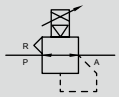
Digital electro pneumatic regulator

EVD-1000 Series

JIS symbol



Specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Descriptions		EVD-1100-*08 □ Analog (*...0/1/2)	EVD-1100-P08 □ Parallel	EVD-1500-*08 □ Analog (*...0/1/2)	EVD-1500-P08 □ Parallel	EVD-1900-*08 □ Analog (*...0/1/2)	EVD-1900-P08 □ Parallel
Working fluid		Clean compressed air (JIS B 8392-1: 2012 (ISO 8573-1: 2010) [1:3:2] or equivalent)					
Max. working pressure		160 kPa (≈23 psi, 1.6 bar)		700 kPa (≈100 psi, 7 bar)		1000 kPa (≈150 psi, 10 bar)	
Min. working pressure		Set pressure +50 kPa (≈7.3 psi)		Set pressure +100 kPa (≈15 psi, 1 bar)			
Proof pressure	Inlet	240 kPa (≈35 psi, 2.4 bar)		1050 kPa (≈150 psi, 10.5 bar)		1500 kPa (≈220 psi, 15 bar)	
	Output side	150 kPa (≈22 psi, 1.5 bar)		750 kPa (≈110 psi, 7.5 bar)		1350 kPa (≈200 psi, 13.5 bar)	
Pressure control range *1		0 (≈0 psi) to 100 kPa (≈15 psi)		0 (≈0 psi) to 500 kPa (≈73 psi)		0 (≈0.0 psi) to 900 kPa (≈130 psi)	
Power supply voltage		24 VDC ± 10% (stabilized power supply with ripple rate 1% or less)					
Current consumption		0.15 A or less (0.6 A or less rush current when the power is turned ON)					
Input signal (input impedance)		0 to 10 VDC(6.7 kΩ) 0 to 5 VDC(10 kΩ) 4 to 20 mADC(250 Ω)	10 bit	0 to 10 VDC(6.7 kΩ) 0 to 5 VDC(10 kΩ) 4 to 20 mADC(250 Ω)	10 bit	0 to 10 VDC(6.7 kΩ) 0 to 5 VDC(10 kΩ) 4 to 20 mADC(250 Ω)	10 bit
Preset input		8 points	None	8 points	None	8 points	None
Output signal *2		Output accuracy: ±6% F.S. or less, analog output: 1 to 5 VDC (connecting load impedance 500 kΩ and over)					
		Switch output: NPN or PNP open collector output, 30 V or less and 50 mA or less, voltage drop 2.4 V or less, PLC/relay compatible					
Error output signal		NPN or PNP open collector output, 30 V or less and 50 mA or less, voltage drop 2.4 V or less, PLC/relay compatible					
Direct memory setting		1 to 100 kPa (Min. setting width 1 kPa/setting resolution 1 kPa)		5 to 500 kPa (Min. setting width 1 kPa/setting resolution 1 kPa)		9 to 900 kPa (Min. setting width 1 kPa/setting resolution 2 kPa)	
Pressure display	Display method	7-segment LED 3 digits, indicator accuracy: ±2% F.S. or less					
	Display range	0 (≈0 psi) to 100 kPa (≈15 psi)		0 (≈0 psi) to 500 kPa (≈73 psi)		0 (≈0 psi) to 900 kPa (≈130 psi)	
	Display resolution	1 kPa (≈0.1 psi, 0.01 bar)		1 kPa (≈0.1 psi, 0.01 bar)		1 kPa (≈0.1 psi, 0.01 bar)	
Hysteresis *3		0.5% F.S. or less					
Linearity *3		± 0.3% F.S. or less					
Resolution *3		0.2% F.S. or less					
Repeatability *3		0.3% F.S. or less					
Temperature characteristics	Zero point fluctuation	0.15% F.S./°C or less					
	Span fluctuation	0.07% F.S./°C or less					
Max. flow rate (ANR) *4		60 ℓ/min		400 ℓ/min			
Step response *5	No load	0.2 sec. or less					
Vibration resistance		98 m/s^2 or less					
Ambient temperature		5 (41°F) to 50 (122°F)°C					
Fluid temperature		5 (41°F) to 50 (122°F)°C					
Port size		Rc1/4					
Mounting orientation		Free					
Weight		250 g					
Protection circuit		Power reverse connection protection, switch output reverse connection protection, switch output load short-circuit protection					

