

IR-M1700 SERIES INFRARED THICKNESS METER



MODEL IR-M1 7□□□□ (Detector Unit) IR-GMEG1 □□ (Setting Display Unit)

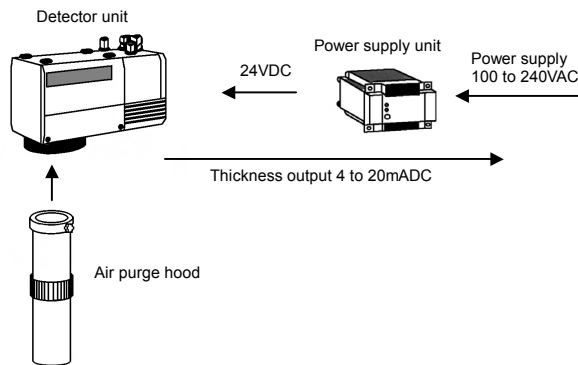
The IR-M1700 series is a reflection system on-line thickness meter for the measurement of thickness of polymer film and of coating volume of papers and polymer film utilizing the infrared absorption.

Converting capabilities are built into the compact designed detector unit for easy installation and operation. Maximum 99 calibration curves can be stored into the detector memory for numerous measurement applications. The detector can be used by itself or connected to a PC/plant control system, as both analog and digital outputs are provided.

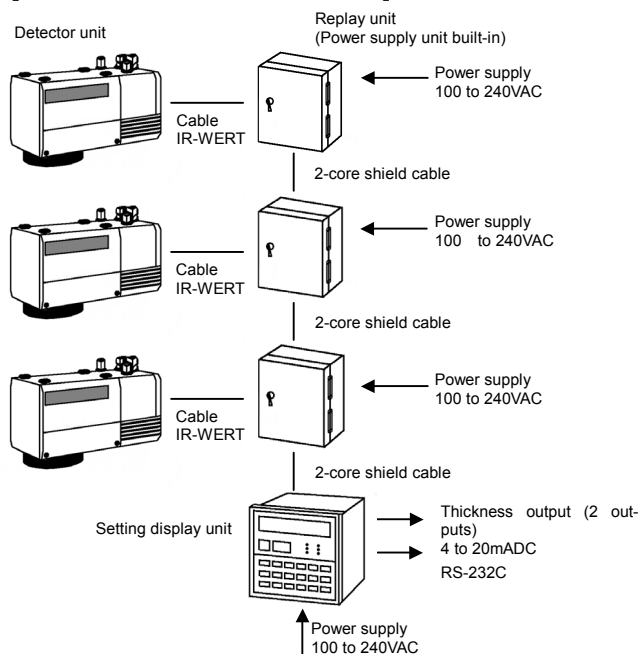


■ CONFIGURATION

● SINGLE UNIT APPLICATION



● COMBINATION WITH SETTING DISPLAY UNIT [MULTIPLE UNITS APPLICATION]



* For the connection with 2 sets of the detector unit, the relay box is not necessary.
For the connection of 3 sets or more of the detector unit, the relay box is necessary.

The following models only conforms CE.

Detector unit IR-M1700SV
Setting display unit IR-GMEG1□V

■ MODELS

● DETECTOR UNIT

IR-M17 □□□

- Measuring wavelength
 - 0: Standard
 - 9: Special wavelength
- External input/output
 - 0: Thickness output 4 to 20mADC (std)
 - 5: Compensation input 4 to 20mADC
- Communications interface
 - S: RS-485 (std)
 - R: RS-232C
 - A: RS-422A
 - * S in case of combination with the setting display unit
- Special specification
 - Blank: None
 - N: Without keys and display
 - S: Small diameter type
 - V: CE conformance
 - X: Other special specifications

● SETTING DISPLAY UNIT

IR-GMEG1 □□

- External output
 - 1: 4 to 20mADC (std)
- Communication interface
 - R: RS-232C (std)
 - A: RS-422A
 - S: RS-485
- Special specification
 - Blank: None
 - V: CE conformance (24VDC power supply)
 - X: Other special specifications

● POWER UNIT

IR-WEP

■ GENERAL SPECIFICATIONS

● DETECTOR UNIT (Models IR-M1100, IR-M1200)

Measuring system: Infrared reflection type 2-wavelength system

Measuring distance: 300mm

(Distance of 200 to 400mm is possible.)

Measuring area: 50 x 50mm (at the measuring distance of 300mm),

Small diameter type: 30 x 30mm (option)

Measuring output: 4 to 20m ADC (Load resistance: 500Ω or lower)

(1) Output accuracy: ±0.5% of full scale

(2) Stability: ±1% of full scale under EMC test environment

(Applicable to CE conformance model only)

Compensation input: 4 to 20mADC(option)

(For compensation of sample temperature, measuring distance, etc.)

The unit with compensation input has no thickness output.

