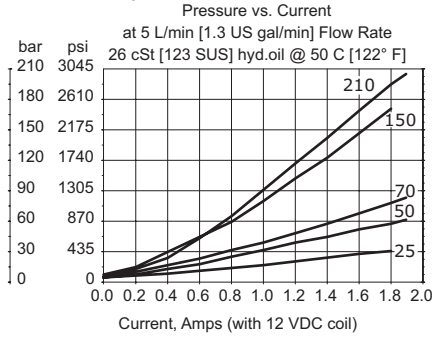
This is a pilot-operated, proportional pressure reducing/relieving valve.

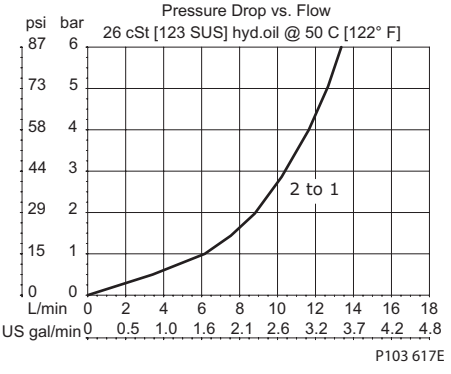
SPECIFICATIONS

Specifications

Rated pressure	315 bar [4500 psi]
Rated flow at 7 bar [100 psi]	25 l/min [7 US gal/min]
Weight	0.55 kg [1.21 lb]
Hysteresis	3% maximum
Threshold current	0 A (12 VDC coil) 0 A (24 VDC coil)
Maximum control current	1.8 A (12 VDC coil) 0.9 A (24 VDC coil)
Cavity	NCS06/3
Standard Coil	M19P 22 Watt

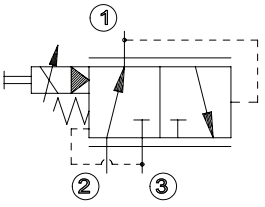
Theoretical performance





P103 617E

Schematic

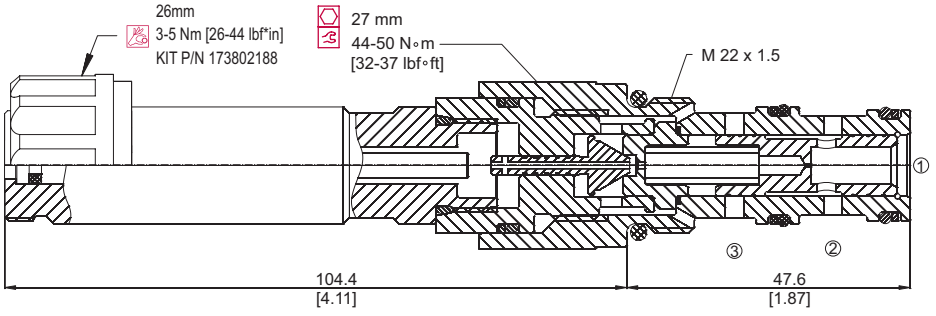


P108 348E

DIMENSIONS

mm [in]

Cross-sectional view



P103 612

ORDERING INFORMATION

XRP 06 - 70 - 12D -DE - EN - 00 - V

Setting range
25 = 6-25 bar [90-360 psi]
50 = 6-55 bar [90-800 psi]
70 = 5-75 bar [90-1100 psi]
150 = 8-155 bar [120-2200 psi]
210 = 9-210 bar [130-3100 psi]

Voltage
00 = No coil
12D = 12 VDC
24D = 24 VDC

Termination
00 = No connector
AJ = AMP Jr
DE = Deutsch
DN = DIN 43650 (ISO 4400)
DN1 = "DN" w/Connector
FL600 = Lead wires

Manual override
00 = Push control (Standard)
EN = Screw control

Seals

	Seals
V = Viton	230000110
Omit = Buna-N	230000070

Housing and ports

		Housing P/N
00	= No Housing	No Housing
SE6S	= AL, #6 SAE	NCS06/3-SE-6S
SE8S	= AL, #8 SAE	NCS06/3-SE-8S
SE3/8	= AL, 3/8 BSP	NCS06/3-SE-3/8
SE1/2	= AL, 1/2 BSP	NCS06/3-SE-1/2

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Cartridge Valves Technical Information
Proportional Valves
Proportional Pressure Relieving
XMD 04

COMPLIANT

OPERATION

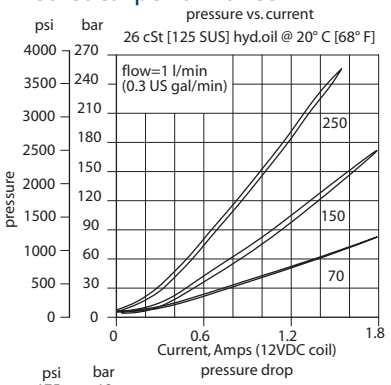
This is a direct-acting normally-open, proportional relief valve.

