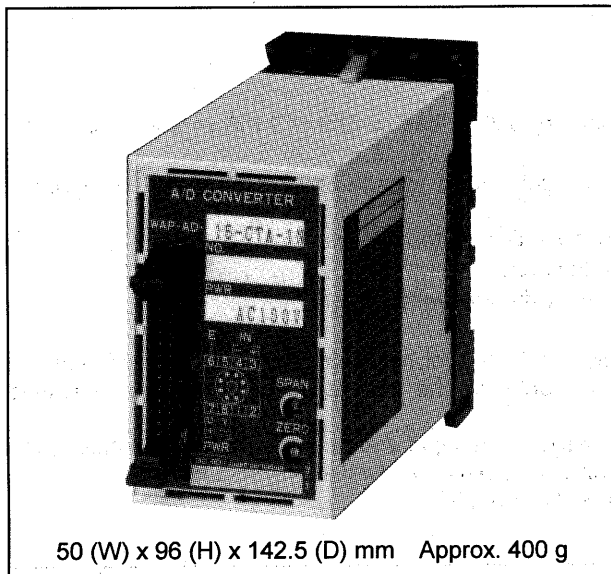




50 (W) x 96 (H) x 142.5 (D) mm Approx. 400 g

This dual-slope method A/D converter converts analog signals into parallel digital signals. Since it has a plug-in design and operates on AC power only, it is most suitable for applications where sensor signals and instrumentation signals need to be output to sequencers and computers.

Feature

- Can be mounted on, or detached from, DIN rails using a one-touch process.
- Can deliver a value converted into a physical amount by a scaling function.
- Offers many types of output codes and resolutions, which can be combined freely.
- Input, output and power supply are isolated, with a dielectric strength of 1,500 VAC.
- Dual-slope method A/D conversion provides noise immunity and stable output.

The WADP Series has been unified to WVP-AD Model.

Model WVP - AD - ☐ - ☐ ☐ ☐ - ☐ ☐

Input Signal			Input Resistance	
11	DC 0–100 mV	1 MΩ		
12	DC 0–1 V	1 MΩ		
13	DC 0–5 V	1 MΩ		
14	DC 1–5 V	1 MΩ		
15	DC 0–10 V	1 MΩ		
16	DC 0–50 mV	1 MΩ		
17	DC 0–60 mV	1 MΩ		
22	DC ± 100 mV	1 MΩ		
23	DC ± 1 V	1 MΩ		
24	DC ± 5 V	1 MΩ		
25	DC ± 10 V	1 MΩ		
26	DC ± 2.5 V	1 MΩ		
31	DC 0–100 μA	1 KΩ		
32	DC 0–1 mA	1 KΩ		
33	DC 0–10 mA	100 Ω		
34	DC 0–16 mA	62.5 Ω		
35	DC 0–20 mA	50 Ω		
36	DC 4–20 mA	62.5 Ω		
99	Other than the above (Please consult with us.): Over 10 mV up to 300 V Over 10 μA up to 20 mA			

Output Signal Level	
L	TTL level (5 V-CMOS)
T	Open collector

Output Code	
A	Poralized BCD (positive logic)
B	Poralized BCD (negative logic)
C	Poralized binary (positive logic)
D	Poralized binary (negative logic)
E	Offset binary
F	Complementary offset binary
G	Complement on 2
H	Complement on complementary 2

Additional Function	
N	Without scaling function
A	With scaling function Please always specify the desired scaling value.

Power Supply	
1	AC 100 V ± 10%
2	AC 200 V ± 10%
3	DC 24 V ± 10%
4	AC 110 V ± 10%
5	AC 220 V ± 10%

Number of output digits. In case of BCD		Number of Output Bits. In case of Binary or complement on 2	
A	-----	8 bits	
B	3 digits	10 bits	
C	3 1/2 digits	11 bits	
D	3 3/4 digits	12 bits	
E	4 digits	13 bits	
F	-----	14 bits	

	Type That Outputs TTL Level (5 V-CMOS)-In Case of Positive Logic	Open-Collector Output In case of Negative Logic
Output drive capacity	Source current 5mA, max. Sink current 5mA, max.	When output is ON, maximum load current is 100 mA, and output saturation voltage 1.1 V or less. When output is OFF, it is 50 VDC, max.
Overflow (OVF) output *1	Outputs "H" signal	Outputs "ON" signal
Polarity (POL) output	"H" on a positive input, "L" on a negative input	"ON" on a positive input, "OFF" on a negative input
Data validity (DAV) output	"H" when data is valid, "L" while data is overwritten	"ON" when data is valid, "OFF" while data is overwritten

*1 Type that output offset, binary and complements on 2 deliver no output.