*1: There is 1% F.S. or less residual pressure when the input signal is 0%. (EVD-1100: 1 kPa, EVD-1500: 5 kPa, EVD-1900: 9 kPa)
*2: Select the analog output or switch output.
*3: The condition of the values above is: 24 ± 0.1 VDC power supply voltage, 25 ± 3°C ambient temperature, no load, working pressure of +50 kPa max. control pressure (EVD-1100)/+100 kPa (EVD-1500, 1900), and 10 to 90% control pressure.
In addition, when the secondary side is a closed circuit, pressure fluctuations will occur if the product is used for blowing or for similar applications.
*4: The characteristics where working pressure is maximum and control pressure is maximum are shown.
*5: The value above is obtained at the max. working pressure and when the step amount changes from
50% F.S. → 100% F.S.
50% F.S. → 60% F.S.
50% F.S. → 40% F.S.

Specifications for components for rechargeable battery production

(Catalog No. CC-1226A)

EVD1500/1900 — [Input specifications/port size/output specifications] — [Option] — **3** — **P4□**

EVD3500/3900 — [Input specifications/port size/output specifications] — [Option] — **3** — **P4□**

Contact your nearest CKD sales office or dealer for details.

How to order

EVD-1 [500] - [0] [08] [AN] - [C1B1] - [3]

Ⓐ Pressure control range
Ⓑ Input signal
Ⓒ Port size
Ⓓ Output signal
Ⓔ Option
Ⓕ Power supply voltage

Code	Content
Ⓐ Pressure control range *1	
100	0 to 100 kPa
500	0 to 500 kPa
900	0 to 900 kPa
Ⓑ Input signal	
0	0 to 10 VDC
1	0 to 5 VDC
2	4 to 20 mADC
P	Parallel 10 bit
Ⓒ Port size	
08	Rc1/4
Ⓓ Output signal	
AN	1 to 5 V analog, error (NPN)
AP	1 to 5 V analog, error (PNP)
SN	Switch (NPN), error (NPN)
SP	Switch (PNP), error (PNP)
Ⓔ Option	
Cable option	
Blank	None
C1	Analog 9-conductor, 1 m cable
C3	Analog 9-conductor, 3 m cable
P1	Parallel 15-conductor, 1 m cable
P3	Parallel 15-conductor, 3 m cable
Bracket option attached	
Blank	None
B1	B type bracket, floor mounted
L1	L type bracket, wall mounted
Ⓕ Power supply voltage	
3	24 VDC

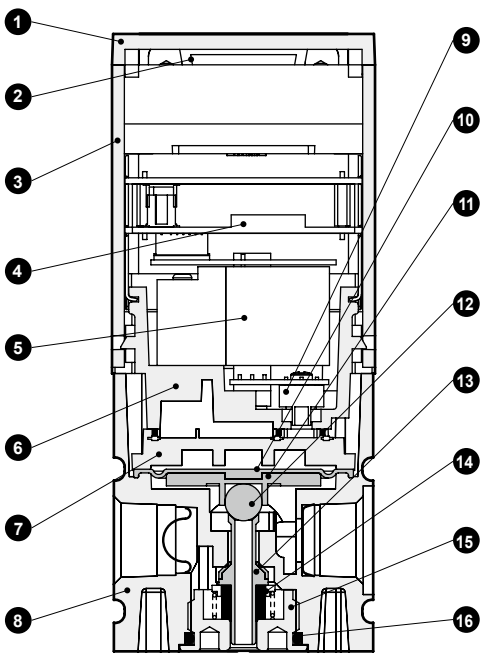
*1: There is a 1% F.S. or less residual pressure when the input signal is 0%.