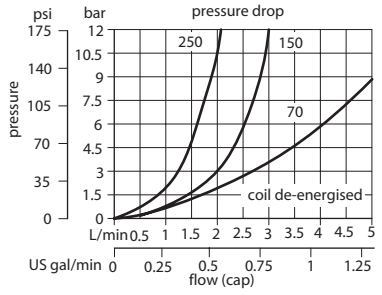
SPECIFICATIONS

Specifications

Rated pressure	250 bar [3600 psi]
Rated flow	4 l/min [1 US gal/min]
Weight	0.44 kg [0.97 lb]
Hysteresis	3% maximum
Threshold current	0 A (12 VDC coil) 0 A (24 VDC coil)
Maximum control current	1.8 A (12 VDC coil) 0.9 A (24 VDC coil)
Cavity	NCS04/2
Standard Coil	M19P 22 Watt

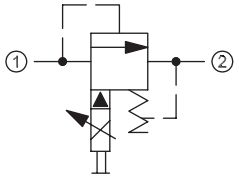
Theoretical performance





P103 696E

Schematic

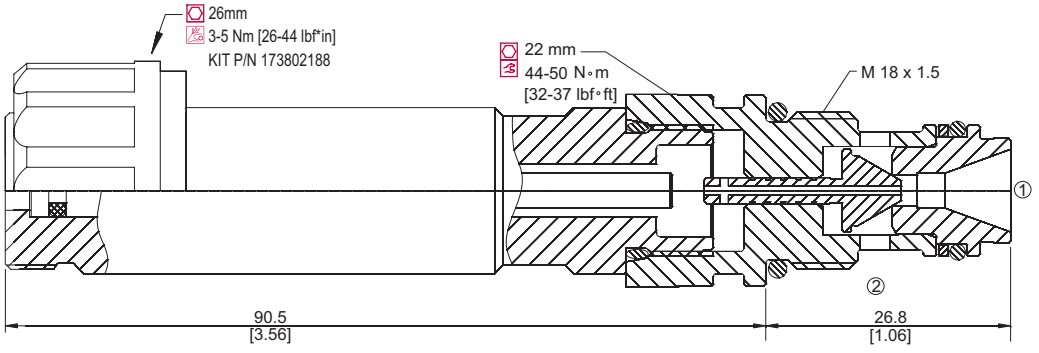


P103 512

DIMENSIONS

mm [in]

Cross-sectional view



P103 668

ORDERING INFORMATION

XMD 04 - 70 - 24D -DE - EN - 00- V

Setting range
70 = 3-75 bar [44-1088 psi]
150 = 4-160 bar [58-2321 psi]
250 = 7-250 bar [102-3626 psi]

Voltage
00 = No coil
12D = 12VDC coil
24D = 24VDC coil

Termination
00 = No connector
AJ = AMP Jr
DE = Deutsch
DN = DIN 43650 (ISO 4400)
DN1 = "DN" w/Connector
FL600 = Lead wires

Seals
V = Viton
Omit = Buna-N

Housing and ports
00 = No Housing
DG1/4 = AL,1/4 BSP
DG4S = AL, #4 SAE
DG6S = AL, #6 SAE
Other housings available

Manual override
00 = Push control (Standard)
EN = Screw control

Seal kit
230000390
230000190

Housing P/N
No Housing
NCS04/2-DG-1/4
NCS04/2-DG-4S
NCS04/2-DG-6S

P103 723E

Comatrol
RESPONSIVENESS IN MOTION
MEMBER OF THE SAUER-DANFOSS GROUP

Cartridge Valves Technical Information
Proportional Valves
Proportional Pressure Relieving
CP558-20

COMPLIANT

OPERATION

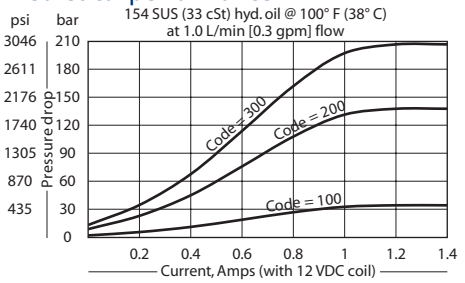
This valve is a direct acting, normally-open, proportional valve.