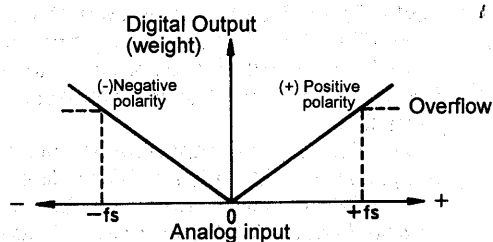
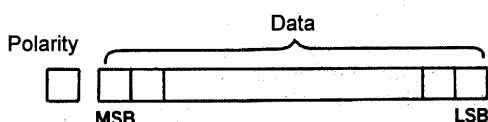
	BCD Signal Output Type				Type That Outputs Binary Signals or Complement-on-2 Signals					
	±3 digits	±3 1/2 digits	±3 3/4 digits	±4 digits	8 bits	10 bits	11 bits	12 bits	13 bits	14 bits
Number of digits and bits										
Resolution	1/999	1/1999	1/3999	1/9999	1/255	1/1023	1/2047	1/4095	1/8191	1/16383
Linearity (±%·fs)	0.1	0.05	0.025	0.01	0.4	0.1	0.05	0.025	0.013	0.006
Accuracy (±%·fs)	0.3	0.25	0.2	0.08	0.4	0.3	0.25	0.2	0.1	0.05
Conversion time ms (max.)	60	60	120	300	31	62	62	123	246	492

Specifications

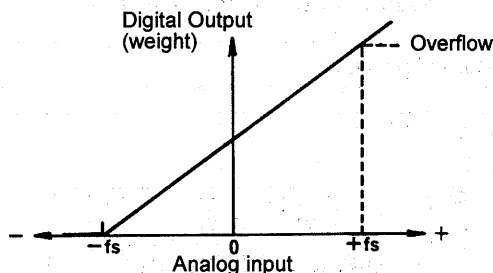
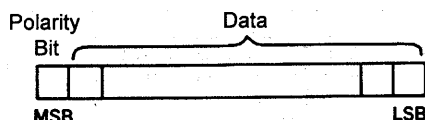
Input system:	Floating
Input format:	Singl-end
A/D conversion method:	Dual slope type
Input-output isolation method:	Photocoupler method
Number of input points:	1
Noise suppression ratio:	40 dB (NMRR)
Hold input:	Output data held by TTL level "L" signal or open-collector "ON" signal
Zero & span adjustable ranges:	$\pm 5\% \cdot f_s$ each (without scaling function)
Operating temperature and humidity range:	0 to 50°C, 85% RH or less (without condensation)
Insulation resistance:	100 M Ω or more with a 500 VDC megger between the input/output terminal and power supply terminal, and between the input and output terminals
Dielectric strength:	1,500 VAC for 1 minute between the input/output terminal and power supply terminal, and between the input and output terminals
Power consumption:	Approx. 4 VA (AC), approx. 160 mA (DC)
Weight:	Approx. 400 g

Relation between Input and Output Signals

Polarized BCD Signal and Polarized Binary Signal



Offset Binary Signal and Complement-on-2 Signal



Sample Scaling (with 4–20 mA, DC input signals)

Input Signal Value	Polarized BCD (4-Digit) Output		Polarized Binary (12-Bit) Output		Polarized Binary (14-Bit) Output	
	Ordinary Output	With scaling to 0–5000	Ordinary Output	With scaling to 0–3000	Ordinary Output	With scaling to 0–15000
0 mA	-2500	-1250	-1024	-750	-4096	-3750
4 mA	0	0	0	0	0	0
8 mA	+2500	+1250	+1024	+750	+4096	+3750
12 mA	+5000	+2500	+2048	+1500	+8192	+7500
16 mA	+7500	+3750	+3072	+2250	+12288	+11250
20 mA	+9999	+5000	+4095	+3000	+16384	+15000
24 mA	Outputs OVF	+6250	Outputs OVF	+3750	Outputs OVF	Outputs OVF

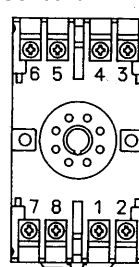
All the figure in the table are shown in decimals.

Terminal and Pin Assignment

Connector: MIL system 26-pin flat cable connector (OMRON).

