EXTRA QUICK RESPONSE TYPE PROPORTIONAL
PRESSURE RELIEF & FLOW CONTROL VALVES
PRESSURE CONTROL LOGIC VALVES
CARTRIDGE TYPE CHECK VALVES
AMPLIFIERS

SGS-TÜV NO. 6042/00/0029

ISO 9001 URS REGISTERED FIRM UKAS QUALITY MANAGEMENT 043

▲ SUPER PRECISION CNC GRINDING MACHINES

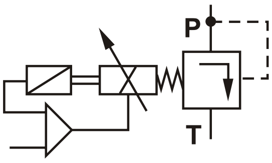
▲ CUSTOM MACHINES

EXTRA QUICK RESPONSE TYPE PROPORTIONAL ELECTRO-HYDRAULIC PRESSURE RELIEF VALVES

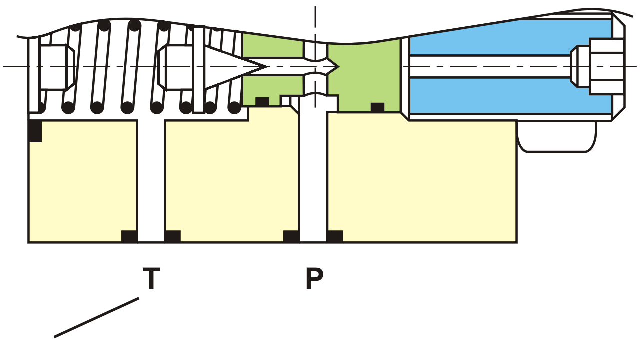
(WITH POSITION CONTROL)

PPG-02

SYMBOL



TYPICAL SECTION



T port (Pmax.≦2 bar)
Separate pipe required, back to the tank

Model Codes	Pressure Range Pnom.: bar	Flow Qnom.: ℓ/min	Solenoid current/ Max. power consumption A/VA max.	Net Weight Kg
PPG-02-30	1.5 ~ 30	1	3.72/62	4.45
PPG-02-80	3.0 ~ 80			
PPG-02-180	4.0 ~ 180			
PPG-02-250	5.0 ~ 250			
PPG-02-315	6.0 ~ 315			

Specific Amplifier：PPE-103 (see page 15 & 16)
Mounting Bolts：4-M5 x 50　Torque：6~8Nm

GENERAL DESCRIPTION

Construction Type	Poppet Valve
Actuation Type	Proportional solenoid with position control
Connection Type	Subplate, mounting hole configuration ISO 03 (ISO 4401-03)
Mounting Position	Horizontal position preferred
Ambient Temperature Range	-20 ~ +50°C

HYDRAULIC DESCRIPTION

Driving Fluids		Hydraulic Oil as per DIN 51 524...535, refer to supplier for others				
Viscosity	recommended	20 ~ 100 mm^2/s				
	max.	10 ~ 800 mm^2/s				
Hydraulic Oil Temperature		-20 ~ +80°C				
Filtration		Permissible contamination class of driving fluids as per NAS 1638			Achieved using filter βx = 75	
In line with operational reliability and service life		8			X = 10	
		9			20	
		10			25	
Nominal Pressure	at Q=1ℓ/min	30 bar	80 bar	180 bar	250 bar	315 bar
Minimum Pressure	at Q=1ℓ/min	1.5 bar	3.0 bar	4.0 bar	5.0 bar	6.0 bar
Max. Working Pressure		Port P: 315 bar Port T: ≦ 2 bar				

ELECTRICAL DESCRIPTION

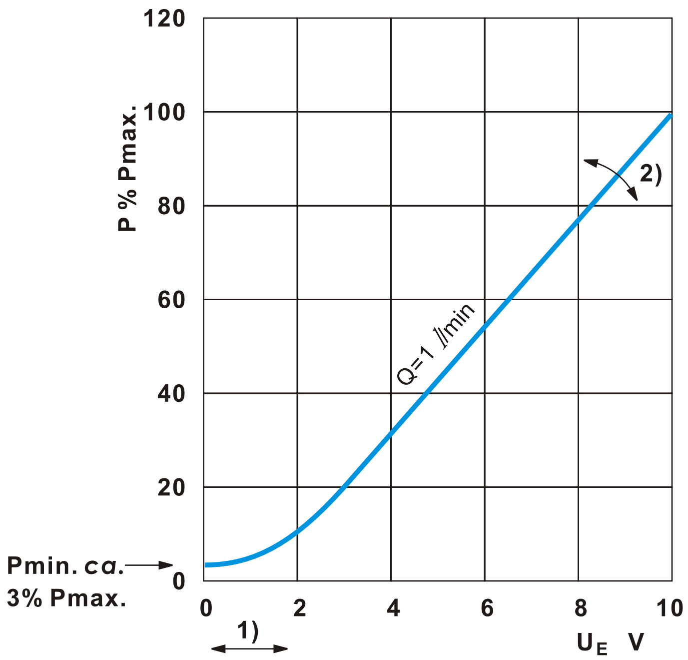
Cyclic Duration Factor	100%
Degree of Protection	IP 65 as per DIN 40 050 and IEC 14 434/5
Solenoid Connector	Connector DIN 43 650/ISO 4400
Position Transducer Connector	Special Connector
Solenoid Current	3.72 A max.
Coil Resistance R20	2.5 Ω
Max. power consumption at 100% load and operational temperature	62 VA max.

