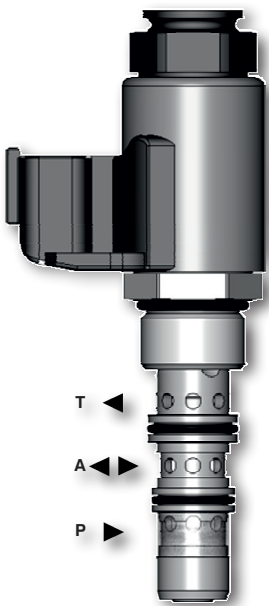


SP4P1-B4

7/8-14 UNF • Q_{max} 40 l/min (11 GPM) • p_{max} 30 bar (435 PSI)



T
A
P

Technical Features

- › Excellent stability throughout flow range with rapid response to proportional current input change
- › Low hysteresis, accurate pressure control and low pressure drop through CFD optimized flow paths
- › Precise pressure control vs current and excellent repeatability
- › Integrated relief function for protection against pressure peaks
- › Solenoid electrical terminal: AMP Junior Timer or Deutsch DT04-2P
- › 12 or 24 V DC coils
- › Compact design with reduced solenoid dimensions for production cost saving
- › High flow capacity and low coil power consumption
- › Optional mesh screen
- › In the standard version, the valve is zinc-coated for 240 h protection acc. to ISO 9227. Enhanced surface protection for mobile sector available for the steel parts (ISO 9227, 520 h salt spray)

Functional Description

A pilot-operated, spool-type hydraulic pressure reducing valve in the form of a screw-in cartridge. Reduced pressure output is proportional to DC current input. This valve is intended for use as a pressure limiting device. Note: Consult factory for special OEM versions of this product.

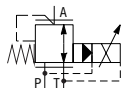
An electronic control unit (ECU) EL7 is used for the valve control. The ECU converts the input command signal into an output current control PWM signal for solenoid coils. The ECU EL7 is available as external for connection to the DIN rail (EL7-E, see datasheet HA 9152) or integrated on the valve in the form of connector plug (EL7-I, see datasheet HA 9151).



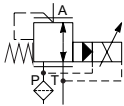
For B4 cavity (C-10-4)
The front channel **cannot be** used due to high pressure loss.

Symbol

no mesh screen



with mesh screen



The volume flow, which is needed for control of output pressure and maintaining the adjusted value of reducing pressure, flows permanently through the pilot stage of valve.

Technical Data

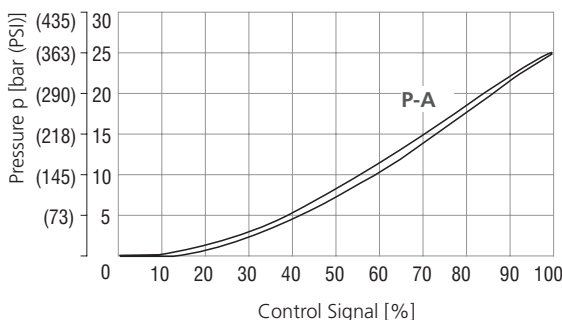
| Valve size / Cartridge cavity | | 7/8-14 UNF-2A / B4 (C-10-4) | |
|-----------------------------------|------------------|---|------------|
| Max. operating pressure (port P) | bar (PSI) | 30 (435) | |
| Max. reducing pressure (port A) | bar (PSI) | 25 (363) | |
| Max. flow rate P-A | l/min (GPM) | 40 (11) | |
| Max. control flow | l/min (GPM) | 0.4 (0.12) | |
| Fluid temperature range (NBR) | °C (°F) | -30 ...90 (-22 ...194), +100 (212) short time | |
| Fluid temperature range (FPM) | °C (°F) | -20 ...90 (-4 ...194), +100 (212) short time | |
| Ambient temperature range | °C (°F) | -30 ...90 (-22 ...194), +100 (212) short time | |
| Response time at 100 % signal | ms | < 50 | |
| Solenoid data | | | |
| Supply voltage | V | 12 DC | 24 DC |
| Limit current | A | 0.7 | 0.35 |
| Rated resistance at 20 °C (68 °F) | Ω | 7.82±5 % | 29.5±4.5 % |
| Duty cycle | % | 100 | |
| Optimal PWM frequency | Hz | 200 | |
| Quenching diode | | BZW06-28B | BZW06-33B |
| Enclosure type acc.to EN 60529** | | (acc.to terminal type) IP67 / IP69K | |
| Weight with solenoid | kg (lbs) | 0.3 (0.66) | |
| Data Sheet | | Type | |
| GI_0060 | | Products and operating conditions | |
| General information | | | |
| Coil types | | C_8007 | |
| Valve bodies | In-line mounted | SB_0018 | |
| | Sandwich mounted | SB-04(06)_0028 | |
| Cavity details / Form tools | | SMT_0019 | |
| Spare parts | | SP_8010 | |
| Compatible control unit | | EL7-E* | |

**The indicated IP protection level is only reached with a properly mounted connector.

Characteristics measured at $v = 32 \text{ mm}^2/\text{s}$ (156 SUS)

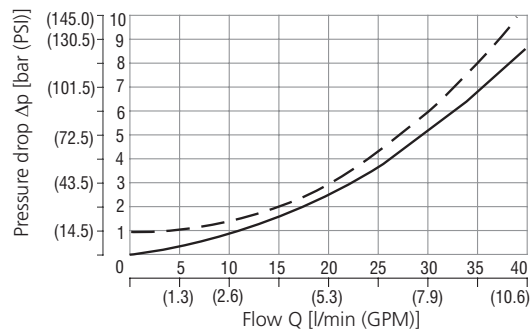
Reduced pressure related to control signal

