



Features

- ★ Standard DIN size (48mm x 96mm)
- ★ 5 digit display (±99999)
- ★ High-speed sampling rate (4000 times/sec)
- ★ Communication and setting by USB connection (Option)
- ★ BCD, RS-232C, RS-485 output (Option)
- ★ Sensor power supply 24Vdc±10% 40mA

Ordering code

AMH-763- **V** **A** - **1** **1** - **1**

Code	Input
VA	DC Voltage & Current (±1V, ±10V, ±5V, 4 to 20mA)

Code	Power supply
1	100 to 240Vac ±10%

Code	Output
1	Display only
2	BCD output (Open collector)
3	BCD output (TTL)
4	RS-232C output
5	RS-485 output
6	USB output
7	Analog output

Code	Comparative output
1	Relay output
2	Photocoupler output

Input Specifications

◆ DC voltage, DC Current

Range	Measurement range	Resolution	Impedance	Max. allowable input	Accuracy
0~1	±1V	100μV	1M Ω or more	±250V	±0.1% of FS
0~10	±10V	1mV			
1~5	±5V	100μV			
4~20	4 to 20mA	1μA	Approx. 50Ω	±70mA	

Note : Measurement range is selectable by input range settings

Number of input	2 channel input (Between Ach and Bch is non-isolated)
Input calculation	K-A, A+B, A-B, K-(A+B) ({ A-B)/ B }×1000 B/A×1000, (1-B/A)×1000 (B/A-1)×1000 *K the available setting value

Specifications

◆ Common specifications

Display	Main display: Red or green 7 segment LED (height 14.2mm) Sub display : Green 7 segment LED (height 8mm)
Polarity	'-' is displayed automatically at negative polarity
Display range	-99999 to 99999 (5 digits)
Scaling	Offset ±99999, Full scale ± 99999
Decimal point	Able to set to any digit
Zero display	Leading zero suppression
Operating temperature	0 to 50°C
Operating relative humidity	35 to 85% (non-condensing)
Power supply	100 to 240Vac ±10% (50/60Hz)
Power consumption	20VA max.
Dimensions	96mm(W) x 48mm(H) x 144.5mm(D) DIN size (147.0(D)mm when BCD output)
Weight	Approx. 400g
Dielectric strength	1500VAC per 1 min. : Power supply terminal - input terminal / output terminal / external control terminal 1500VAC per 1 min. : Earth terminal - power supply terminal / input terminal
Insulation resistance	500Vdc, 100MΩ or more on the above terminals
Sampling rate	Approx. 0.25msec (4000 times per second) to approx. 1sec (1 time per second)
Moving average	None / 2 / 4 / 8 / 16 / 32 / 64 selectable
Display update cycle	Max. 50msec (20 times per second) to Min. 1sec (1 time per second)
Sensor excitation (Sensor power supply)	24Vdc±10% 40mA (Ripple ±100mVp-p or less)
Standard accessory	2 unit sticker, terminal cover, connector for BCD output when BCD output option
Optional accessory	Front panel cover (WP-3)

◆ External control

Start / Hold	Hold the display at any time (Ach, Bch independent)
Digital zero	Displays 0 at any time (Ach, Bch independent)
Peak hold	Holds Max. value (PH) / Min. value (VH) / Max. value-Min. value (PVH) (Ach, Bch independent)
Pattern select	Available for switching 8 pattern analog output scaling value, scaling setup value, hysteresis, comparator setup value
Comparator output reset	Stops comparator operation at any time
Clear	Clears Max. value / Min. value