STATIC/DYNAMIC DESCRIPTION

Hysteresis		≦ 0.3%
Range of Inversion		≦ 0.2%
Response Time	100% Signal Change	≈ 43 ms
	10% Signal Change	≈ 23 ms

PERFORMANCE CURVE

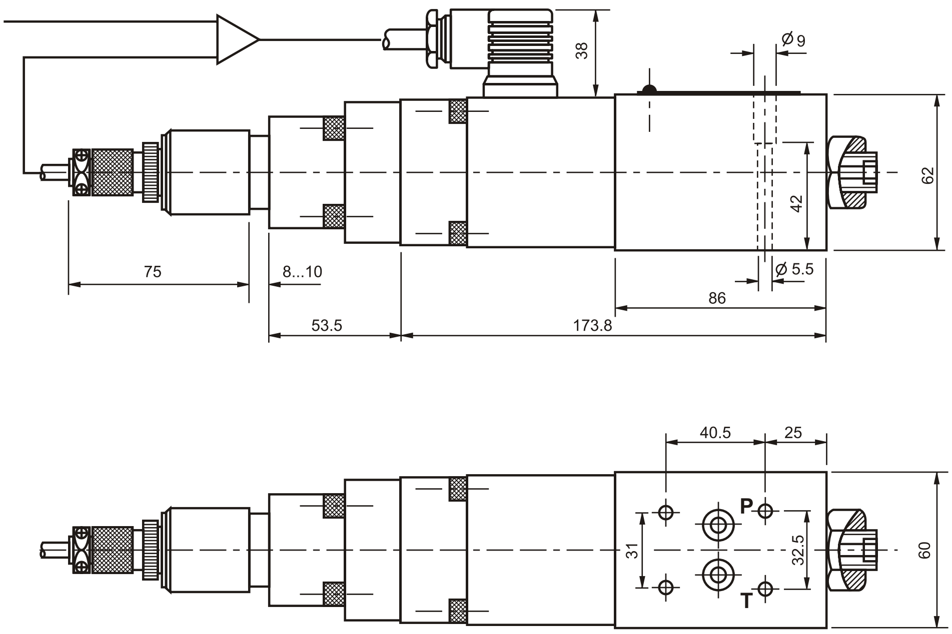
V=35mm²/s



1) Zero Adjustment
2) Gain Adjustment

DIMENSIONS

PPG-02



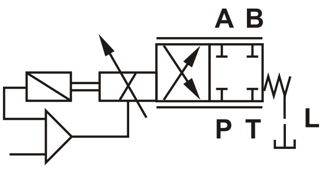
※For subplates, please refer to page 10

EXTRA QUICK RESPONSE TYPE PROPORTIONAL ELECTRO-HYDRAULIC FLOW CONTROL VALVES

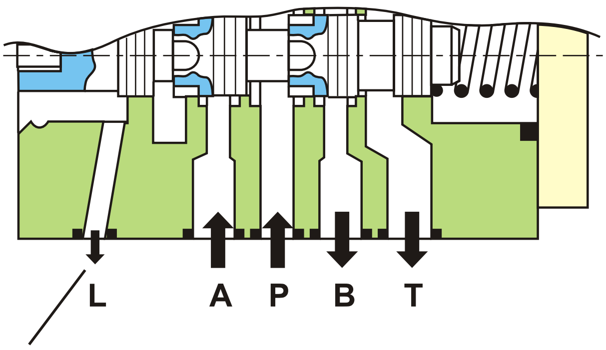
(WITH POSITION CONTROL)

QPG-03

SYMBOL



TYPICAL SECTION



Additional drain port (Pmax.≦2 bar)
Separate pipe required, to back to the tank

Model Codes	Flow △P=5 bar Qnom.:ℓ/min	Max. Working Presure Pmax.: bar	Solenoid current/ Max. power consumption A/VA max.	Net Weight Kg
QPG-03-16	16	P.A.B: 315 T:250 L:≦2	3.72/62	6.15
QPG-03-32	32			
QPG-03-63	63			

Specific Amplifier : QPE-106 (see page 15 & 16)
Mounting Bolts : 4-M6 x 35   Torque : 13~16Nm

GENERAL DESCRIPTION

Construction Type	Spool type Valve
Actuation Type	Proportional solenoid with position control
Connection Type	Subplate, mounting hole configuration ISO 05 (ISO 4401-05 + L drain part)
Mounting Position	Horizontal position preferred
Ambient Temperature Range	-20 ~ +50°C

HYDRAULIC DESCRIPTION

Driving Fluids		Hydraulic Oil as per DIN 51 524...535, refer to supplier for others		
Viscosity	recommended	20 ~ 100 mm²/s		
	max.	10 ~ 800 mm²/s		
Hydraulic Oil Temperature		-20 ~ +80°C		
Filtration		Permissible contamination class of driving fluids as per NAS 1638		Achieved using filter βx = 75
In line with operational reliability and service life		8		X = 10
		9		20
		10		25
Nominal Flow (at △P=5 bar)		16 ℓ/min	32 ℓ/min	63 ℓ/min (per channel)
Max. Working Pressure		Port P.A.B. : 315 bar Port T : 250 bar Port L : ≦ 2 bar		

ELECTRICAL DESCRIPTION

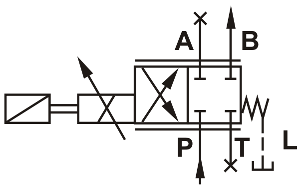
Cyclic Duration Factor	100%
Degree of Protection	IP 65 as per DIN 40 050 and IEC 14 434/5
Solenoid Connector	Connector DIN 43 650/ISO 4400
Position Transducer Connector	Special Connector
Solenoid Current	3.72 A max.
Coil Resistance R20	2.5 Ω
Max. power consumption at 100% load and operational temperature	62 VA max.

