SETPOINT COMPARATOR

AM-346

✻RS485, RS232C Output

■ DC Voltage Measurement

Code		Range	Display Adjustable	Input Impedance	Input Protection
DV	11	±99.99mV	Offset ±9999 Fullscale ±9999	100MΩ	±250V
	12	±999.9mV		100MΩ	±250V
	13	±9.999V		1MΩ	±250V
	14	±99.99V		10MΩ	±500V
	15	±700.0V		10MΩ	±700V
	1V	1-5V		1MΩ	±250V

Accuracy: ±0.03% rdg ±2 digit (23°C ±5°C)

■ DC Current Measurement

Code		Range	Display Adjustable	Internal Resistance	Input Protection
DA	23	±9.999mA	Offset ±9999 Fullscale ±9999	10Ω	±150mA
	24	±99.99mA		1Ω	±500mA
	25	±999.9mA		0.1Ω	±3A
	2A	4-20mA		10Ω	±150mA

Accuracy: ±0.1% rdg ±2 digit (23°C ±5°C)
±0.3% rdg ±2 digit for only 25 range

■ AC Voltage Measurement (TRUE-RMS)

Code		Range	Display Adjustable	Input Impedance	Input Protection
AV	13	0-9.999V	Offset ±9999 Fullscale ±9999	1MΩ	300V
	14	0-99.99V		1MΩ	300V
	15	0-700.0V		10MΩ	700V

Accuracy: ±0.3% rdg ±5 digit (23°C ±5°C)

■ AC Current Measurement (TRUE-RMS)

Code		Range	Display Adjustable	Internal Resistance	Input Protection
AA	24	0-99.99mA	Offset ±9999 Fullscale ±9999	1Ω	500mA
	25	0-999.9mA		(CT)	10A
	26	0-5.000A		(CT)	10A

Accuracy: ±0.5% rdg ±10 digit (23°C ±5°C):

■ Specifications

•Measuring Section

Input Configuration:	Single Ended
Conversion Rate:	12.5 times/sec (50Hz) or 15 times/sec (60Hz)
Normal Mode Rejection:	More than NMR 50dB (50/60Hz)
Display:	LED, 14.2mm hight (Red)
Polarity:	A "-" is displayed automatically
Overrange Indication:	When input exceeds the maximum display, display OL or -OL
Max. Display:	0 to ±9999
Decimal Point:	Settable to any digit position
Zero Display:	Leading zero suppression
External Control:	Hold ; Shorted COM and S/H terminal or level "0" Start; Open COM and S/H terminal or "1" level Digital Zero; Shorted COM and DZ terminal or level "0" Peak Hold; Valley Hold; Shorted COM and PH terminal or level "0" Peak Valley Hold; Level "0"= 0 to 1.5V Level "1"= 3.5 to 5V Current= less than -2mA

■ Features

- Compact Size 36X72X118 mm (DIN size)
- Power supply 90 to 132VAC, 180 to 264VAC
- LED hight, 14.2mm (Red)
- HH, HI, LO, LL set points available
- Conversion Rate 12.5 times/sec(50Hz), 15 times/sec(60Hz)
- Peak, Valley, Peak-Valley hold (standard)
- Digital Zero
- Output , BCD, ANALOG, RS485, RS232C(option)

• Comparator Section

Control System:	Microcomputer
Setting Range:	-9999 to +9999 with polarity
Comparative Condition:	Indication>High high setpoint →HH (HI) High high setpoint≧Indication>High setpoint →HI High setpoint≧Indication≧Low setpoint →GO Low setpoint>Indication≧Low low setpoint →LO Low low setpoint>Indication →LL (LO)
Photo Coupler Output:	Voltage=Max. 30V Current=max. 20mA Saturation voltage=less than 1.2V at 20mA
Hysteresis:	1 to 999 digit each setpoints
External Control:	Reset; Shorted COM and R.RE terminal or level "0" Level "0"= 0 to 1.5V Level "1"= 3.5 to 5V Current= less than -2mA

• Common Section

Memory Back-up:	EEPROM (Rewrite more than 100,000 times) back up 10 years
Operating Temp:	0 to 50 ˚C 35 to 85% RH
Power Supply:	90 to 132VAC 180 to 264VAC
Power Consumption:	2.5VA TYP. (at 100V)
Dimensions:	36(H) × 72(W) × 118(D) mm DIN Size
Weight:	Approx. 260g (unit only)
Dielectric Strength:	Input/earth, COM, Comparative output, DC500V/ 1 min. Input/COM of each output terminal, DC500V/1 min. Power supply/input,COM, case, comparative output, 1500VAC/1 min. Power supply/COM of each output terminal, 1500VAC/1 min.
Insulation Resistance:	500VDC more than 100MΩ at the above terminals
Dielectric Noise:	Power supply terminal normal/common mode ±1500V Noise width 500nS
Accessories:	Instruction manual, unit lable, cover for terminal,setting procedure MIL connector for only BCD and RS232C option

■ Output

●BCD data output (Isolated input (Lo))

• At TTL

Measured Data:	Tri-state parallel BCD, positive logic, latch output
Polarity Signal:	Level "1" at minus input
Over Signal:	Level "1" at overflow input
Printing Command Signal:	Postive pulse approx 20ms at every measurement completion (Available negative logic the above signals)
	TTL level, funout 2, CMOS 5V