◆ Comparative output specifications

Comparison result	5 setpoints (HH/HI/GO/LO/LL)					
Comparator objective	1ch : Comparator output to present value 2ch : Comparator output to calculation value					
Output method	Relay output or photocoupler output					
Output rating	Relay output : Ouput rating AC250V 1A (resistance load), DC30V 1A (resistance load) The electrical life 50 thousand times (The rated load) Photocoupler output: Output rating DC30V 20mA Output saturation 1.2V or less (When 20mA)					
Setting range	-99999 to 99999					
Hysteresis	Able to set 1 to 50000 digit for each setpoints					
Operation speed	Relay : Max. 10msec, Photocoupler : Max. 100μsec					
Comparative condition	Result	Comoarator ouput				
		HH	HI	GO	LO	LL
Display value > HH	HH	ON	OFF	OFF	OFF	OFF
Display value > H	HI	OFF	ON	OFF	OFF	OFF
HH, HI ≥ Display value ≥ LL, LO	GO	OFF	OFF	ON	OFF	OFF
LO > Display value	LO	OFF	OFF	OFF	ON	OFF
LL > Display value	LL	OFF	OFF	OFF	OFF	ON

◆ Analog output specifications

Analog output	Load resistance	Resolution	Accuracy	Ripple
0 to 10V	10kΩ or more	0.2mV	±0.5% of FS	±50mVp-p
1 to 5V				
4 to 20mA	500Ω or less	0.4μA		±20mVp-p

◆ BCD output specifications

Output format	BCD (Binary-coded decimal) / Binary number
Output method	TTL or NPN open collector
TTL specifications	Positive logic TTL level Fan-out 2 (CMOS compatible)
NPN Open collector specifications	DC30V 10mA (MAX) Output saturation voltage: No more than 1.2V
ENABLE input specifications	When Enable and COM short, each output will be "OFF". (Open collector: transistor OFF, TTL: High impedance) ON electric voltage: 0 to 0.8V OFF electric voltage: 3 to 5V Input current: No more than -0.5mA

◆ RS-232C, RS-485 communication

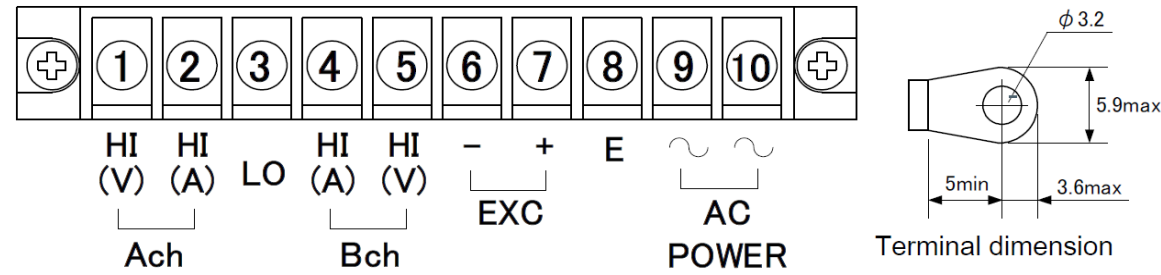
	RS-232C	RS-485
Synchronization scheme	Start-stop synchronization method	
Communication method	Full duplex	2-wire half-duplex
Transmission speed	38400 / 19200 / 9600 bps	
Start bit	1bit	
Data length	7bit / 8bit	
Parity	Even parity/ odd parity/ none	
Error detection	None	BCC
Stop bit	1bit / 2bit	
Character code	ASCII code	
Transmission control process	Ignored process	
Signal name	TXD, RXD, RTS, CTS, SG	+non reversal, -reversal
Max. No. of meter connected	1	31
Line Length	15m	Max. 500m (in total)
Delimiter	CR / LF / CR+LF	

◆ USB communication

USB interface specification	Rev1.1/2.0 full speed transfer B connector
Supported OS	Windows XP SP2, Windows Vista (32bit)
Synchronization scheme	Start-stop synchronization method
Transmission speed	9600 / 19200 / 38400bps
Data bit length	7bit / 8bit
Stop bit length	1bit / 2bit
Parity	Even parity/ odd parity/ none