STATIC/DYNAMIC DESCRIPTION

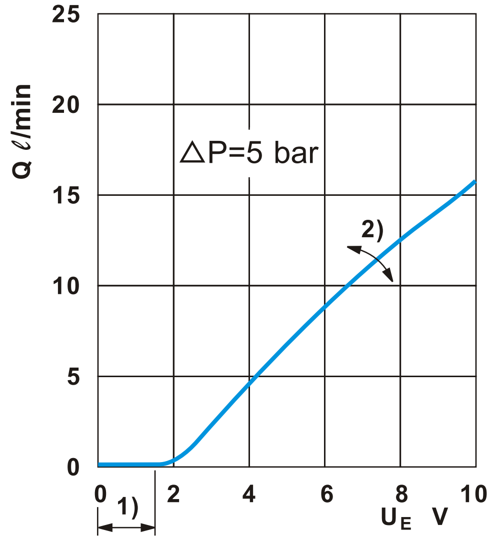
Hysteresis		≦ 0.3%
Range of Inversion		≦ 0.2%
Response Time	100% Signal Change	≈ 23 ms
	10% Signal Change	≈ 13 ms

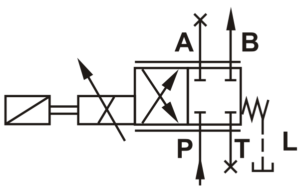
PERFORMANCE CURVE

V=35mm²/s

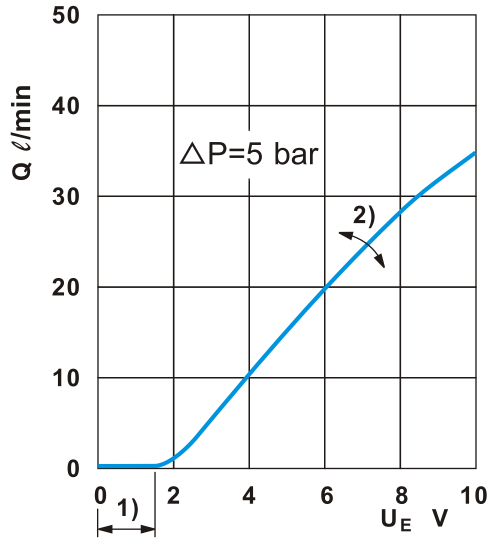


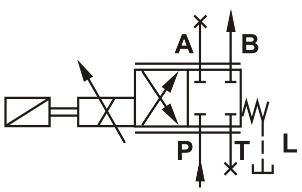
Pmax.=315 bar
Qnom=16 ℓ/min





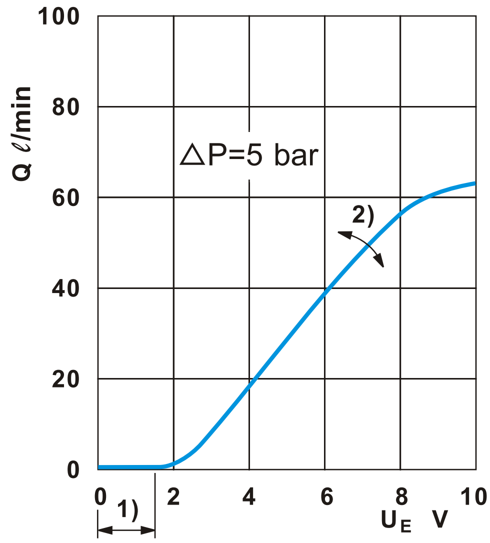
Pmax.=315 bar
Qnom=32 ℓ/min





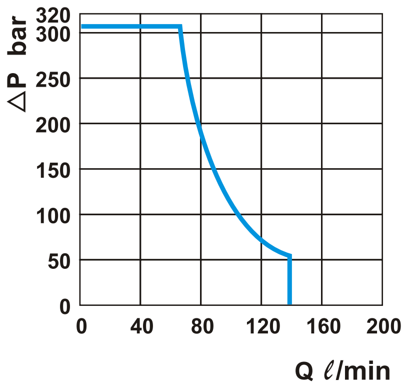
1) Zero Adjustment
2) Gain Adjustment

Pmax.=315 bar
Qnom=63 ℓ/min

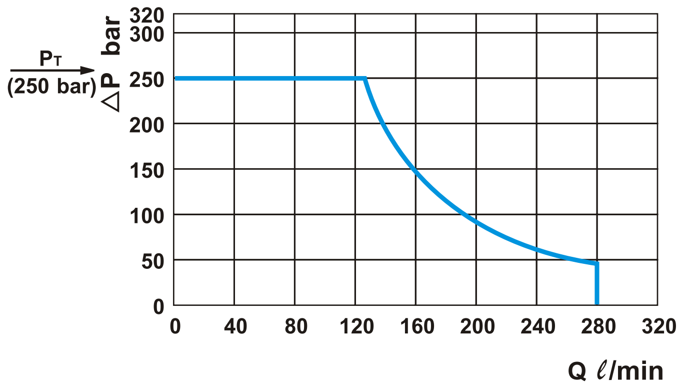


OPERATING LIMITS

Single Flow

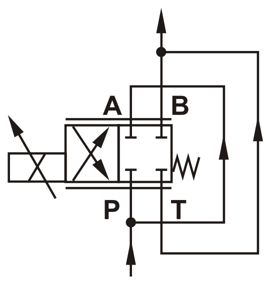


Double Flow



SYMBOL

Double Flow Rate
Pmax.=250 bar



NOMINAL FLOW

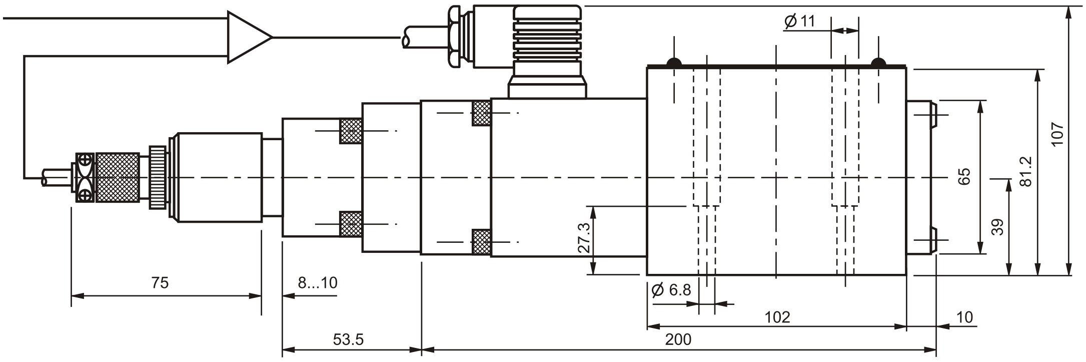
Always based on a pressure differential of △P=5 bar at the throttle point. Where other pressure differentials are involved, flow is calculated in accordance with the following formula.