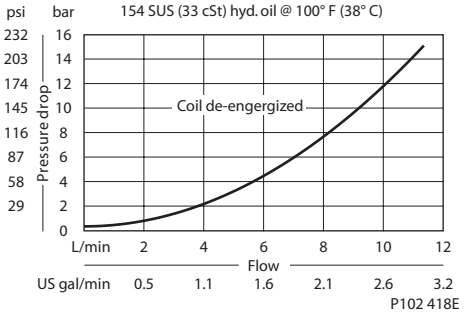
SPECIFICATIONS

Specifications

Rated pressure	210 bar [3000 psi]
Rated flow	8 l/min [2 US gal/min]
Weight	0.48 kg [1.06 lb]
Hysteresis	10% maximum
Threshold current	0 A (12 VDC coil) 0 A (24 VDC coil)
Maximum control current	1.2 A (12 VDC coil) 0.6 A (24 VDC coil)
Cavity	SDC08-2
Standard Coil	D10_30 Watt
Coil nut	321978

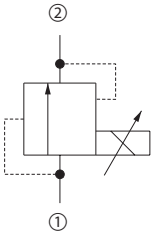
Theoretical performance





P102 418E

Schematic

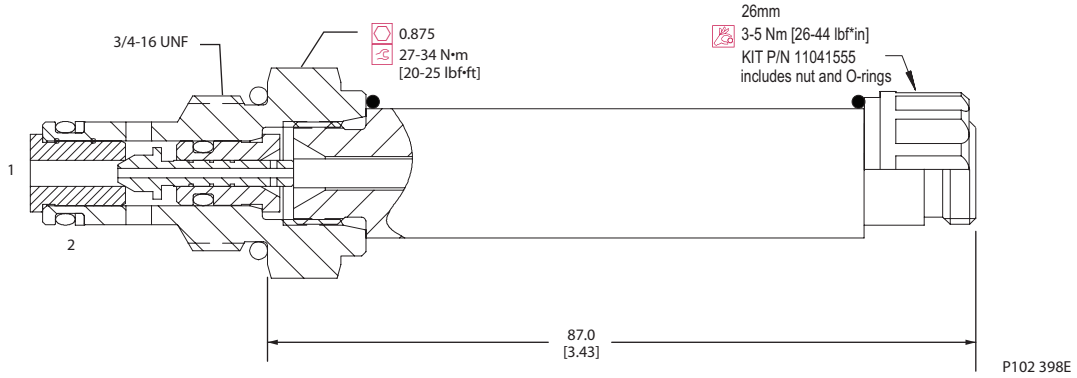


P102 432E

DIMENSIONS

mm [in]

Cross-sectional view



P102 398E

ORDERING INFORMATION

CP558 - 20 - B - 6S - 300 - 24D - H

Seals
B = Buna-N
V = Viton

Seal kit
120221
120222

Housing and ports
0 = No Housing
DG2B = AL,1/4 BSP
DG3B = AL, 3/8 BSP
4S = AL, #4 SAE
6S = AL, #6 SAE
Other housings available

Housing P/N
No Housing
SDC08-2-DG-2B
SDC08-2-DG-3B
CP08-2-4S
CP08-2-6S

Voltage
000 = No coil
12D = 12 VDC coil
24D = 24 VDC coil

Pressure code
050 = 35 bar [500 psi] max
100 = 69 bar [1000 psi] max
200 = 138 bar [2000 psi] max
300 = 207 bar [3000 psi] max

Termination
00 = No connector
H = DIN 43650
L = Lead wires
DE = Deutsch
M2 = Metripack 150
Type 1
S = Spade

P102 412E

Comatrol
RESPONSIVENESS IN MOTION
MEMBER OF THE SAUER-DANFOSS GROUP

Cartridge Valves Technical Information
Proportional Valves
Proportional Pressure Relieving
PRV10-POC

COMPLIANT

OPERATION

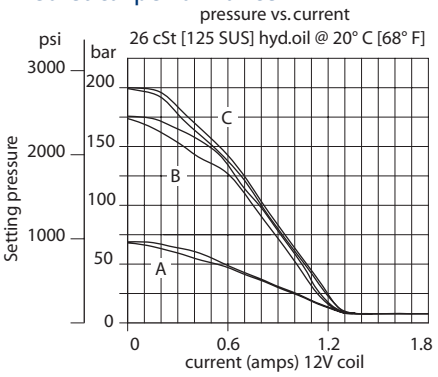
This is a normally-closed, pilot-operated, proportional relief valve.