● Discrete option (cable, bracket) model No.

EVD- [C1]

Ⓔ Option

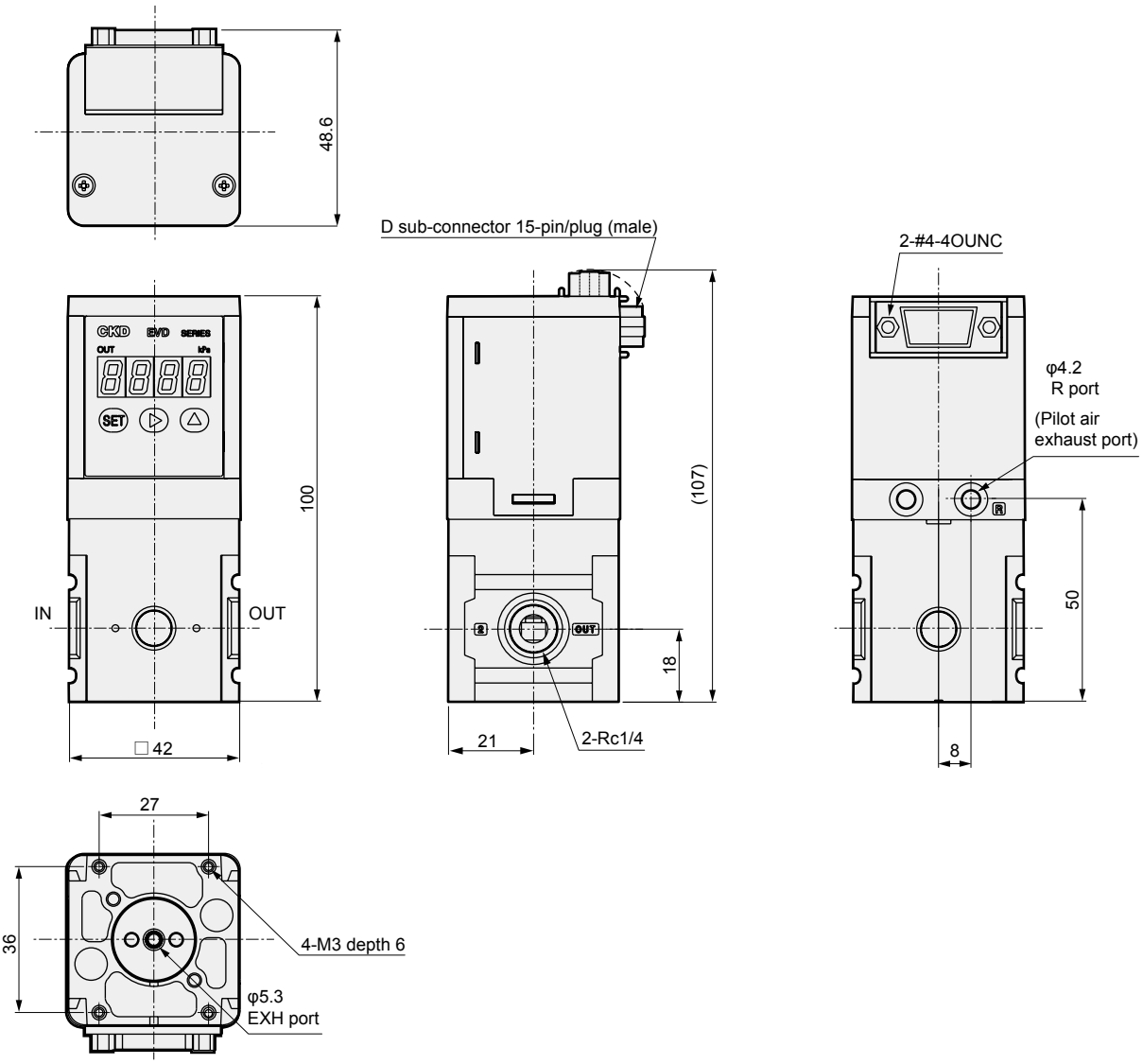
Internal structure and parts list



No.	Part name	Material
1	Lid	PBT resin
2	D sub-connector	-
3	Housing	ABS resin
4	Controller board	-
5	3-way valve	-
6	Valve base	Polyphenylene sulfide resin
7	Pilot chamber	Polyphenylene sulfide resin
8	Body	Aluminum alloy die-casting
9	Pressure sensor	-
10	Diaphragm	Special nitrile rubber
11	Relief seat	Aluminum alloy
12	Steel ball (exhaust valve)	Stainless steel
13	Valve	Special nitrile rubber, stainless steel
14	Bottom rubber	Silicone rubber
15	Bottom plug	Copper alloy, electroless nickeling
16	O-ring	Fluoro rubber