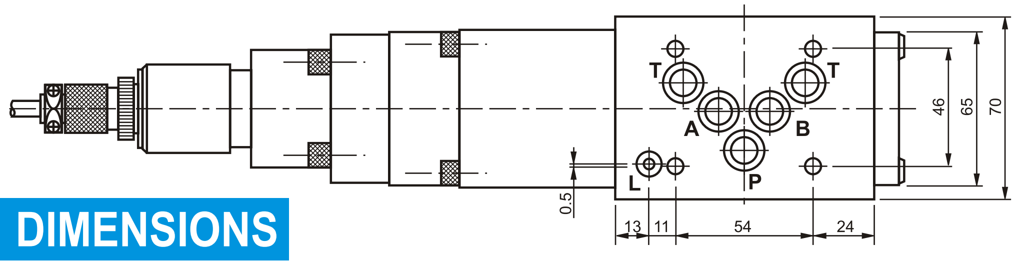
$$Qx=Qnom.\cdot\sqrt{\frac{\Delta Px}{5}}$$

However, the "operating limits" must be noted here. When the operating limits are exceeded, the flow forces cause uncontrollable spool movement. To obtain effective limitation of △P, pressure compensators should be used.

VALVE DIMENSIONS

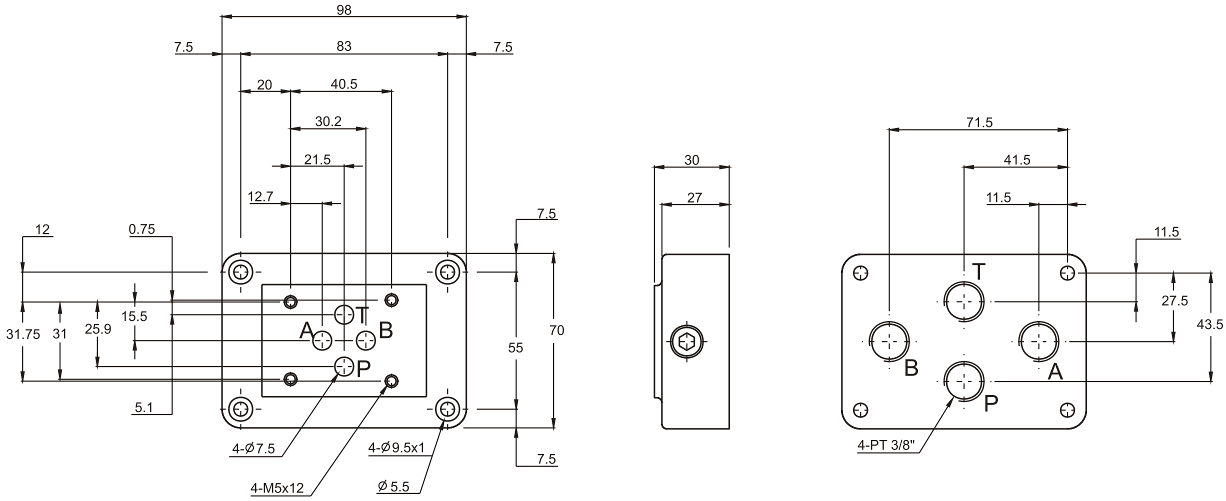
QPG-03



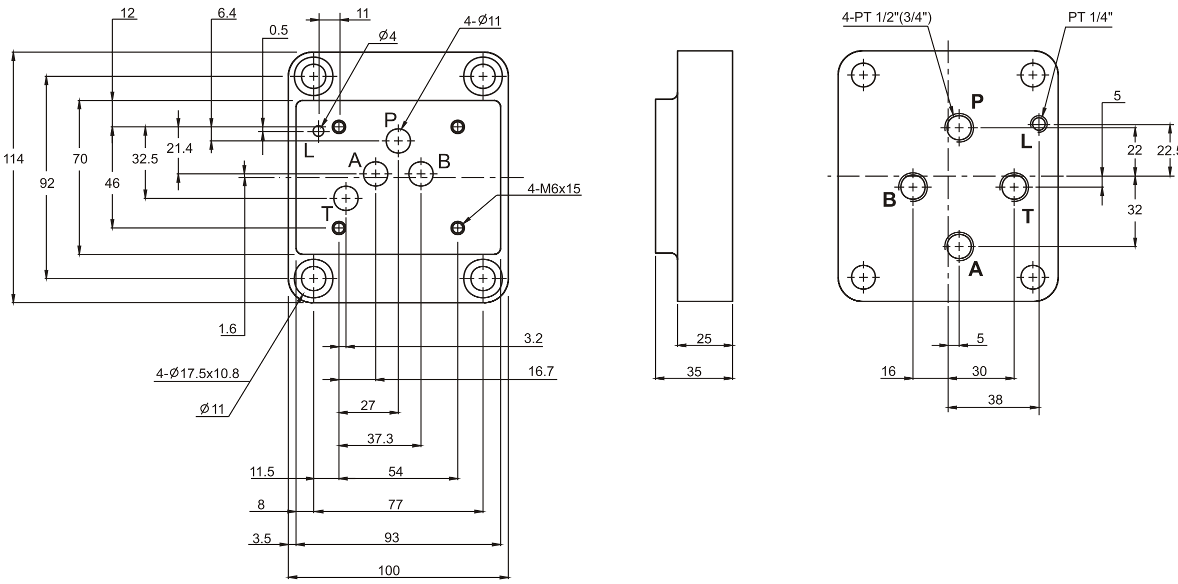


SUBPLATE DIMENSIONS

PPG-02 (ISO-4401-03)