SPECIFICATIONS

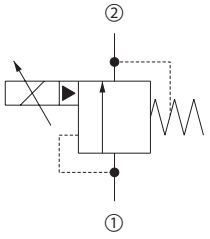
Specifications

Rated pressure	250 bar [3600 psi]
Rated flow	76 l/min [20 US gal/min]
Weight	0.53 kg [1.17 lb]
Hysteresis	10% maximum
Threshold current	0 A (12 VDC coil) 0 A (24 VDC coil)
Maximum control current	1.4 A (12 VDC coil) 0.7 A (24 VDC coil)
Cavity	SDC10-2
Standard Coil	M19P 22 Watt

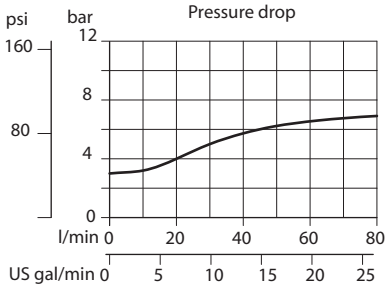
Theoretical performance



Schematic



P102 942E

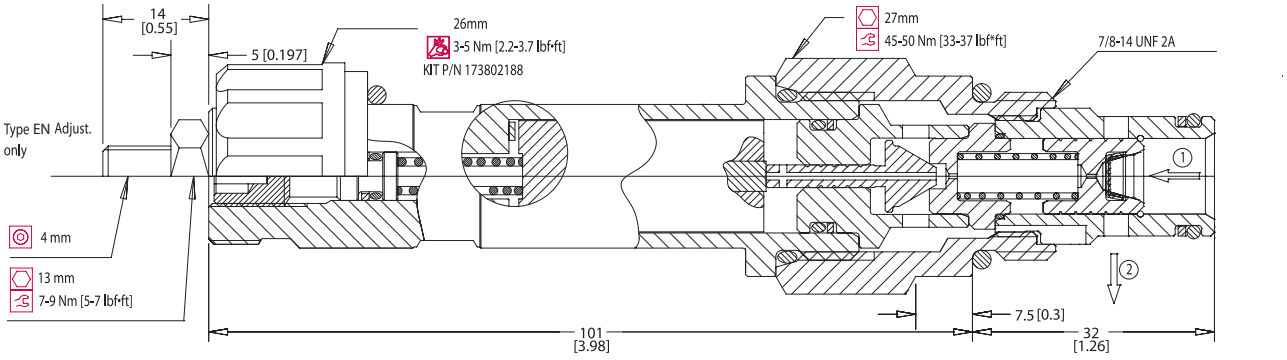


P104 534E

DIMENSIONS

mm [in]

Cross-sectional view



P103 756

ORDERING INFORMATION

PRV10-POC-215-C-12-DT-F-B-00

Crack pressure
Code = Setting in bar
Standard settings
55 = 55 bar [800 psi] Range A
135 = 135 bar [1960 psi] Range B
215 = 215 bar [3120 psi] Range C

Pressure range
A= 25 - 65 bar [360 - 940 psi]
B= 65 - 155 bar [940-2250 psi]
C= 155 - 215 bar [2250-3120 psi]

Voltage
00 = No coil
12 = 12 VDC
24 = 24 VDC

Termination
0 = No connector
DE = Deutsch
FL = Lead wires
AJ = AMP Jr
A = DIN 43650

Housing and ports
00 = No Housing
DG3B = AL,3/8 BSP
DG4B = AL, 1/2 BSP
6S = AL, #6 SAE
8S = AL, #8 SAE
Other housings available

Housing P/N
No Housing
SDC10-2-DG-3B
SDC10-2-DG-4B
CP10-2-6S
CP10-2-8S

Seals
B = Buna-N
V = Viton

Seal Kit
354000719
354000819

Adjustment option:
E = External
F = Tamper resistant
H = Hidden

P103 776E

Comatrol
RESPONSIVENESS IN MOTION
MEMBER OF THE SAUER-DANFOSS GROUP

Cartridge Valves Technical Information
Proportional Valves
Proportional Pressure Relieving
PRV12-POC