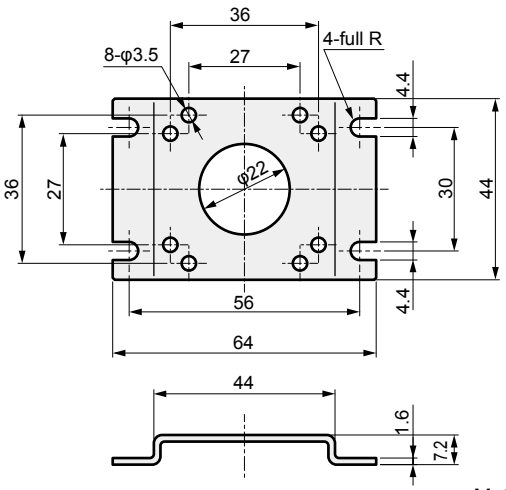
Cannot be disassembled

Dimensions



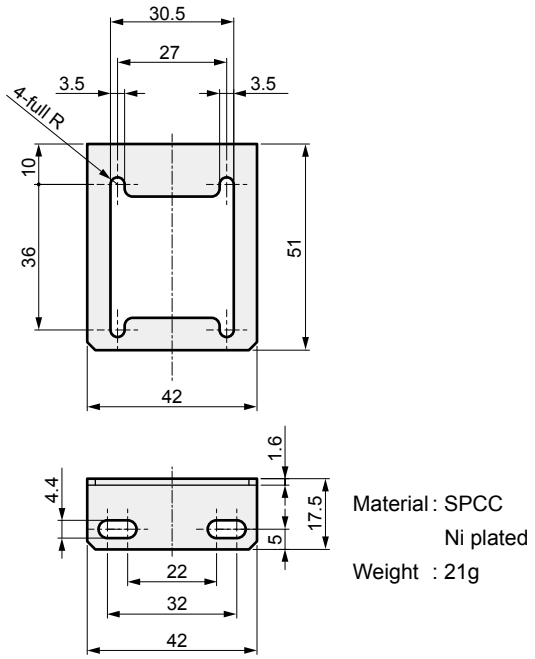
Optional dimensions

● B type bracket (-B1): Floor mounted



Material : SPCC
Ni plated
Weight : 32g

● L type bracket (-L1): Wall mounted

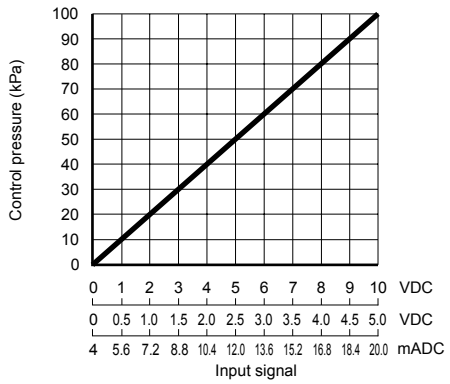


Material : SPCC
Ni plated
Weight : 21g