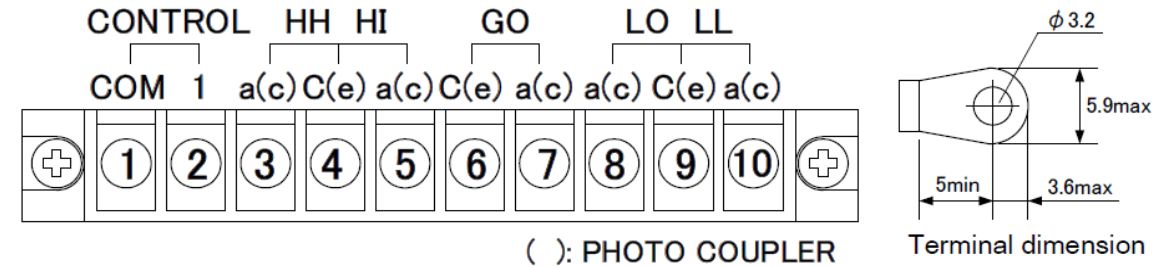
Terminal connections

◆ Lower terminals



No.	Name	Description
1	Ach HI (V)	Ach voltage input terminal (+)
2	Ach HI (A)	Ach current input terminal (+)
3	LO	Ach / Bch common input terminal (-)
4	Bch HI (A)	Bch current input terminal (+)
5	Bch HI (V)	Bch voltage input terminal (+)
6	EXC (-)	Sensor power supply (-)
7	EXC (+)	Sensor power supply (+)
8	E	Ground terminal
9	POWER	power supply terminal
10	POWER	(Nonpolarity)

◆ Upper terminals



■ Relay output Comparative output code 1

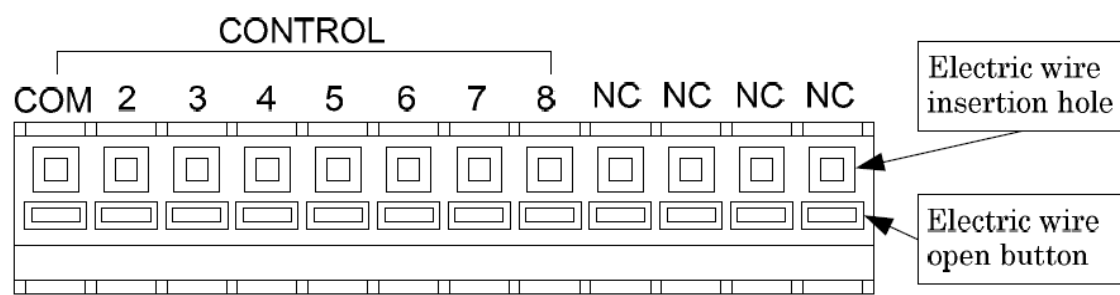
No.	Name	Description
1	COM	Ach voltage input terminal (+)
2	CONTROL 1	Ach current input terminal (+)
3	HH-a	Ach / Bch common input terminal (-)
4	HH/HI-c	Bch current input terminal (+)
5	HI-a	Bch voltage input terminal (+)
6	GO-c	Sensor power supply (-)
7	GO-a	Sensor power supply (+)
8	LO-a	Ground terminal
9	LO/LL-c	power supply terminal
10	LL-a	(Nonpolarity)

■ Photocoupler output Comparative output code 2

No.	Name	Description
1	COM	Ach voltage input terminal (+)
2	CONTROL 1	Ach current input terminal (+)
3	HH-c	Ach / Bch common input terminal (-)
4	HH/HI-e	Bch current input terminal (+)
5	HI-c	Bch voltage input terminal (+)
6	GO-e	Sensor power supply (-)
7	GO-c	Sensor power supply (+)
8	LO-c	Ground terminal
9	LO/LL-e	power supply terminal
10	LL-c	(Nonpolarity)