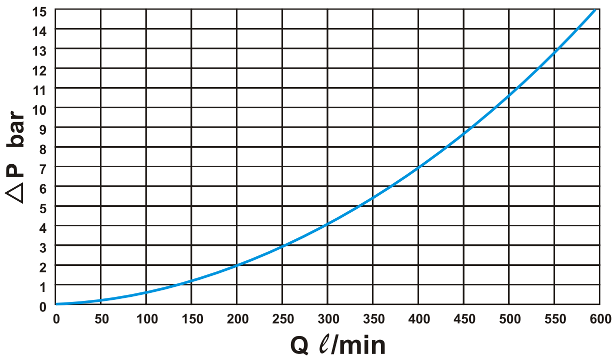
QPG-03 (ISO-4401-05+L)



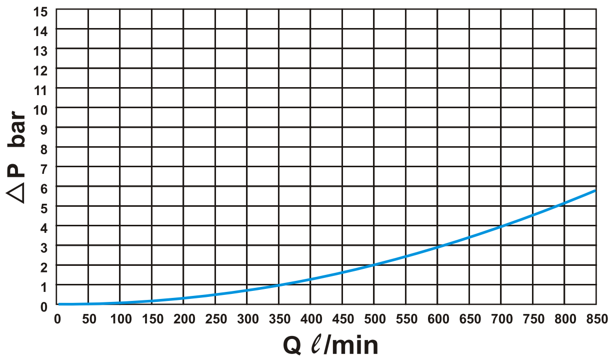
PRESSURE CONTROL LOGIC VALVES (ISO-7368)
LGP16 / LGP25

PRESSURE DROP CURVE

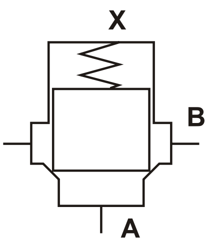
LGP16



LGP25



SYMBOL

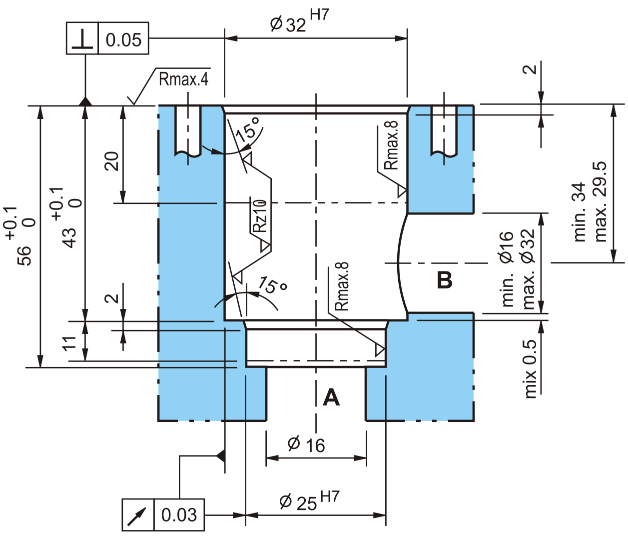


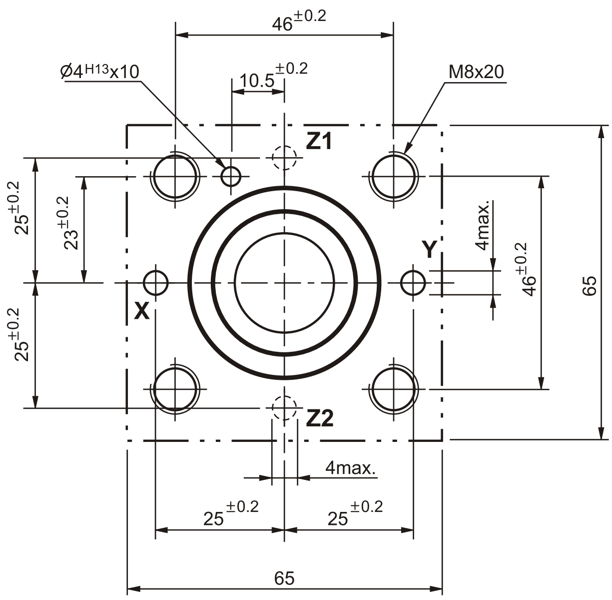
$$\frac{PX}{PA} = \frac{1}{1}$$

Model Codes	Spring Pressure bar	Flow Rate △P=2 bar Q:ℓ/min	Working Pressure bar	Net Weight Kg
LGP16-A-01-00	1.0	200	315	0.2
LGP25-A-01-00	1.0	500	315	0.5

