

General Description

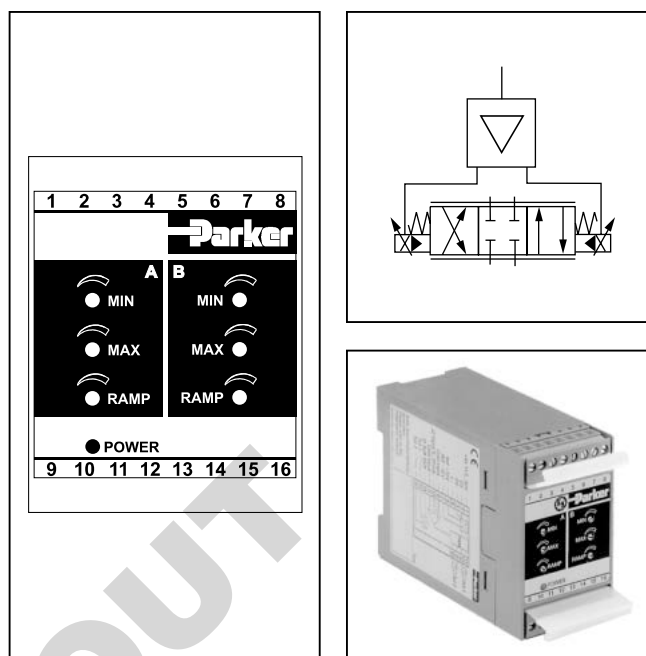
Series PW**404 electronic module is used to control non-feedback D*FW and D*1FW proportional directional valves. The module accepts a ± 10 volt or a ± 20 mA command signal, and produces a proportionally linear output current used to drive the valve's proportional solenoid. There is also a soft shift mode where on-off signals can trigger the module to command the attached valve to smoothly shift to a predetermined command position.

Features

- Driver for all D*FW and D*1FW proportional valves.
- Standard DIN rail package – EN 5022 rail mount.
- Differential command input (voltage or current).
- Adjustable Ramp generator.
- MIN adjustments for spool deadband compensation.
- MAX adjustments for maximum flow adjustment.
- Soft shift mode — user selectable.
- Detachable terminal strips.

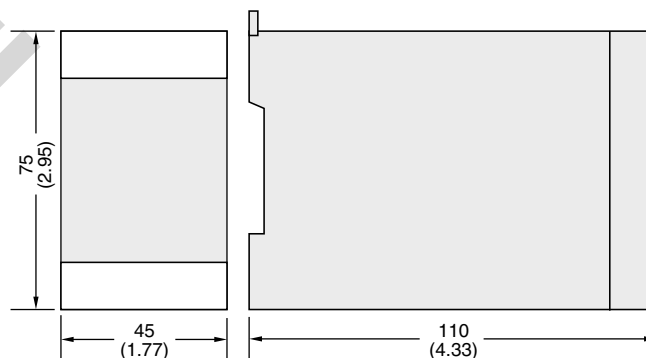
Specifications

Package	DIN rail mount – EN 5022
Power Supply	30 VDC maximum, refer to “Valve Applications – Solenoid” for minimum voltage, 5% ripple max.
Current Consumption	3.5 amps max., 200 mA more than max. operating current. Refer to “Valve Applications — Solenoid” for rated solenoid current.
Command Signal	0 ± 10 VDC or 0 ± 20 mA user selectable
Command Polarity	Pin '5' more positive than pin '6' energizes 'sol B' (pins 11, 12)
Reference V. Outputs	10 VDC and -10 VDC; $\pm 5\%$, 10 mA max.
Soft Shift Inputs logic 'off' logic 'on'	0 to 5 VDC 11.5 to 30 VDC, 15 mA (max. load)
Soft Shift Polarity	Pin '15' triggers 'solenoid B' Pin '16' triggers 'solenoid A'



Dimensions

Inch equivalents for millimeter dimensions are shown in (**)



Max. Output Current	See Ordering Information
Dither Frequency @ Amplitude	100 Hz @ 6% of rated current
Ramp Time	Adjustable; 0 to 3 seconds
Ambient Temperature	-20°C to 60°C (-20°F to 140°F)
Electrical Connection	Screw-in terminals, removable
Shielded Cable	Supply connections and solenoids 1.5 sq. mm (16 AWG) Command Signals: 0.5 sq. mm (20 AWG)
Cable Length	50 M (162 feet) max.
Cable Capacitance	130 pF/M between conductors, max.
EMC Compatibility	EN 50081-2, EN 50082-2, EN 55011, ENV 50140, EN61000-4-4, EN50204, EN61000-4-5, EN61000-4-2, EN61000-4-6