◆Intermediate terminals

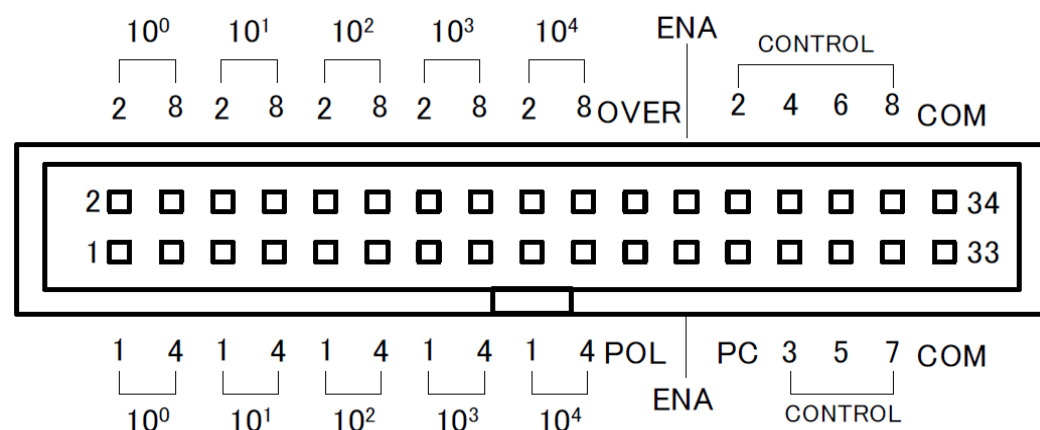
■Display only Output code **1**



*Conforming lead: Single wire $\phi 0.4\text{mm}$ (AWG26) to $\phi 1.0\text{mm}$ (AWG18)
Stranded wire 0.3mm^2 (AWG22) to 0.75mm^2 (AWG20)

Name	Description
CONTROL COM	Control input common terminal
CONTROL 2	Control input No.2 terminal
CONTROL 3	Control input No.3 terminal
CONTROL 4	Control input No.4 terminal
CONTROL 5	Control input No.5 terminal
CONTROL 6	Control input No.6 terminal
CONTROL 7	Control input No.7 terminal
CONTROL 8	Control input No.8 terminal
NC	No connection
NC	No connection
NC	No connection
NC	No connection

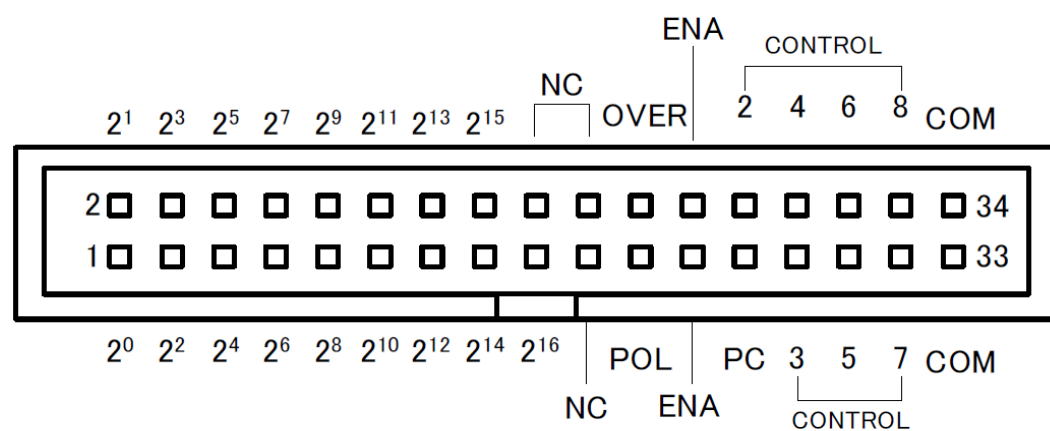
■BCD output Output code **2 3**



*Conforming lead: Single wire $\phi 0.4\text{mm}$ (AWG26) to $\phi 1.0\text{mm}$ (AWG18)
Stranded wire 0.3mm^2 (AWG22) to 0.75mm^2 (AWG20)