INSTALLATION DIMENSIONS

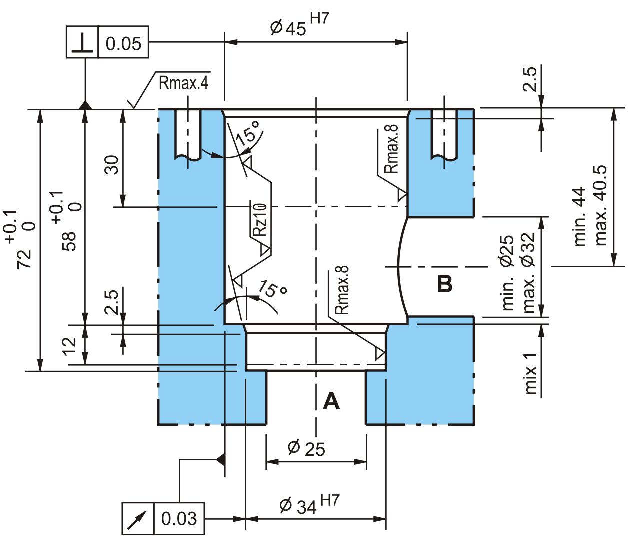
LGP16

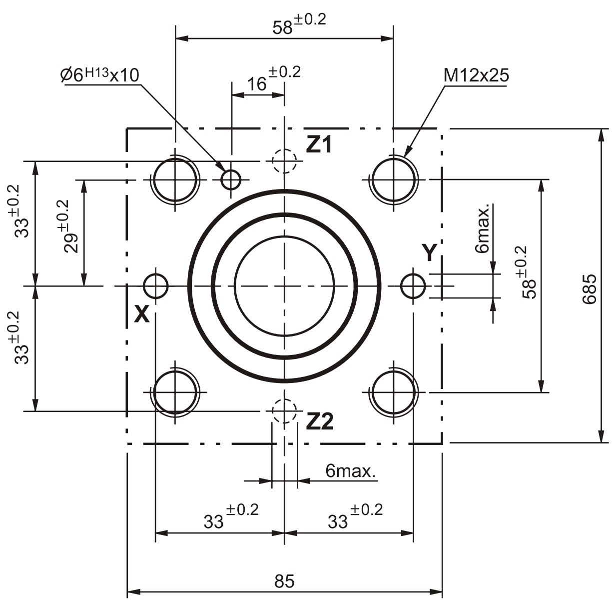




INSTALLATION DIMENSIONS

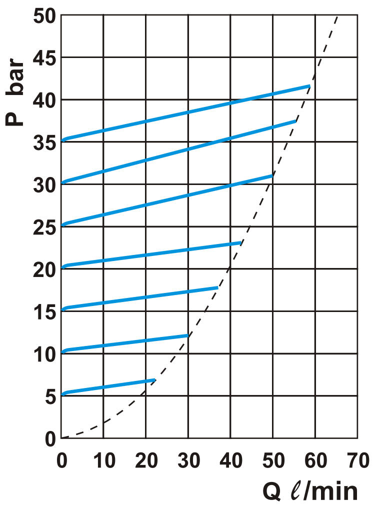
LGP25



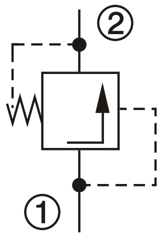


CARTRIDGE TYPE CHECK VALVES
CPR-30

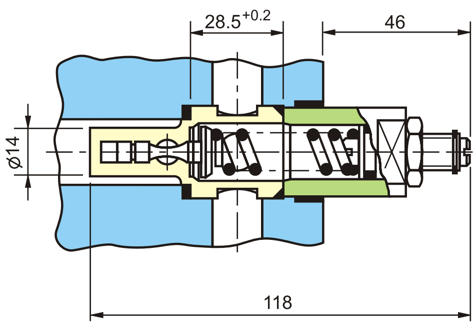
PERFORMANCE CURVE



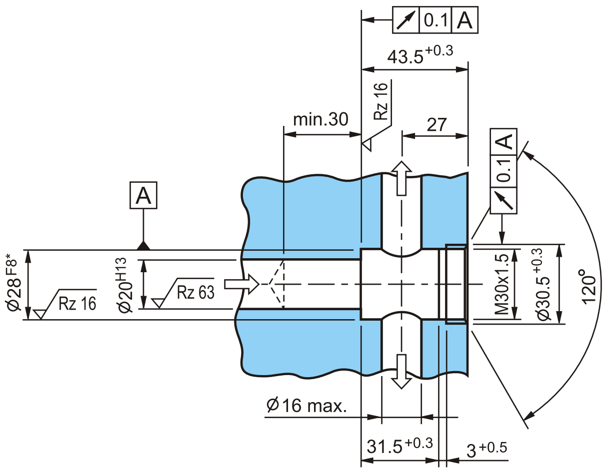
SYMBOL



TYPICAL SECTION

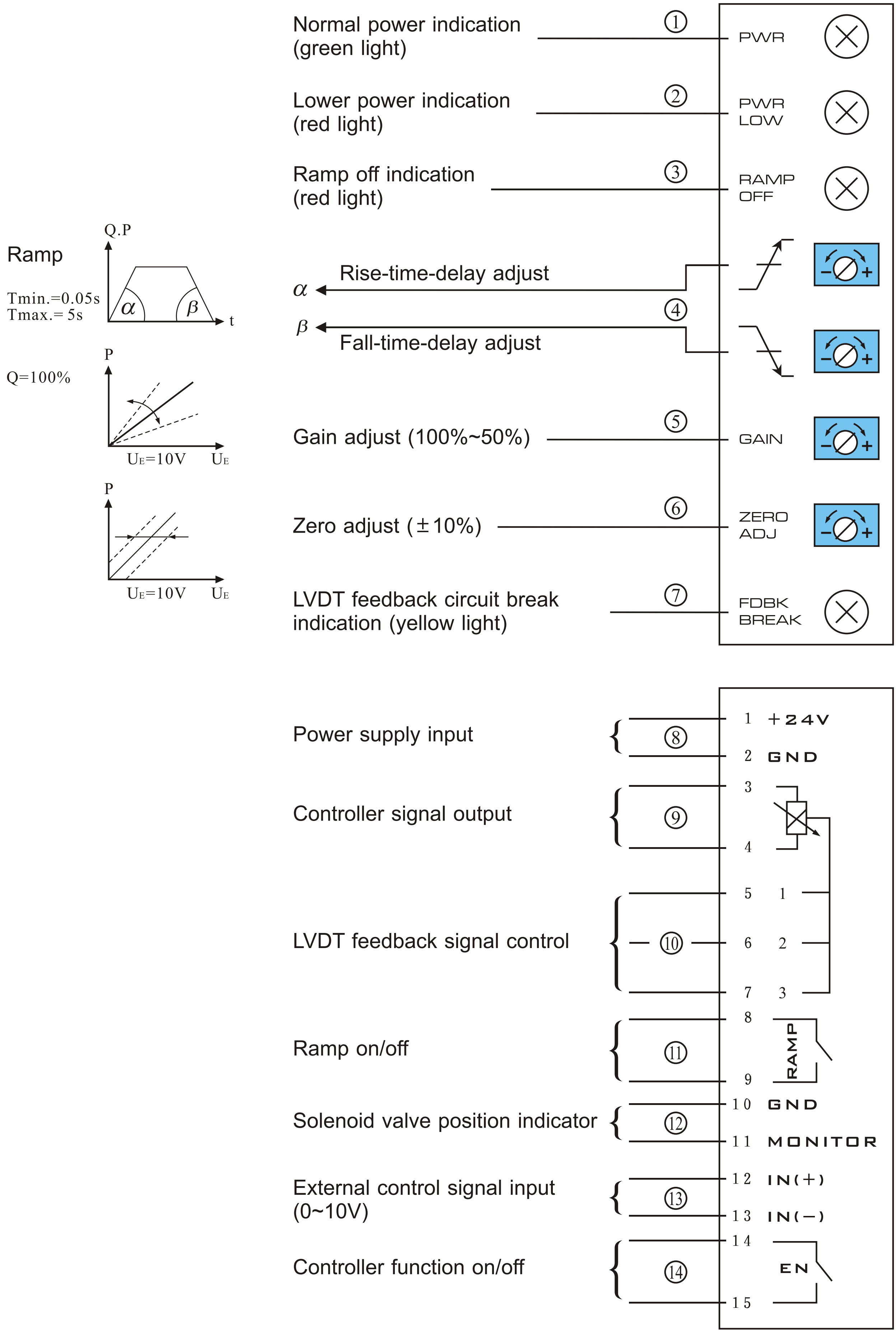


INSTALLATION DIMENSIONS



Model Codes	Pressure Range P: bar	Max. Working Pressure Pmax.: bar	Flow ℓ/min (△P=5 bar)	Net Weight Kg
CPR30-35-0	5~35	350	18	0.3

CONNECTION DIAGRAM



OPERATING INSTRUCTION

① **Normal Power indication (Green light)**
Connecting to DC power (24V) and jumping pins 14&15 to enable the Controller. Controller can function normally when the green indication light turns on.

② **Low power indication (Red light)**
The red indication light will turn on when input power is lower than 21VDC and the Controller can't function normally.

③ **Ramp off indication (Red light)**
If pins 8&9 are jumped, the red indication is on and the time delay function is off.

④ **Rise-time-delay and fall-time-delay adjust (Ramp function)**
※It is functional only when pins 8&9 are not jumped.