COMPLIANT

OPERATION

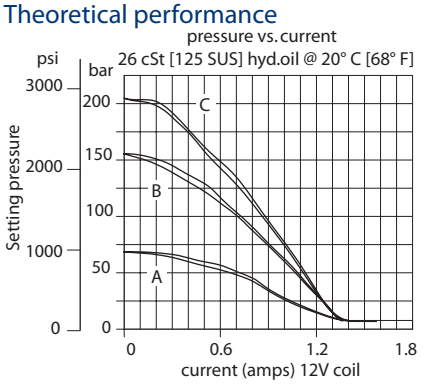
This is a normally-closed, pilot-operated, proportional relief valve.

SPECIFICATIONS

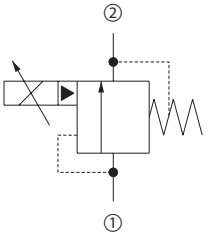
Specifications

Rated pressure	250 bar [3600 psi]
Rated flow	180 l/min [48 US gal/min]
Weight	0.62 kg [1.37 lb]
Hysteresis	10% maximum
Threshold current	0 A (12 VDC coil) 0 A (24 VDC coil)
Maximum control current	1.5 A (12 VDC coil) 0.8 A (24 VDC coil)
Cavity	SDC12-2
Standard Coil	M19P 22 Watt

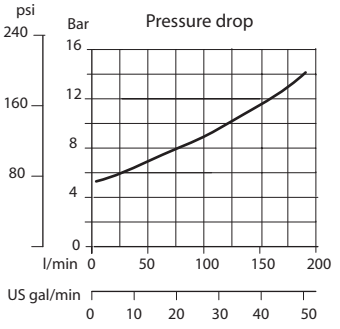
Theoretical performance



Schematic



P102 942E

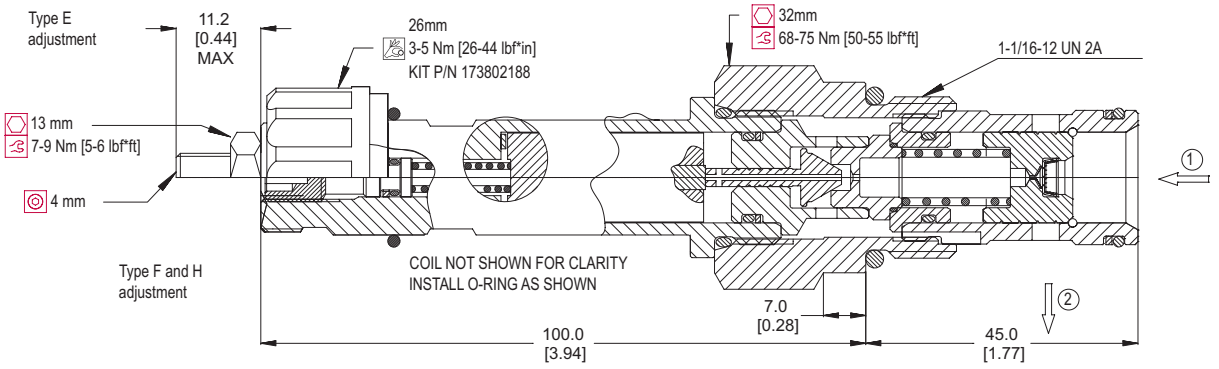


P104 535E

DIMENSIONS

mm [in]

Cross-sectional view



P103 757

ORDERING INFORMATION

PR V12-POC-215-C-12-DT-F-B 00

Crack pressure
Code = Setting in bar
Standard settings
55 = 55 bar [800 psi] Range A
135 = 135 bar [1960 psi] Range B
215 = 215 bar [3120 psi] Range C
Pressure range
A= 25 - 65 bar [360 - 940 psi]
B= 65 - 155 bar [940-2250 psi]
C= 155 - 215 bar [2250-3120 psi]

Voltage
00 = No coil
12 = 12 VDC
24 = 24 VDC

Termination
0 = No connector
DE = Deutsch
DN = DIN 43650
FL = Lead wires
AJ = AMP Jr

