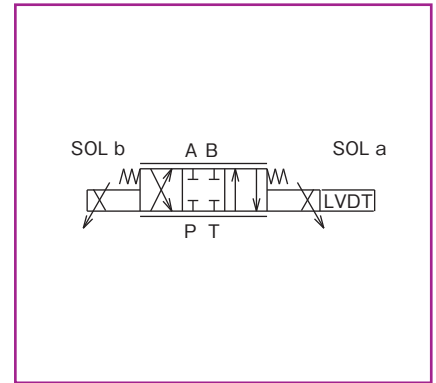


● Hydraulic symbols



■ Overview

Direct operated type solenoid proportional control valve consists of DC proportional solenoid with differential transformer (LVDT) and spring balance type spool valve, and spool displacement amount is detected by LVDT to make minor feedback.

The valve is used with a special controller to allow operating direction and flow rate to be controlled in proportion to the controller input voltage.

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■ Features

1. It has high response and high accuracy, and high performance equivalent to those of a simple servo valve.
2. The dead zone for flow rate adjacent to the neutral point is small.
3. The structure is simple and maintenance is easy.

■ Type indication

DDPL 6 P - 10 - 05 / 25 - B B -

Solenoid proportional type
 direct operated control valve with LVDT

Nominal dimension
 6

Connection method
 P = Gasket connection type

Series number: 10

Spool type
 05, 13, 23 = Double solenoid type
 05A, 05B, 13A, 13B, 23A, 23B = Single solenoid type
 * Refer to page 6-22 "Spool type symbols".

Type of hydraulic oil
 No symbol = Mineral based hydraulic oil
 V = Phosphate ester based hydraulic oil
 W = Fatty ester based hydraulic oil
 Water-glycol based hydraulic oil

Electric connection symbol
 B = DIN connector
 C = DIN large connector

Solenoid ratings
 B = 7.2Ω×1.5A

Rated flow rate (When ΔP=0.98Mpa)
 25 : 25 L / min
 15 : 15 L / min
 5 : 5 L / min

■ Sub-plate

Valve type	Sub-plate type	Connection diameter	Mass
DDPL6	P-DE6R14-0	Rc $\frac{1}{4}$	1.0kg
	P-DE6G14-0	G $\frac{1}{4}$	
	P-DE6R38-0	Rc $\frac{3}{8}$	1.3kg
	P-DE6G38-0	G $\frac{3}{8}$	

When you use a sub-plate, please place an order for the above sub-plate type.
 For the dimension drawing, refer to page 11 of the appendix.

■ Accessories

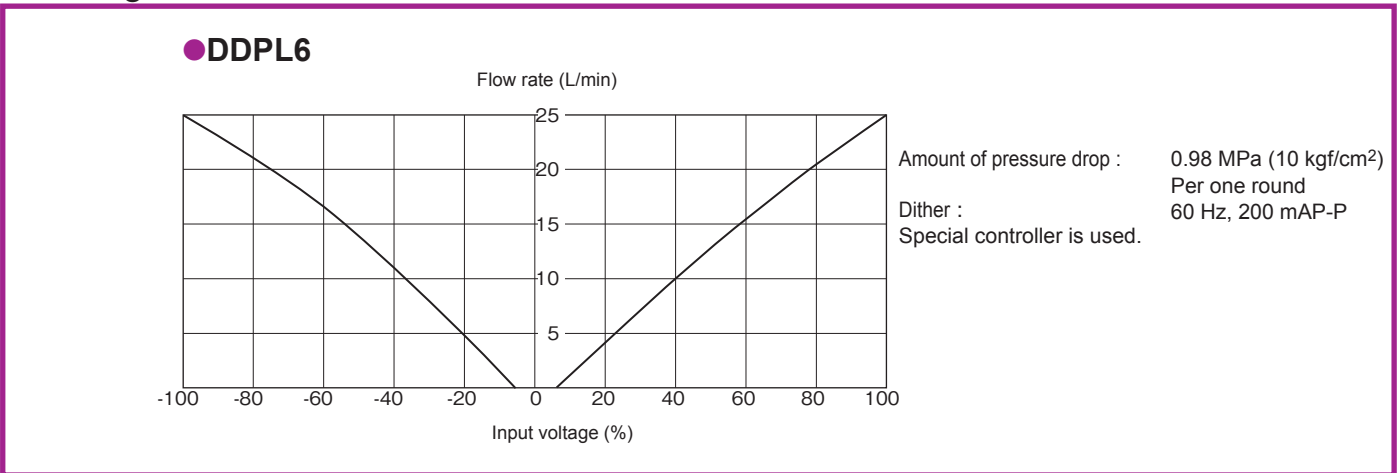
● Mounting bolt

Type	Hexagon socket head cap thread	Quantity	Tightening torque N · m (kgf · cm)
DDPL6	M5×50L	4 pcs.	6.9±1.0 (70±10.5)