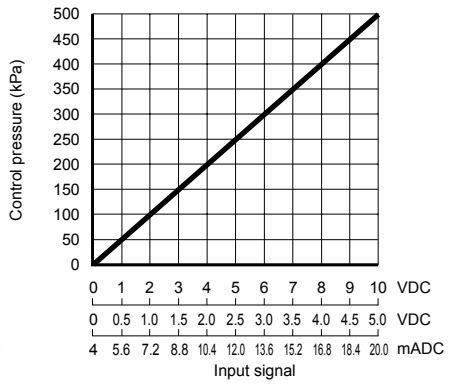
* Refer to page 521 for details of cable option dimensions.

I/O characteristics

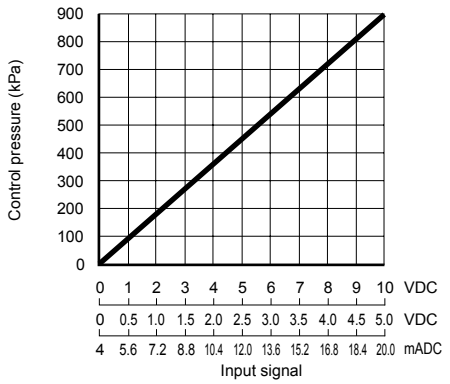
● EVD-1100



● EVD-1500

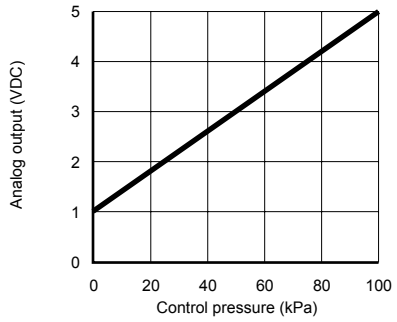


● EVD-1900

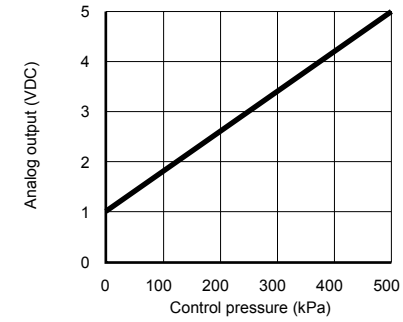


Analog output (analog output only: model No. AN/AP)