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•At Open collector (NPN)
Measured Data: Negative logic transistor "ON" at logic 1
Polarity Signal: Transistor "ON" at minus input
Over Signal: Transistor "ON" at overflow input
Printing Command Signal: Transistor "ON" during a period for approx 20ms at every measurement completion
Transistor Output Capacity: Applied voltage, 30V max. current 10mA max. Saturated output voltage less than 1.2V at 10mA
ENABLE: Shorted ENABLE terminal and DG terminal or level "0",Transistor outputs are OFF. (TTL output is high impedance status)
Level "0"= 0 to 1.5V
Level "1"= 3.5 to 5V
Current= less than -0.5mA

●RS-485 (Isolated input (Lo))
Electrical Characterstics: Conforming to EIA RS-485
Synchronous Method: Start and stop
Communication Method: 2-wires system half-duplex (Polling and selecting)
Transmission Speed: 2400/4800/9600/19200 bPS
Start Bit: 1 bit
Data Length: 7 bits
Error Detection: Even parity (BCC)
Stop Bit: 2 bits
Character Code: ASCII code
Transmission Control: No protocol
Signal name used:

Signal name	Signal	Signal Direction
Non-reversible output	+	Input/output
Reversible output	-	Input/output

No. of Connectable Meter: Up to 31 meters
Line Length: Up to 500m in total

●RS-232C (Isolated input (Lo))
Electrical Characterstics: Conforming to EIA RS-232C
Communication Method: Full duplex
Synchronous Method: Start and Stop
Transmission Speed: 2400/4600/9600/19200 bPS
Start Bit: 1 bit
Data Length: 7 bits
Error Detection: Even parity
Stop Bit: 2 bits
Character Code: ASCII code

●Analog Output (Isolated input (Lo))
Resolution : 13 bits
Output Response: Less than 0.5S

Output	Resistive load	Accuracy(23°C±5°C)	Ripple
0 to 10V	More than 10KΩ	±0.5% FS	50mV P-P
4 to 20mA	0 to 550Ω	±0.5% FS	less than 0.5%

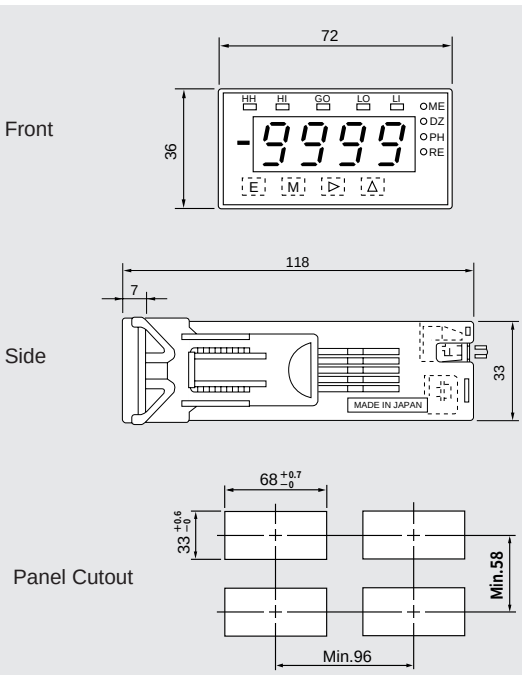
※Ripple for 4 to 20mA at resistive load 250Ω, 20mA

■ Ordering Code

AM-346- □□-□□

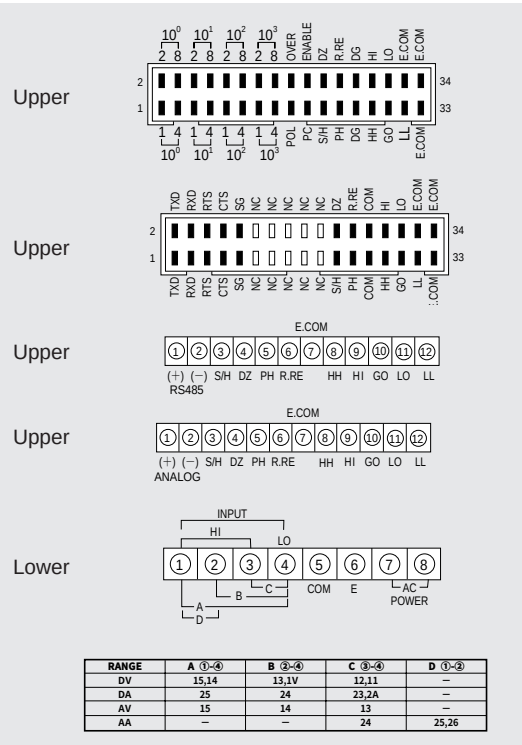
- Output
  - 2. BCD (Open collector)
  - 3. BCD (TTL)
  - 4. RS-485
  - 5. RS-232C
  - 6. Analog (4 to 20mA)
  - 7. Analog (0 to 10V)
- Power Supply
  - 1. 90 to 132VAC
  - 2 180 to 264VAC
- Range
  - DV (11,12,13,14,15,1V)
  - DA (23,24,25,2A)
  - AV (13,14,15)
  - AA (24,25,26)

■ Dimensions



Panel thickness 0.8 to 5.0mm

■ Connection Diagram



RANGE	A ①-④	B ②-④	C ③-④	D ①-②
DV	15,14	13,1V	12,11	–
DA	25	24	23,2A	–
AV	15	14	13	–
AA	–	–	24	25,26