※Turning clockwise to increase delay-time (5 seconds maximum), counterclockwise to decrease delay-time (0.05 second minimum). Adjuster is at minimum for default and normal setting.

⑤ **Gain adjust (100%~50%)**
Turning "+" to increase signal gain (100% max.), or turning "-" to decrease signal gain (50% min.).

⑥ **Zero adjust (±10%)**
Adjust the deviation between the input signal zero and the actual valve zero position.

⑦ **LVDT feedback circuit break indication (yellow light)**
The LVDT feedback circuit break while yellow light is on. Check the connections to be sure the connecting lines are wired properly.

⑧ **Power supply input**
Controller power supply input terminals.

⑨ **Controller signal output**
Signal output to provide power to the solenoid valve.

⑩ **LVDT feedback signal control**
Connecting feedback signal to control the solenoid valve precisely.

⑪ **Ramp on/off**
Pins 8&9 can be jumped (opened) to disable (enable) the Ramp function.

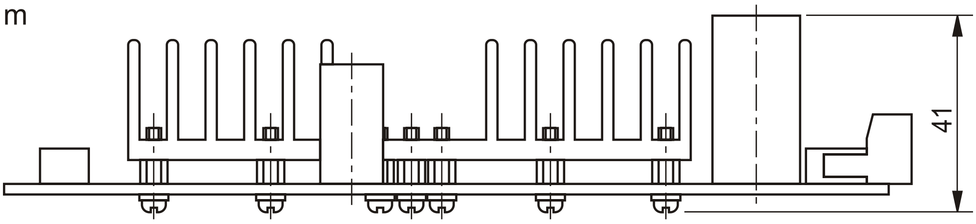
⑫ **Solenoid valve position indicator**
The actual valve position can be detected by measuring the voltage across these two terminals.

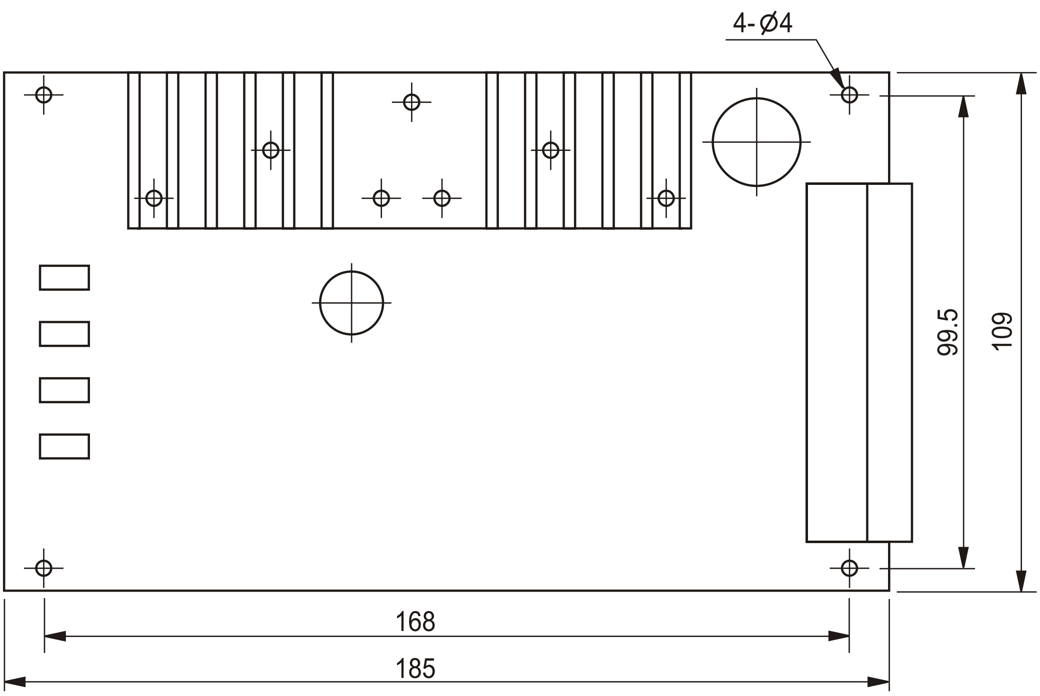
⑬ **External control signal input (0~10V)**
The external control signal (0~10V) can be entered through these two terminals.