No.	Name	Description	No.	Name	Description
1	$10^0 1$	Data output	18	$10^4 2$	Data output
2	$10^0 2$		19	$10^4 4$	
3	$10^0 4$		20	$10^4 8$	
4	$10^0 8$		21	POL	Polarity output
5	$10^1 1$		22	OVER	Over output
6	$10^1 2$		23	ENA	Output enable input
7	$10^1 4$		24		
8	$10^1 8$		25	PC	Printing command signal
9	$10^2 1$		26	CONTOL 2	Control input No.2 terminal
10	$10^2 2$		27	CONTOL 3	Control input No.3 terminal
11	$10^2 4$		28	CONTOL 4	Control input No.4 terminal
12	$10^2 8$		29	CONTOL 5	Control input No.5 terminal
13	$10^3 1$		30	CONTOL 6	Control input No.6 terminal
14	$10^3 2$		31	CONTOL 7	Control input No.7 terminal
15	$10^3 4$		32	CONTOL 8	Control input No.8 terminal
16	$10^3 8$		33	COM	Common terminal
17	$10^4 1$		34		

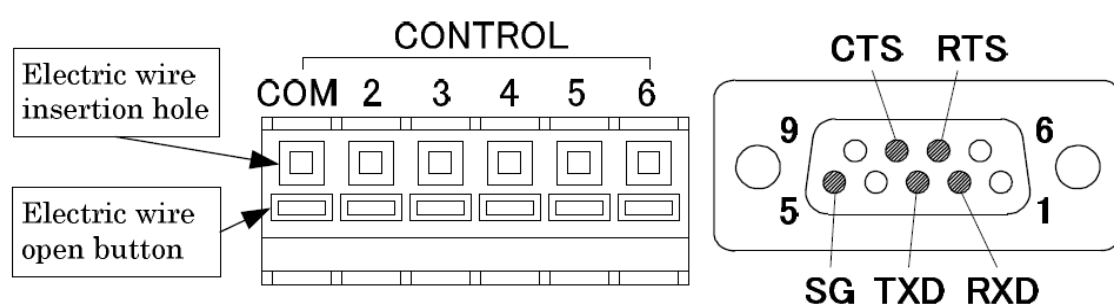
■Binary type Output code **2 3**



*Conforming lead: Single wire $\phi 0.4\text{mm}$ (AWG26) to $\phi 1.0\text{mm}$ (AWG18)
Stranded wire 0.3mm^2 (AWG22) to 0.75mm^2 (AWG20)

No.	Name	Description	No.	Name	Description
1	2^0	Data output	18	NC	No connection
2	2^1		19		
3	2^2		20		
4	2^3		21	POL	Polarity output
5	2^4		22	OVER	Over output
6	2^5		23	ENA	Output enable input
7	2^6		24		
8	2^7		25	PC	Printing command signal
9	2^8		26	CONTOL 2	Control input No.2 terminal
10	2^9		27	CONTOL 3	Control input No.3 terminal
11	2^{10}		28	CONTOL 4	Control input No.4 terminal
12	2^{11}		29	CONTOL 5	Control input No.5 terminal
13	2^{12}		30	CONTOL 6	Control input No.6 terminal
14	2^{13}		31	CONTOL 7	Control input No.7 terminal
15	2^{14}		32	CONTOL 8	Control input No.8 terminal
16	2^{15}		33	COM	Common terminal
17	2^{16}		34		

■RS-232C output Data output code **4**



*Conforming lead: Single wire $\phi 0.4\text{mm}$ (AWG26) to $\phi 1.0\text{mm}$ (AWG18)
Stranded wire 0.3mm^2 (AWG22) to 0.75mm^2 (AWG20)
Cable: D-SUB 9 pin (female) cross cable (maximum 15m)

