SPEC SHEET

Digital Indicating Dissolved Oxygen Meter

AER-102-DO

- 48 x 96 mm, panel mounting type
- Drip-proof/Dust-proof IP66 (for front panel only)
- Power supply voltage 24 V AC/DC (user-specified)
- Proportional control, Max 4 points of relay contact
- Various settings & calibration via software communication (RS-485) (optional)

Name	Digital Indicating Dissolved Oxygen Meter			

Model

AER - 1 0	2	-DO	☐ , ☐☐☐	
Input points	2			2 points
Input		DO		Optical DO sensor
Power supply voltage				100 to 240 V AC(standard)
			1	24 V AC/DC (*)
Option			C5	Serial communication RS-485
			EVT3	EVT3, EVT4 outputs (Contact output 3, 4)

(*) Power supply voltage100 to 240 V AC is standard.
When ordering 24 V AC/DC, enter '1' in Power supply voltage, after 'DO'.

Measurement range

Input	Input Range	Resolution
DO concentration	0.00 to 20.00 mg/L	0.01 mg/L
DO % saturation	0.0 to 200.0%	0.1%
Oxygen partial pressure	0.0 to 150.0 kPa	0.1 kPa
Temperature	0.0 to 50.0℃	0.1℃

Indication accuracy	Depends on the accuracy of Optical DO sensor.
Time accuracy	Within ±1% of setting time
Data update cycle	5 seconds
Contact output	Relay contact:　1a Control capacity: 3 A 250 V AC (Resistive load), 1 A 250 V AC (Inductive load, $\cos\phi$=0.4) Electrical life:　100,000 cycles Output action :　P control, ON/OFF control
Transmission output 1, 2	Converts any one of (DO concentration, water temperature, DO % saturation, Oxygen partial pressure or MV) to an analog signal every update cycle, and outputs in current. If Transmission output 1 (or 2) high limit and low limit are set to the same value, Transmission output 1 (or 2) will be fixed at 4 mA DC. Resolution: 12000 Output: 4 to 20 mA DC (Load resistance: Max. 550 Ω) Output accuracy: Within ±0.3% of Transmission output 1 (or 2) span
Self-diagnosis	The CPU is monitored by a watchdog timer, and if an abnormal status occurs, the instrument is switched to warm-up status.
Ambient temperature	0 to 50℃
Ambient humidity	35 to 85 %RH (Non-condensing)
Power supply voltage (Must be specified.)	AER-102-DO:　100 to 240 V AC 50/60 Hz　Allowable fluctuation range: 85 to 264 V AC AER-102-DO 1: 24 V AC/DC 50/60 Hz　　Allowable fluctuation range: 20 to 28 V AC/DC
Structure	Flush (Applicable panel thickness: 1 to 8 mm) Case: Flame-resistant resin,　Color: Black Front panel: Membrane sheet Drip-proof/Dust-proof: IP66 (for front panel only)
Protection structure	Overvoltage category Ⅱ, Pollution degree 2 (IEC61010-1)
Safety standards	RoHS directive compliant
Dimensions	W48 x H96 x D110 mm, Case depth: 98.5 mm (when mounted through a control panel)
Weight	Approx. 290 g

Serial communication (C5 option)	The following operations can be carried out from an external computer.
	(1) Reading and setting of various set values
	(2) Reading of DO concentration, DO % saturation, Oxygen partial pressure, temperature and status
	(3) Function change and adjustment
	(4) Reading and setting of user save area

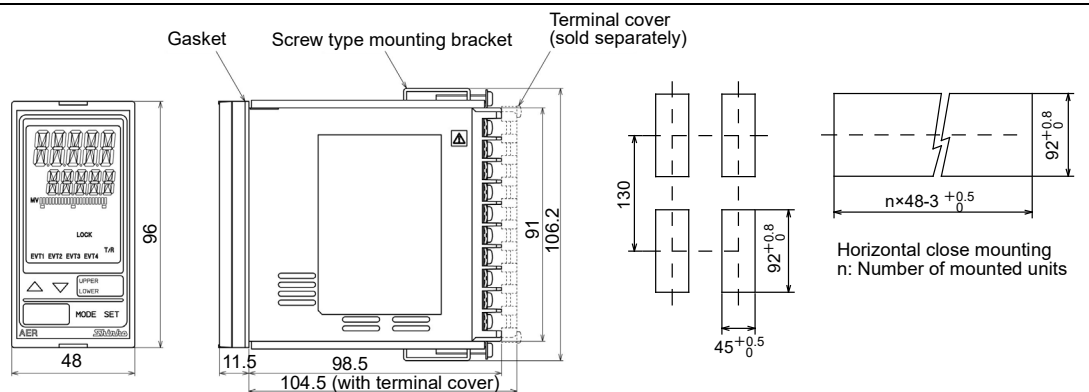|	
Cable length	1.2 km (Max), Cable resistance value: Within 50 Ω (Terminators are not necessary, but if used, use 120 Ω minimum on both sides.)
Communication line	EIA RS-485
Communication method	Half-duplex communication
Communication speed	9600, 19200, 38400 bps (Selectable by keypad)
Synchronization method	Start-stop synchronization
Code form	ASCII, Binary
Communication protocol	Shinko protocol, MODBUS ASCII, MODBUS RTU (Selectable by keypad)
Data bit/parity	8-bits/No parity, 7-bits/No parity, 8-bits/Even, 7-bits/Even, 8-bits/Odd, 7-bits/Odd (Selectable by keypad)
Stop bit	1, 2 (Selectable by keypad)
Error correction	Command request repeat system
Error detection	Parity check, Checksum (Shinko protocol), LRC (MODBUS protocol ASCII), CRC-16 (MODBUS protocol RTU)

Data format:

Communication Protocol	Shinko Protocol	MODBUS ASCII	MODBUS RTU
Start bit	1	1	1
Data bit	7	7 (8) Selectable	8
Parity	Even	Even (No parity, Odd) Selectable	No parity (Even, Odd) Selectable
Stop bit	1	1 (2) Selectable	1 (2) Selectable

EVT3, EVT4 outputs (Contact output 3, 4) [EVT3 option]	Same as contact output.

Dimensions, Panel cutout (Scale: mm)	

Gasket
Screw type mounting bracket
Terminal cover (sold separately)

Horizontal close mounting
n: Number of mounted units

Terminal arrangement	

GND: Ground (①)
POWER SUPPLY: Power terminals (② - ③)
EVT1: EVT1 output terminals (Contact output 1) (⑤ - ⑥)
EVT2: EVT2 output terminals (Contact output 2) (⑫ - ⑬)
TRANSMIT OUTPUT1: Transmission output 1 terminals (⑦ - ⑧)
TRANSMIT OUTPUT2: Transmission output 2 terminals (⑭ - ⑮)
SELFCHECK OUTPUT:
  Self-check output terminals (Contact output) ⑨ - ⑩
DO POWER FOR SENSOR:
  External power supply (+) terminal (Red) (⑯)
DO POWER FOR SENSOR: External power supply (-) terminal and DO sensor shield (Black) (⑰)
DO RS-485 (sensor input):
  DO sensor YB (+) input terminal (Blue) (⑱)
DO RS-485 (sensor input):
  DO sensor YA (-) input terminal (Green) (⑲)
When C5 option is ordered:
  RS-485: Serial communication
  Two connectors are internally wired.
When EVT3 option is ordered:
  EVT3: EVT3 output (Contact output 3)
  EVT4: EVT4 output (Contact output 4)