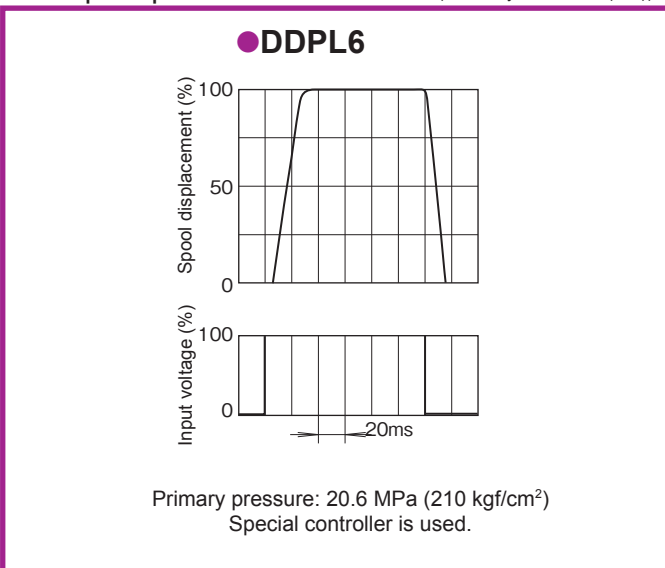
Specifications

Nominal dimension		6
Maximum working pressure MPa (kgf/cm ²)	Port P, A, B	30.9 (315)
	Port T	1.0 (10)
Rated flow rate L/min $\Delta P=0.98$ MPa per 1 round		25/15/5
Maximum differential pressure (Per one round) MPa (kgf/cm ²)		5.9 (60)
Maximum flow rate L/min		30/25/18
Reproducibility %		1 or less
Hysteresis %		1 or less
Step response ms	0→100% input	30
	100→0% input	18
Frequency response Hz ($\pm 2\%$ input)	-3dB	20
	90 degree delay	22
Electrical specifications	Solenoid rated current mA	1,500
	Coil resistance Ω	7.2 at 20°C
	Dither (Recommendable value)	60Hz, 200mAP-P
	Standard amplifier type	CFW-B15-D24
Mass kg	Double solenoid type	3.2
	Single solenoid type	2.3

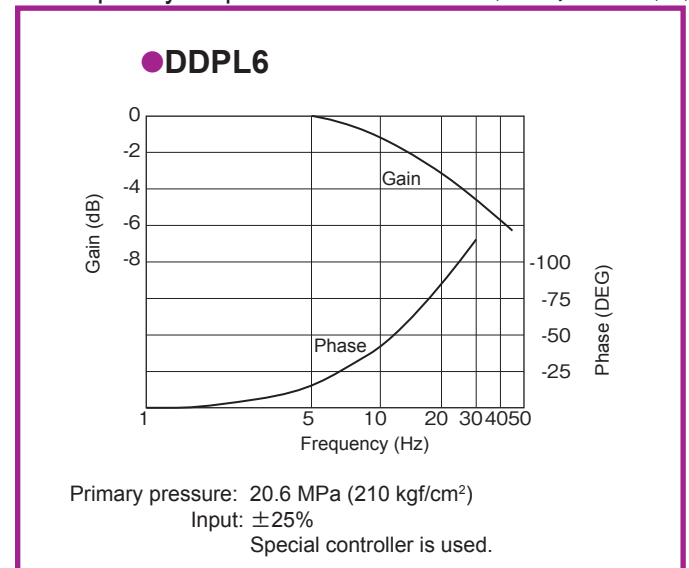
Voltage - Flow rate characteristics (viscosity 25 mm²/s (cSt))



Step response characteristics (viscosity 25 mm²/s (cSt))