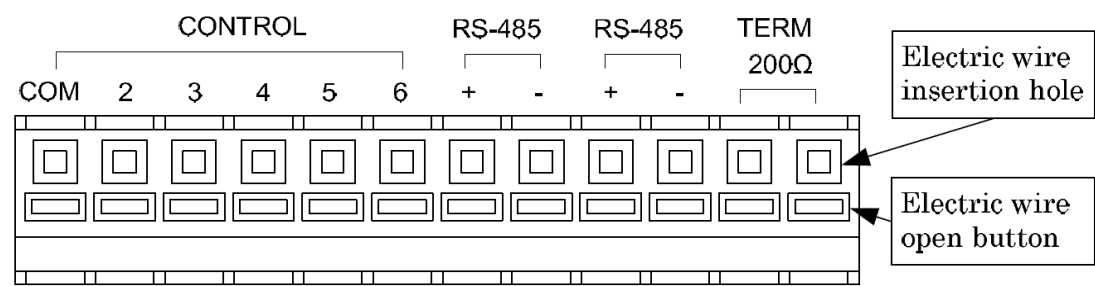
Terminal connection side

No.	Name	Description
1	CONTROL COM	Control input common terminal
2	CONTROL 2	Control input No.2 terminal
3	CONTROL 3	Control input No.3 terminal
4	CONTROL 4	Control input No.4 terminal
5	CONTROL 5	Control input No.5 terminal
6	CONTROL 6	Control input No.6 terminal

Connector connection side

No.	Name	Description
1	NC	No connection
2	RXD	Received exchange data
3	TXD	Transmit exchange data
4	NC	No connection
5	SG	Signal grand
6	NC	No connection
7	RTS	Request to send
8	CTS	Clear to send
9	NC	No connection

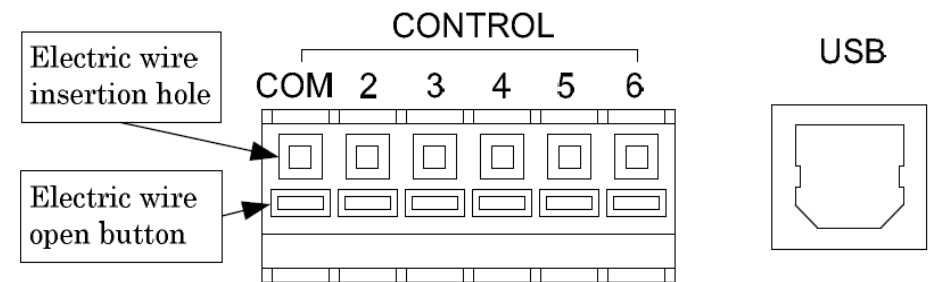
■RS-485 output Output code **5**



*Conforming lead: Single wire φ0.4mm (AWG26) to φ1.0mm (AWG18)
Stranded wire 0.3mm²(AWG22) to 0.75mm²(AWG20)

No.	Name	Description
1	CONTROL COM	Control input common terminal
2	CONTROL 2	Control input No.2 terminal
3	CONTROL 3	Control input No.3 terminal
4	CONTROL 4	Control input No.4 terminal
5	CONTROL 5	Control input No.5 terminal
6	CONTROL 6	Control input No.6 terminal
7	RS-485 (+)	RS-485 non-inversion input & output
8	RS-485 (-)	RS-485 inversion input & output
9	RS-485 (+)	RS-485 non-inversion input & output
10	RS-485 (-)	RS-485 inversion input & output
11	TERM 200Ω	Termination resistor
12		

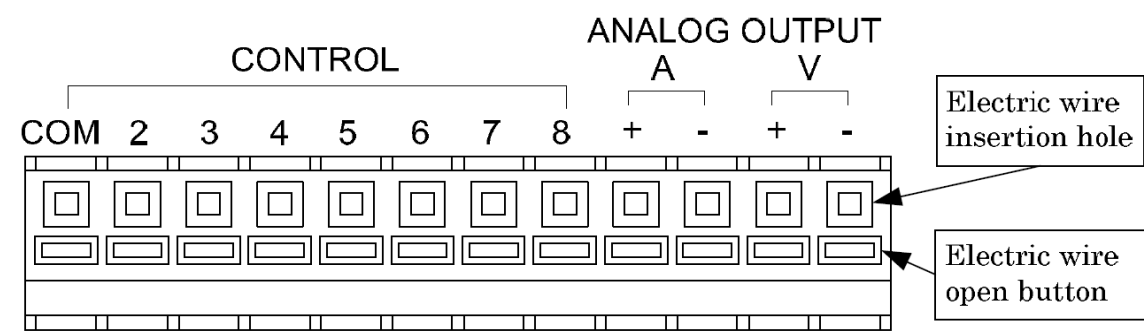
■USB output Data output code **6**



*Conforming lead: Single wire φ0.4mm (AWG26) to φ1.0mm (AWG18)
Stranded wire 0.3mm²(AWG22) to 0.75mm²(AWG20)
Connector :USB B type, cable length maximum 5m