Ordering Information

PW
 Packaged Module
 DC Valves

[]
 Maximum
 Current

A

404
 Module Type

[]
 Design
 Series

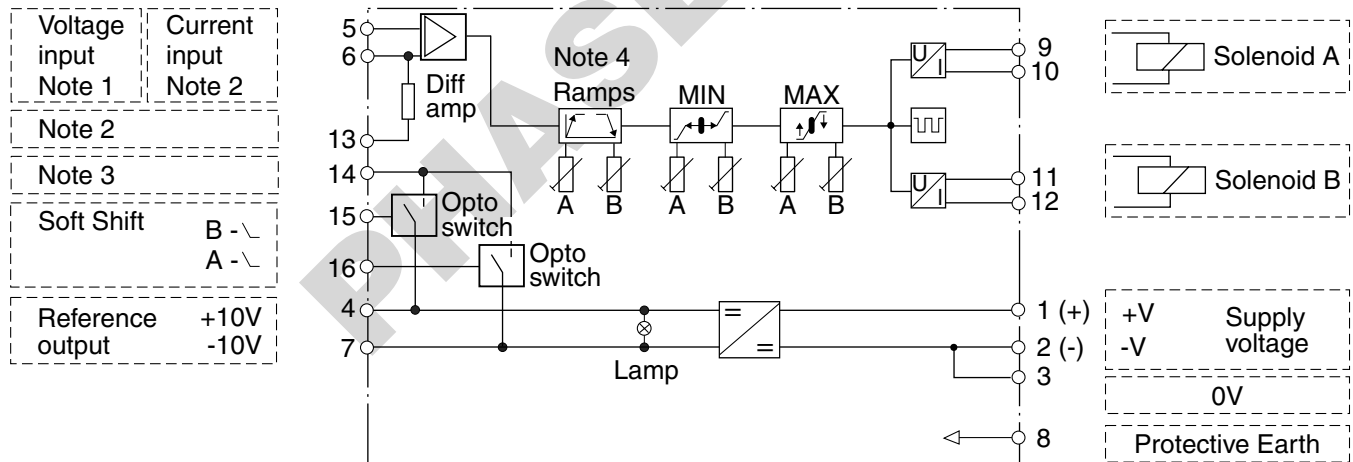
NOTE:
 Not required
 when ordering.

Code	Description
18	1.8A
25	2.5A
35	3.5A

Code	Description
404	Amplifier, adjustable, MIN/MAX-limiting, UP/DOWN ramps

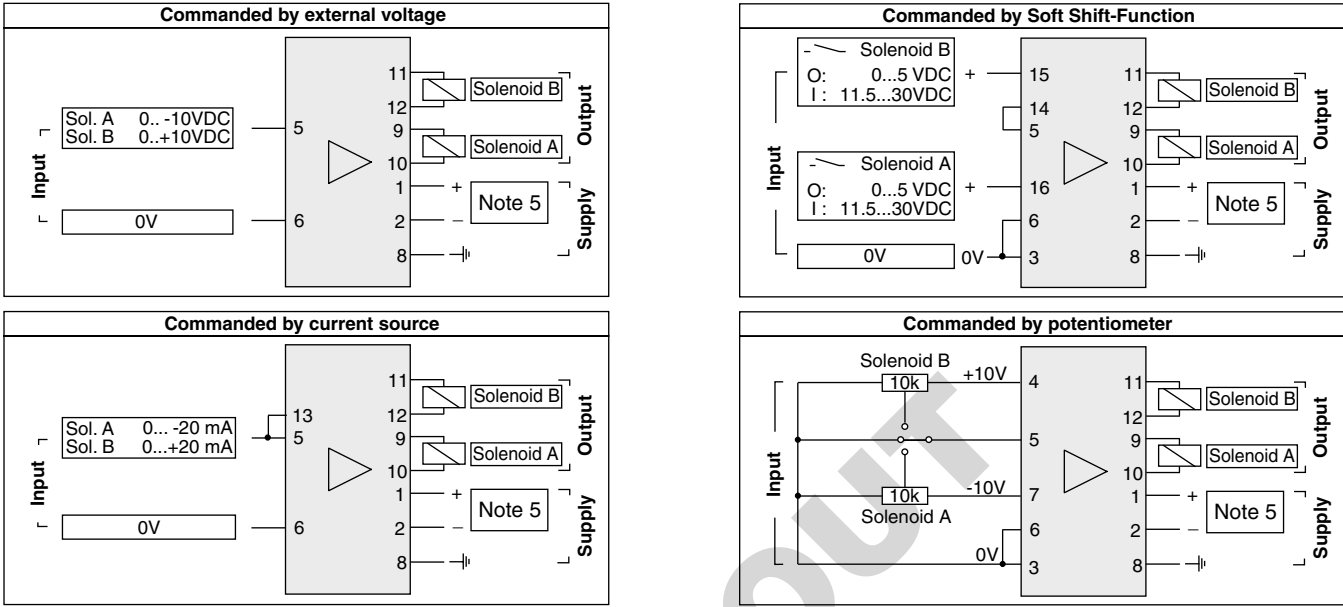
For new applications:
PW404: Refer to PWD00A-400**

Block Diagram



- Note 1: For voltage command inputs ($\pm 10V$), use pins 5 and 6. Refer to command polarity specifications.
- Note 2: For current command inputs (± 20 mA), connect pins 5 and 13, and apply current command signal to pins 5 and 6. Refer to command polarity specifications.
- Note 3: For soft-shift mode, connect pins 5 and 14. "On" signal to pin 15 triggers "solenoid B"; "On" signal to pin 16 triggers "solenoid A". Adjust actuator speed with 'MAX' potentiometers, ramp times for soft shift with 'RAMP' potentiometers. Adjust 'MIN' potentiometers as required. Refer to specifications for required voltage levels.
- Note 4: There are two ramp potentiometers. Ramp A adjusts both the accel and decel rate for "solenoid A". Ramp B adjusts both the accel and decel rate for "solenoid B".

Wiring Diagram



Note 5: Refer to Power Supply specification.

Valve Applications — Solenoid

Series PW*404 electronic module is used to control non-feedback one and two stage proportional valves. Refer to the chart below to determine the correct module current rating required for your valve application.

Valve Type	Code	Solenoid Rated Voltage (volts)	Rated Current (amps)	PW Module (order code)	Supply Voltage Range (volts DC)
D1FW	K	12	1.8	PW18A-404	17.5 to 30
	M	9	2.5	PW25A-404	14.5 to 30
D3FW	K	12	2.5	PW25A-404	17.5 to 30
D*1FW	L	6	2.5	PW25A-404	11.5 to 30
	X	16	1.3	PW18A-404	21.5 to 30