

Topac Inc.

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AM-346

\*RS485, RS232C Output



### ■ DC Voltage Measurement

Code	Range	Display Adjustable	Input Impedance	Input Protection		
DV	11	±99.99mV	Offset	100MΩ	±250V	
	12	±999.9mV		100MΩ	±250V	
	13	±9.999V	±9999	1MΩ	±250V	
	14	±99.99V	Fullscale	10MΩ	±500V	
	15	±700.0V		±9999	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	10Ω	±150mA	
	24	±99.99mA		1Ω	±500mA	
	25	±999.9mA	Fullscale	0.1Ω	±3A	
	2A	4-20mA		±9999	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	1MΩ	300V
	14	0-99.99V		±9999	1MΩ
	15	0-700.0V	Fullscale	±9999	10MΩ

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	1Ω	500mA
	25	0-999.9mA		±9999	(CT)
	26	0-5.000A	Fullscale	±9999	(CT)

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 high (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 high, 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. 50mA  
 Saturation voltage=less than 1.2V at 50mA

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) X 72(W) X 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 100M Ω 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

## AM-346

- 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 Characteristics: 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

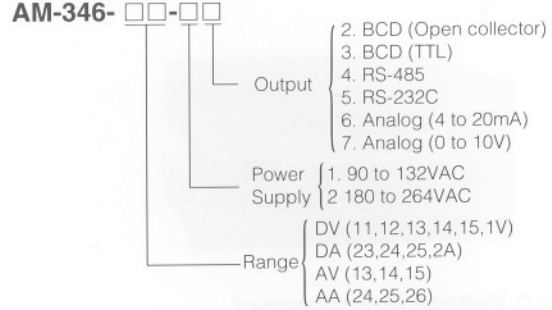
- RS-232C (Isolated input (Lo))  
Electrical Characteristics: Conforming to EIA RS-232C  
Communication Method: Full duplex  
Synchronous Method: Start and Stop  
Transmission Speed: 2400/4600/9600/19200 bps  
Start Bit: 1 bit  
Data Length: 7 bits  
Error Detection: Even parity  
Stop Bit: 2 bits  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

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

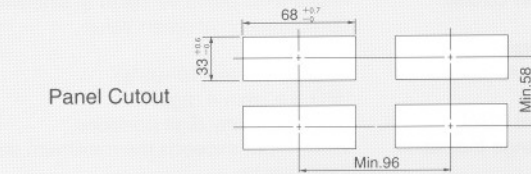
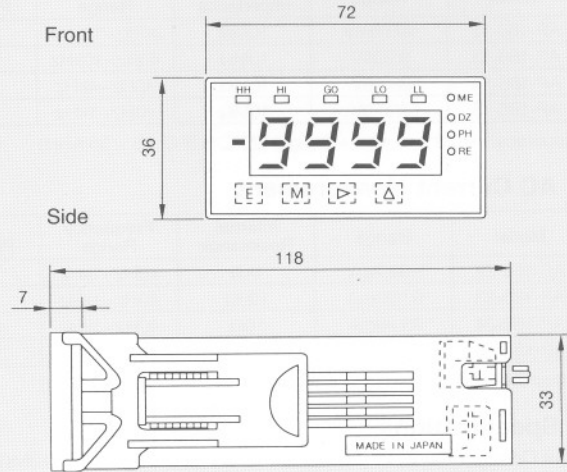
Output	Resistive load	Accuracy(23°C±5°C)	Ripple
0 to 10V	More than 10KΩ	±0.5% FS	50mV P-P
4 to 20mA	0 to 550Ω	±0.5% FS	less than 0.5%

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

### Ordering Code

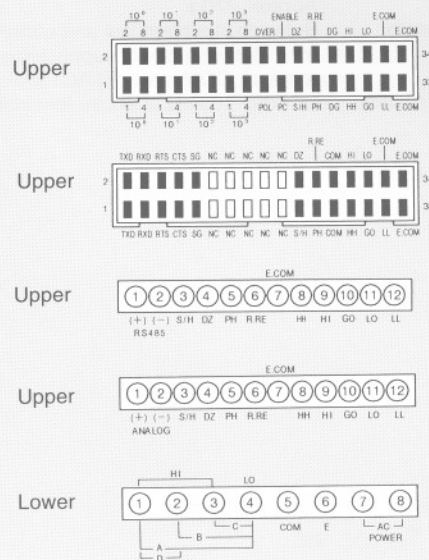


### Dimensions



Panel thickness 0.8~5.0mm

### 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

Sales, Service, Technical support

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