No.	Name	Description
1	CONTROL COM	Control input common terminal
2	CONTROL 2	Control input No.2 terminal
3	CONTROL 3	Control input No.3 terminal
4	CONTROL 4	Control input No.4 terminal
5	CONTROL 5	Control input No.5 terminal
6	CONTROL 6	Control input No.6 terminal

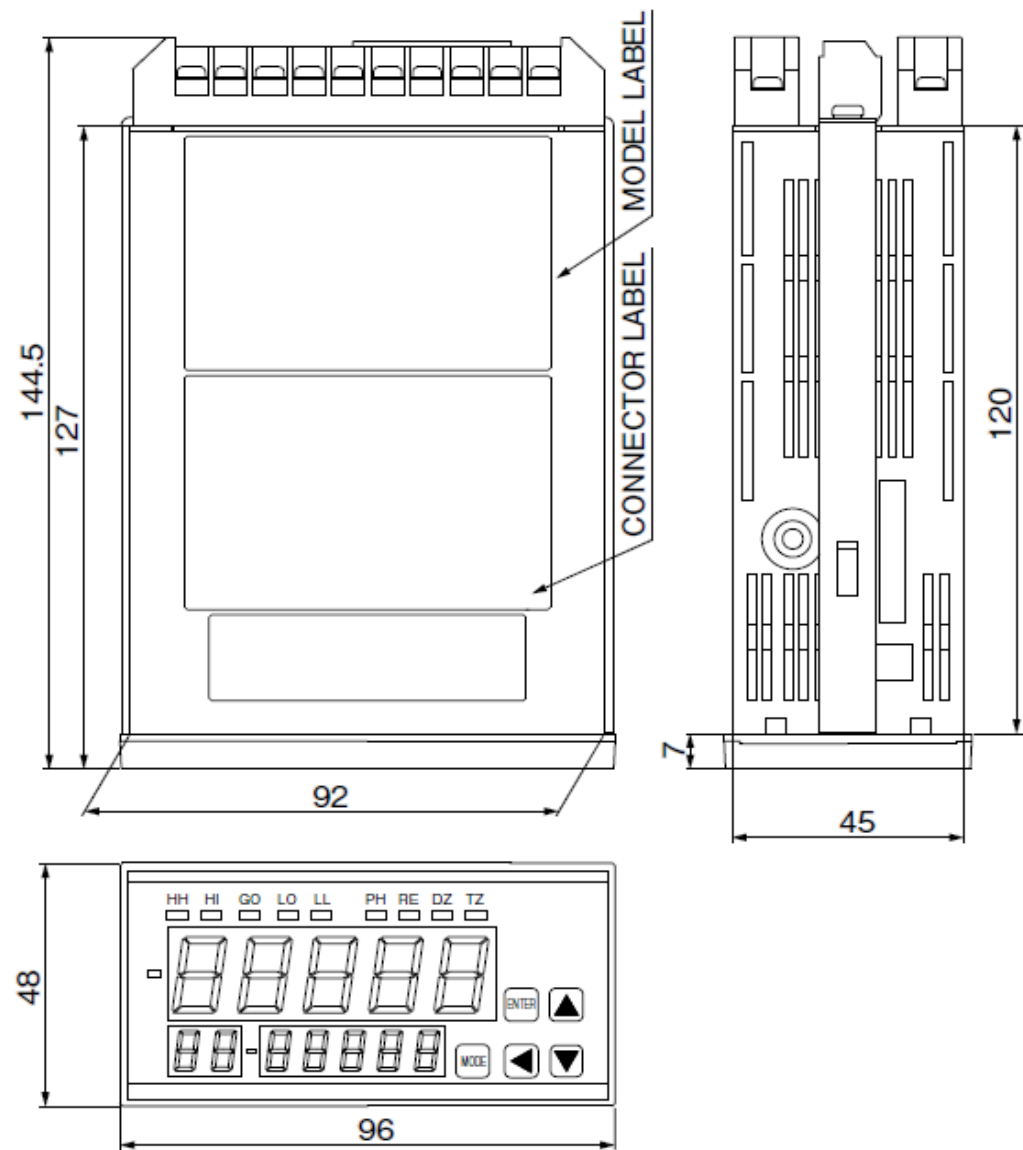
■Analog output Output code **7**



*Conforming lead: Single wire φ0.4mm (AWG26) to φ1.0mm (AWG18)
Stranded wire 0.3mm²(AWG22) to 0.75mm²(AWG20)

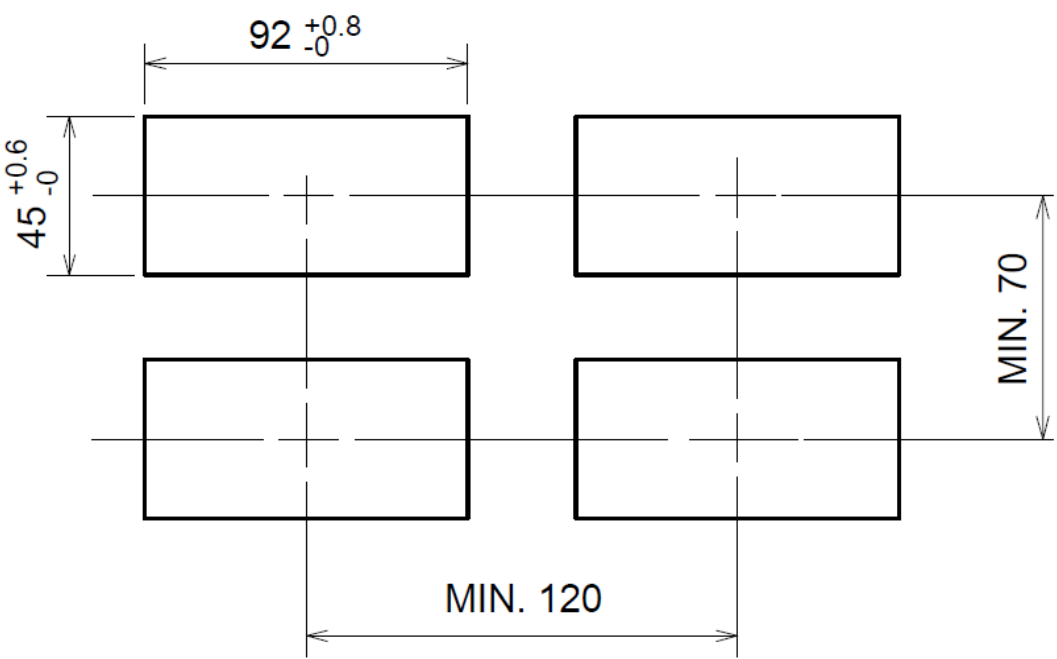
No.	Name	Description
1	CONTROL COM	Control input common terminal
2	CONTROL 2	Control input No.2 terminal
3	CONTROL 3	Control input No.3 terminal
4	CONTROL 4	Control input No.4 terminal
5	CONTROL 5	Control input No.5 terminal
6	CONTROL 6	Control input No.6 terminal
7	CONTROL 7	Control input No.7 terminal
8	CONTROL 8	Control input No.8 terminal
9	Analog A (+)	Analog current output + side terminal
10	Analog A (-)	Analog current output - side terminal
11	Analog V (+)	Analog voltage output + side terminal
12	Analog V (-)	Analog voltage output - side terminal

Dimensions



(Unit : mm)

Panel cutout



*Recommended Panel thickness 0.8mm to 5mm

(Unit : mm)

* Specification is subject to change without notice