Socket: 8PFA1 (OMRON)

BCD Output Type				Binary Output Type & Complement-on-2 Output Type			
Pin No.	Function	Pin No.	Function	Pin No.	Function	Pin No.	Function
1	1 $\times 10^0$	17	COM	1	B ₀	17	COM
2	2	18	COM	2	B ₁	18	COM
3	4	19	OVF	3	B ₂	19	OVF
4	8	20	POL	4	B ₃	20	POL
5	1 $\times 10^1$	21	DAV	5	B ₄	21	DAV
6	2	22	HOLD	6	B ₅	22	HOLD
7	4	23	COM	7	B ₆	23	COM
8	8	24	COM	8	B ₇	24	COM
9	1 $\times 10^2$	25	NC	9	B ₈	25	NC
10	2	26	NC	10	B ₉	26	NC
11	4			11	B ₁₀		
12	8			12	B ₁₁		
13	1 $\times 10^3$			13	B ₁₂		
14	2			14	B ₁₃		
15	4			15	NC		
16	8			16	NC		

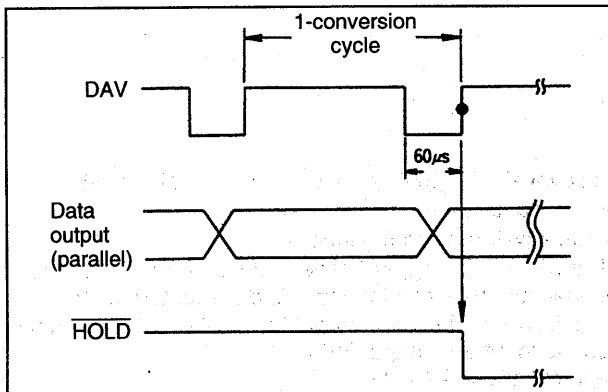


No.	Symbol	Description
1		N.C.
2		N.C.
3		
4	Input	+
		-
5		N.C.
6	EARTH	E
		Ground
7	POWER	U(+)
		V(-)
8		Power Supply

Notes:

- Pin Nos. in excess of the number of data outputs of the specified model will be empty pins (N.C.).
- Pins will be empty pins (N.C.) in case of offset binary output or complement-on-2 output.

Timing chart



The DAV output is a signal that indicates the period during which valid data is being delivered in each A/D conversion cycle.

After the rise of the DAV signal, the data output is held in stable state until the next data is overwritten.

If the external unit takes in data for a longer time than one conversion cycle of this converter, or if data needs to be taken in at an arbitrary timing, simply detect the rise signal of DAV and hold the signal. Then hold the data and take it in. After confirming that this process has been completed, release the hold function.

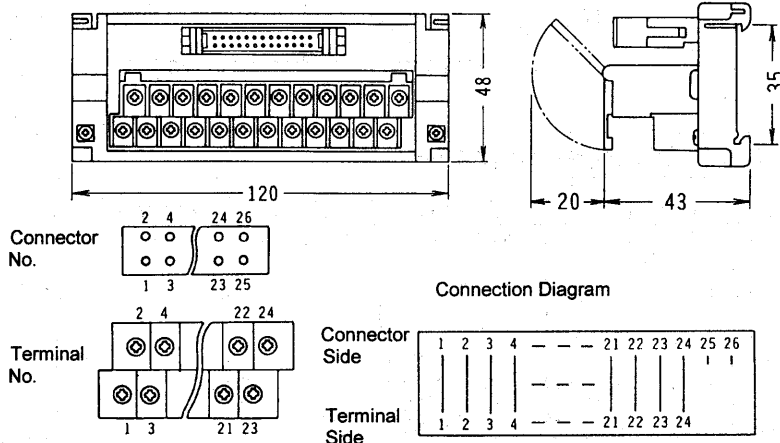
Accessories

- Base socket: WVP-8PFA1 (8-pin): Supplied with WVP-AD
- Flat cable (1 m): WVP-FCA-10 (with a connector on one end): Supplied with WVP-AD.
 WVP-FCB-10 (with connectors on both ends):
 Supplied with WVP-AD and connector terminal block (WVP-FT□-series models) ordered at the same time.
 WVP-FCB-10 (with connectors on both ends):
 Supplied with WVP-AD and BCD indicator (WDU) ordered at the same time.
 WVP-FCB-10 (with connectors on both ends and an intermediate connector):
 Supplied with a WVP-AD, BCD indicator (WDU) and connector terminal block (WVP-FT□-series models) ordered at the same time.

Accessories (Option)

Connector Terminal Block

Model: WVP-FTR (mounted on rails)
 WVP-FTB (mounted on panels)



Accessory: MIL system 26-pin connectorized flat cable, 1 m WVP-FCB-10