Adjustment option:
E = External
F = Tamper resistant
H = Hidden

Seals
B = Buna-N
V = Viton

Seal Kit
354001319
354001819

Housing and ports
00 = No Housing
DG4B = AL,1/2 BSP
DG6B = AL, 3/4 BSP
10S = AL, #10 SAE
12S = AL, #12 SAE
Other housings available

Housing P/N
No Housing
SDC12-2-DG-4B
SDC12-2-DG-6B
SDC-12-10S
SDC-12-16S

P103 777E

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Cartridge Valves Technical Information
Proportional Valves
Proportional Pressure Relieving
XMP 06

COMPLIANT

OPERATION

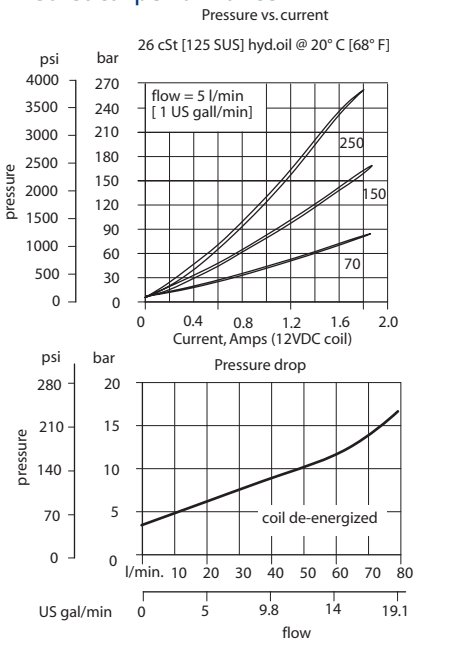
This is a pilot-operated, normally-open, proportional relief valve.

SPECIFICATIONS

Specifications

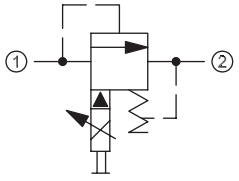
Rated pressure	315 bar [4500 psi]
Rated flow	50 l/min [13 US gal/min]
Weight	0.53 kg [1.17 lb]
Hysteresis	3% maximum
Threshold current	0 A (12 VDC coil) 0 A (24 VDC coil)
Maximum control current	1.8 A (12 VDC coil) 0.9 A (24 VDC coil)
Cavity	NCS06/2
Standard Coil	M19P 22 Watt

Theoretical performance



P103 697E

Schematic

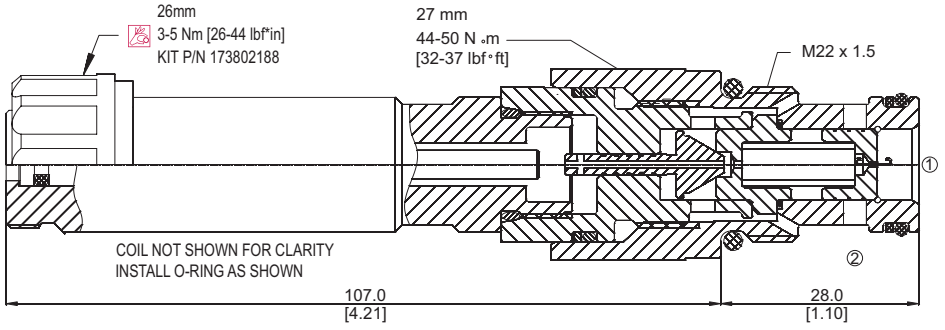


P103 512

DIMENSIONS

mm [in]

Cross-sectional view



P103 669

ORDERING INFORMATION

XMP 06 - 70 - 24D -DE - EN - 00 - V

Setting range
70 = 3-70 bar [44-1015 psi]
150 = 5-150 bar [73-2176 psi]
250 = 7-250 bar [102-3626 psi]

Solenoid
12D-A = 12VDC
24D-A = 24VDC

Connector
00 = No connec
AJ = AMP Jr
DE = Deutsch
DN = DIN 43650 (ISO 4400)
DN1 = "DN" w/Connector

Manual override
00 = With pushing control (Standard)
EN = With screw control

Housings and Ports
0 = Cartridge
SE-4B ½"BS PP, Alum
SE-6S #6 SAE, Alum
SE-8S #8 SAE, Alum
other styles available

Seals
V = Viton Seals
Ignore for Buna-N

P103 724E

Comatrol
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MEMBER OF THE SAUER-DANFOSS GROUP

Cartridge Valves Technical Information
Proportional Valves
Notes

COMPLIANT