Port A of range 0 - 25 bar (363 PSI), $Q = 0 \text{ lpm}$ (GPM)
Port P inlet pressure 30 bar (435 PSI)
measured without mesh screen



Pressure drop related to flow rate

— A-T Valve coil de-energized (relieving function)
— P-A Valve coil energized (reducing function)
measured without mesh screen

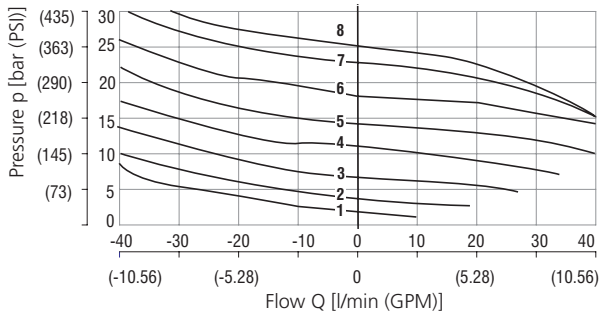


Characteristics measured at $v = 32 \text{ mm}^2/\text{s}$ (156 SUS)

Reducing - relieving pressure related to flow rate

Reducing pressure range 0 - 25 bar (0 - 363 PSI), input 30 bar (435 PSI)
 various control currents
 measured without mesh screen

relieving function A-T / reducing function P-A

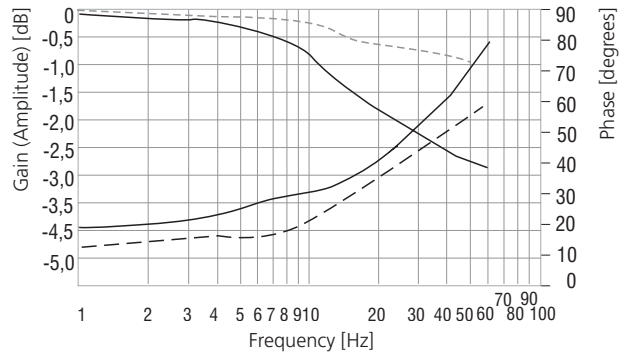


| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|-----|-----|-----|-----|-----|-----|-----|------|
| 24% | 35% | 47% | 59% | 70% | 82% | 94% | 100% |

Frequency response characteristics

Inlet pressure at port P - 30 bar (435 PSI), flow = 0 lpm (GPM)

----- signal $70 \pm 25\%$
 ——— signal $55 \pm 40\%$

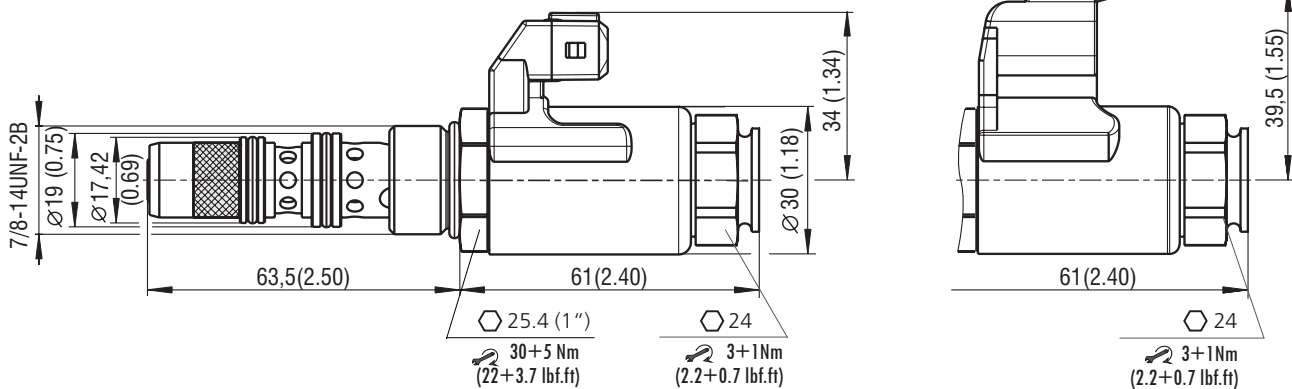


Dimensions in millimeters (inches)

Connector type

E3A, E4A - IP67
 AMP Junior Timer

E12A, E13A - IP67 / IP69K
 Deutsch DT04-2P



Ordering Code

SP4P1-B4 / [] - [] [] [] - [] []

Proportional pressure control valve,
 reducing - relieving, pilot operated,
 screw-in style

Valve cavity
 7/8-14 UNF (C-10-4)

Max. reducing pressure
 20 bar (290 PSI) 20
 25 bar (363 PSI) 25

Supply voltage / limit current
 12 V DC / 0.7 A 12
 24 V DC / 0.35 A 24

No designation
 SP-300

Mesh screen
 without mesh screen
 port P, 300 microns

A
 B

Surface treatment
 zinc-coated (ZnCr-3), ISO 9227 (240 h)
 zinc-coated (ZnNi), ISO 9227 (520 h)

No designation
 V

Seals
 NBR
 FPM (Viton)

E3A
 E4A
 E12A
 E13A

Connector
 AMP Junior Timer - axial direction (2 pins; male)
 E3A with quenching diode
 Deutsch DT04-2P - axial direction
 E12A with quenching diode