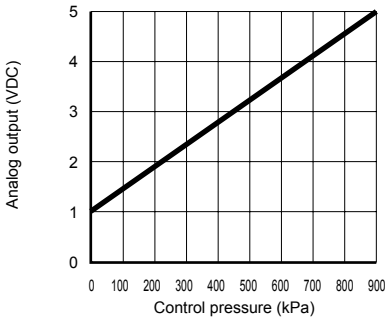
● EVD-1100



● EVD-1500

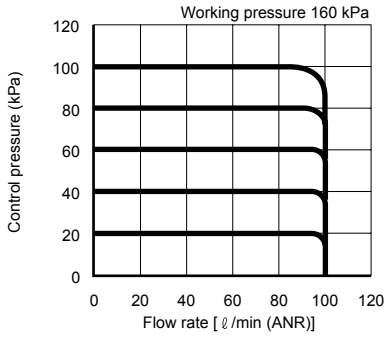


● EVD-1900

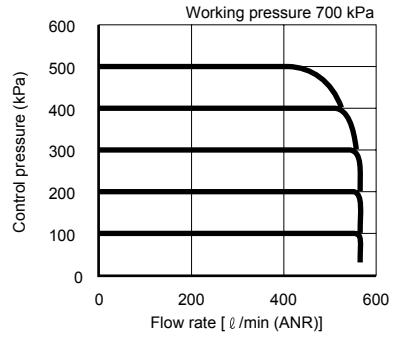


Flow characteristics

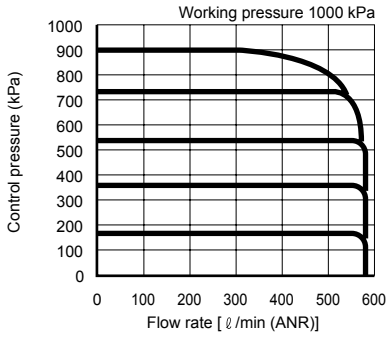
● EVD-1100



● EVD-1500

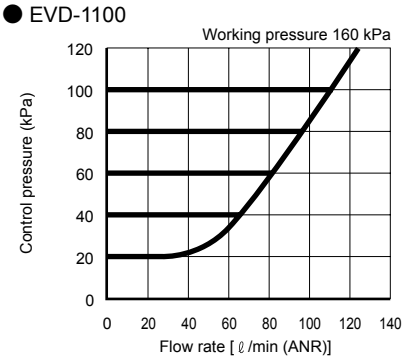


● EVD-1900

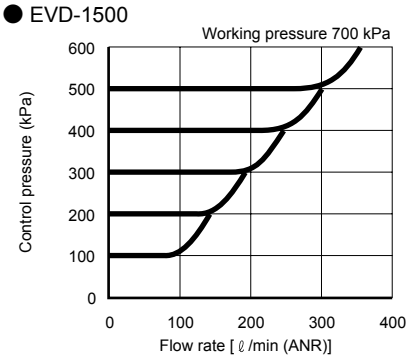


Relief characteristics

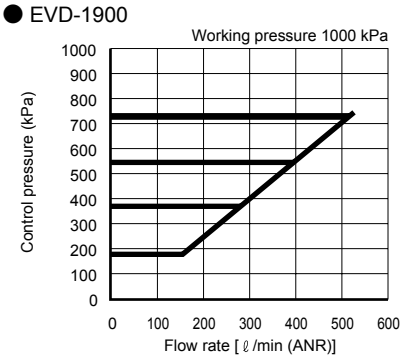
● EVD-1100



● EVD-1500

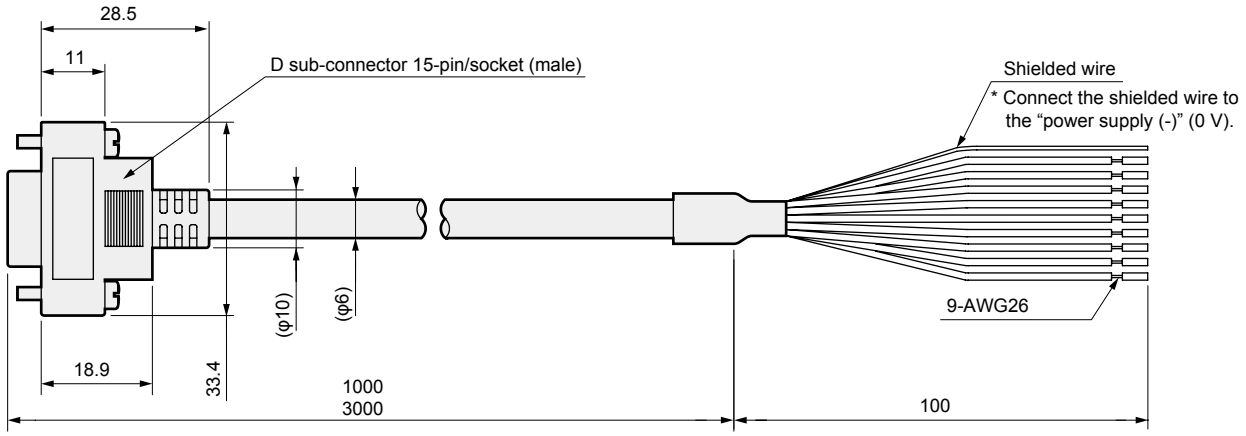


● EVD-1900



Cable optional dimensions

● EVD-C1,EVD-C3

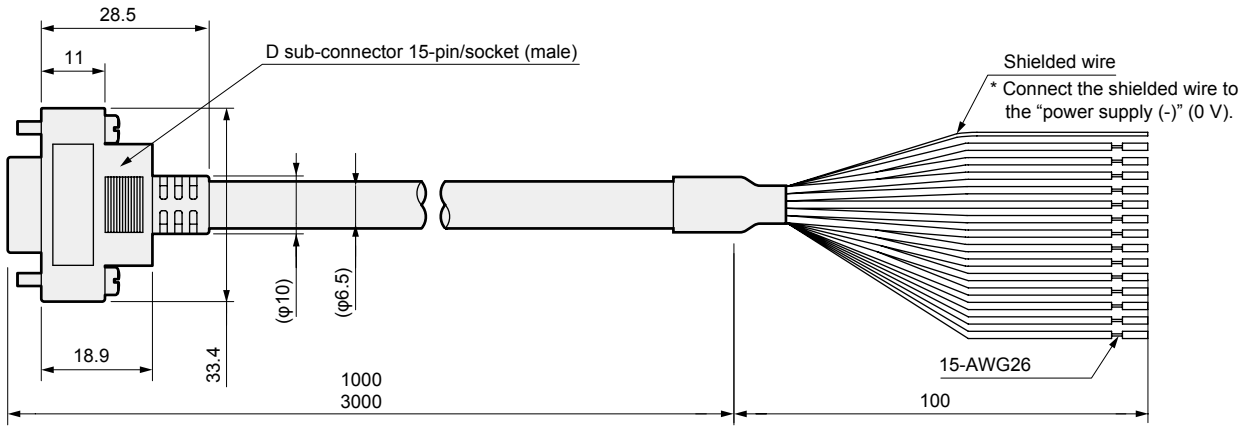


Wire material	Tinned annealed copper wire
Conductor O.D.	Approx. 0.48
Outer diameter of insulator	0.88

D sub-socket pin No.	1	2	3	4	5	6	7	8	9	10	11			12	13		14	15	Weight g
Insulator color	Brown	Orange	Yellow	-	Red	-	-	-	-	Gray	White			-	Green		Blue	Black	C1:67 C3:166
Name	Preset input signal			Vacant	Power supply +	Vacant	Vacant	Vacant	Vacant	Common	Input signal			Vacant	Analog output	Switch output	Error output	Power supply - (0V)	
Input	Bit 1	Bit 2	Bit 3		+24 VDC						0 to 10 VDC	0 to 5 VDC	4 to 20 mADC	Vacant	Output 1 to 5 VDC	NPN or PNP output	NPN or PNP output		

Note: The No. 10 pin common is the common for the preset input (pin No. 1 to 3).

● EVD-P1,EVD-P3



Wire material	Tinned annealed copper wire
Conductor O.D.	Approx. 0.48
Outer diameter of insulator	0.88

D sub-socket pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13		14	15	Weight g
Insulator color	Brown	Orange	Yellow	Purple	Red	Light blue	Pink	White (with black line)	Red (with black line)	Gray	White	Green (with black line)	Green		Blue	Black	P1:82 P3:205
Name	Parallel input signal				Power supply +	Parallel input signal				Common	Parallel input signal		Analog output	Switch output	Error output	Power supply - (0 V)	
Input	Bit 1	Bit 2	Bit 3	Bit 4	+24 VDC	Bit 5	Bit 6	Bit 7	Bit 8		Bit 9	Bit 10	Output 1 to 5 VDC	NPN or PNP output	NPN or PNP output		

Note: The No. 10 pin common is the common for the parallel input signal (pin No. 1 to 4, 6 to 9, 11, 12).