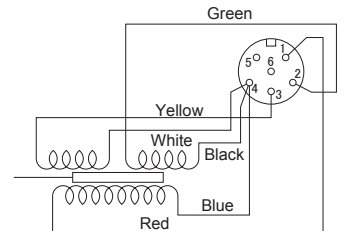
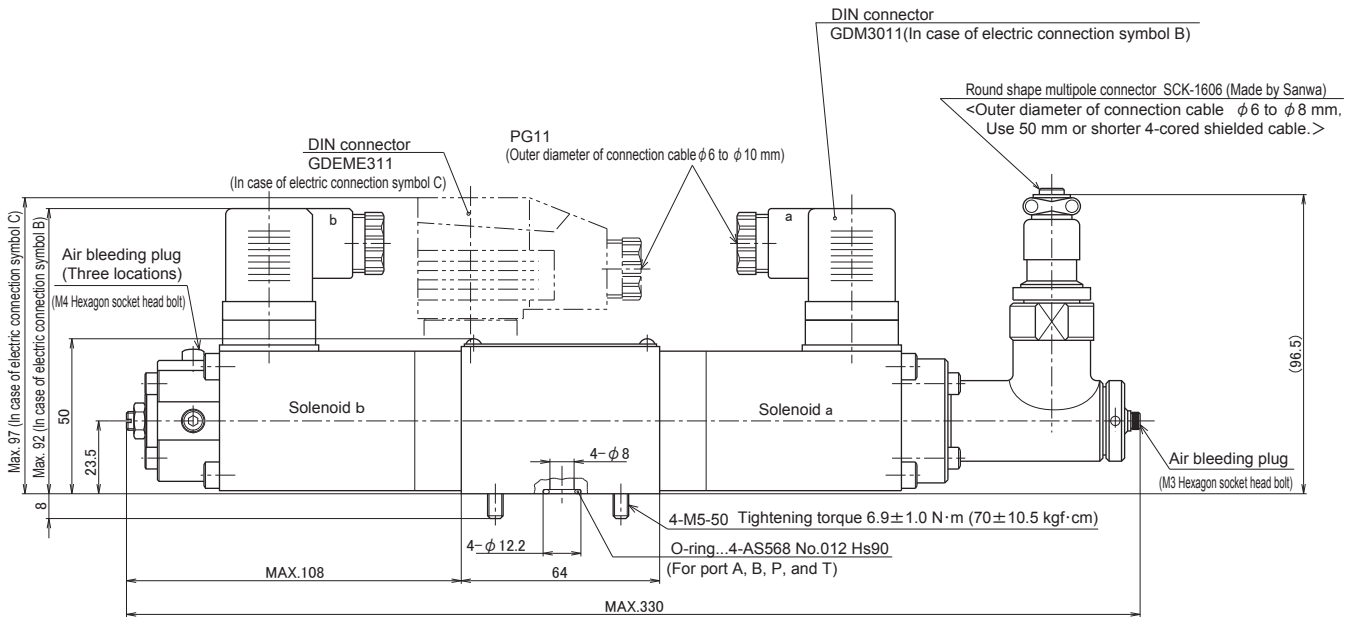
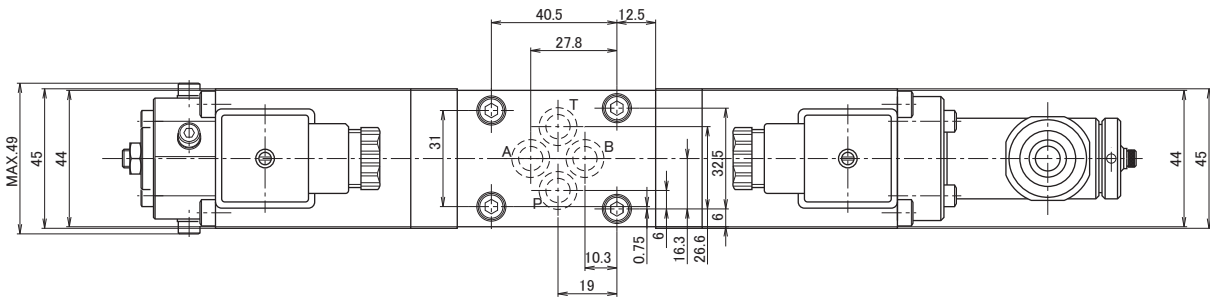


Frequency response characteristics (viscosity 25 mm²/s (cSt))



Dimension drawing

● DDPL6



Connection diagram for differential transformer (LVDT) connector pins

Solenoid proportional control valve - Direct operated type, with LVDT