⑭ **Controller function on/off**
Pins 14&15 can be jumped (opened) to enable (disable) the Controller.

DIMENSIONS

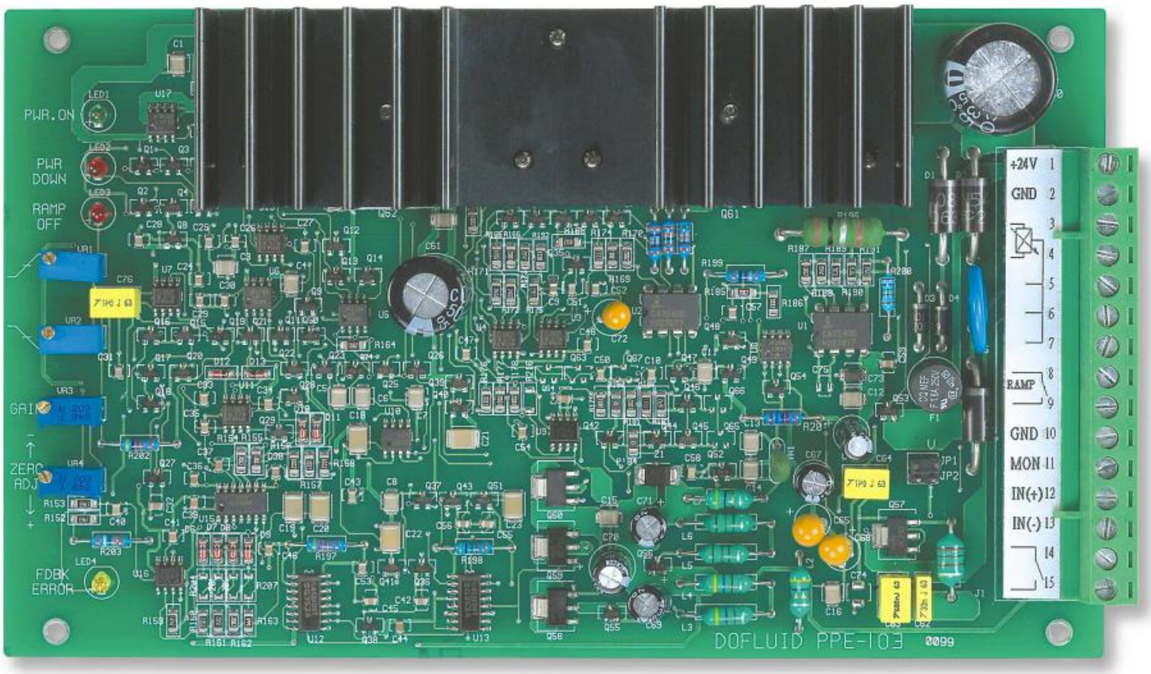
Units: mm



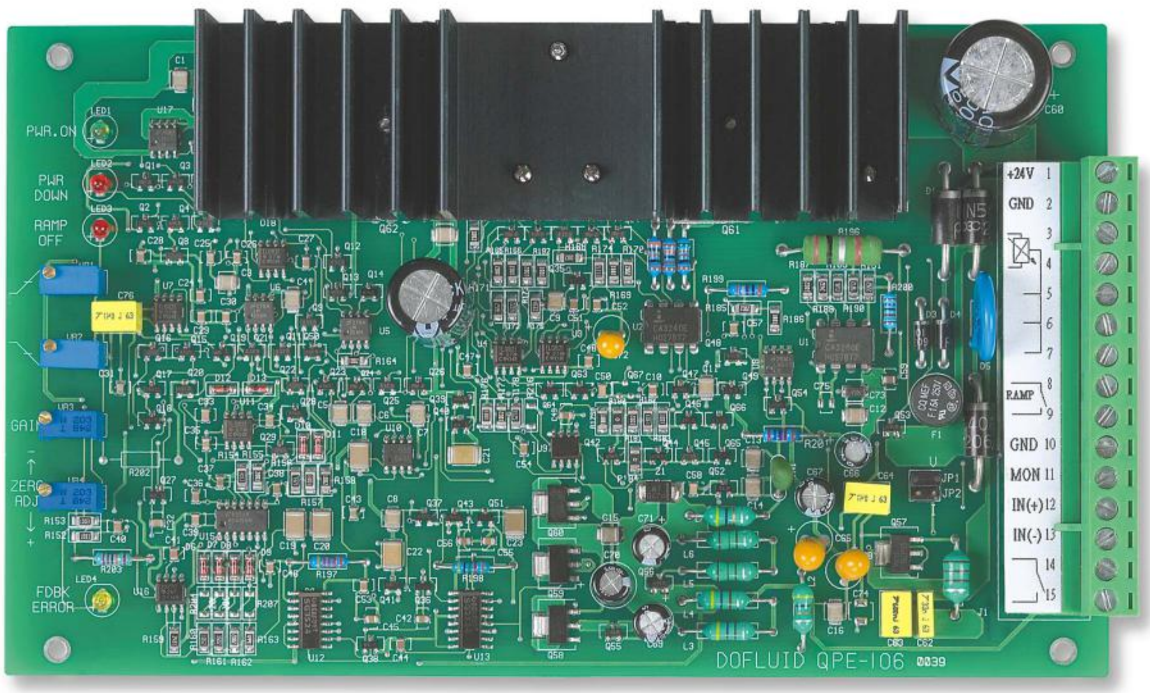


AMPLIFIER EXTERNAL LOOK

PPE-103



QPE-106



DOFLUID

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