Communications output: RS-485, RS-232C or RS-422A (to be

specified), RS-485 for combination with the setting display unit

Output renewal cycle: 28 ms

Reproducibility: Within [detector unit output (x) ± 0.003] by an output checking plate (under the same condition of ambient temperature and humidity)

Note: As the above reproducibility is by the output checking plate, the reproducibility on exact measurement differs.

Display: Data LED 5-digit
Calibration curve number LED 2-digit

Setting: By keys or communications

Calibration curve: Linear to cubic expression or broken line

Number of calibration curve: 99 curves

Calibration curve correction: Correction at zero and span

Calibration curve creation: Regression calculation

Smoothing: 0 to 99 seconds

(Less than 10 seconds: 0.1-second increment, More than 10seconds: 1-second increment)

Calibration: By output checking plate

Self-diagnostic: Display by LED or output by communications of calibration data error, ROM error, abnormal motor rotation, lamp power failure, abnormal communications, high/low ambient temperature, low reflection of sample, etc.

Working temperature range: 0 to 50°C (Cooling air is necessary for more than 45°C)

Rated supply voltage: 24VDC

Allowable voltage fluctuation: 18 to 30VDC

Power consumption: Max. 36VA

Allowable vibration: 3G or lower

Connection: Terminals connection

Casing: Aluminum casing, drip-proof structure (conforming to IEC529 IP65)

Mounting: Suspension system using four M8 bolts

Weight: About 4kg

With the power supply unit IR-WEP

CE conformance

<Standard>

EN55011 group 1 class A

EN50082-2 (industrial environment)

<Directive>

89/336/EEC, 92/31/EEC (amendment)

93/68/EEC (amendment)

● SETTING DISPLAY UNIT

Detector unit input:

RS-485, Connectable up to 9 detector units

Analog output: 4 to 20mADC (Load resistance: 500Ω or lower)
2 outputs

Output accuracy: ±0.5% of full scale

Communications output: RS-232C, RS-485 or RS-422A (to be specified)

Output renewal cycle: 28ms x (Number of detector unit connected)

Display: Data LED 5-digit

Calibration curve number LED 2-digit

Detector unit number LED 1-digit

External setting: Settings of detector unit number, calibration curve number, calibration, present output and hold by external contact.

Alarm: High/low limits alarm, 2 contact outputs (H-C-L)

Self-diagnostic: Contact 1 output

Working ambient temperature: 0 to 50°C

Rated supply voltage: 100 to 240VAC 50 Hz/60Hz

Allowable voltage: 85 to 264VAC

Power consumption: Max. 15VA

Casing: ABS resin

Front panel: Drip-proof structure (conforming to IP-65)

Mounting: Panel-mount type

Weight: About 0.6kg

CE conformance specifications

Analog output: 4 to 20mADC (Load resistance: less than 500Ω),
1 output

(1) Output accuracy: ±0.5% of full scale

(2) Stability: ±3% of full scale under EMC test environment

Rated power supply: 24VDC

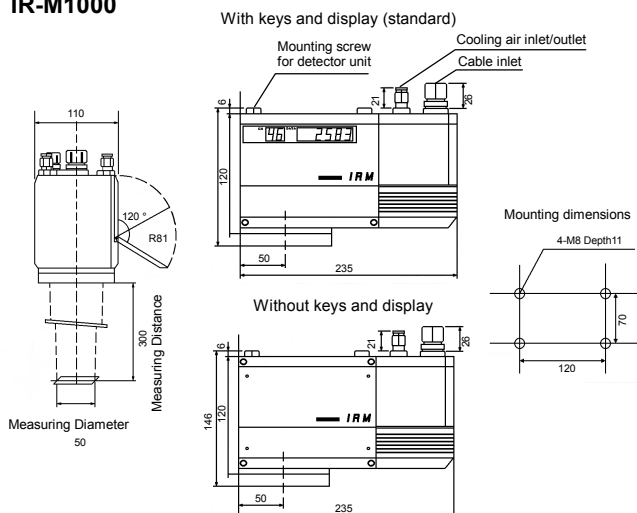
Allowable voltage fluctuation: ±10% of rated value

Power consumption: About 10VA

■ OUTSIDE DIMENSIONS

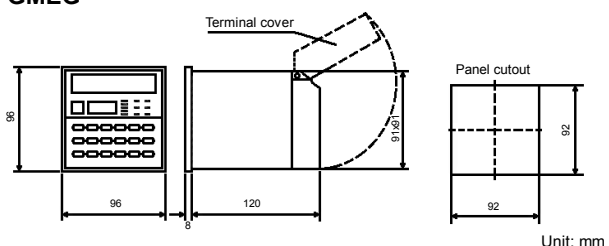
● DETECTOR UNIT

IR-M1000



● SETTING DISPLAY UNIT

IR-GMEG



Unit: mm

■ ACCESSORIES

● POWER SUPPLY UNIT IR-WEP (with CE-marking)

Output voltage: 24VDC

Output current: 2.1A

Working ambient temperature: -10 to + 50°C

Rated supply voltage: 100 to 240VAC
47 to 450Hz

Allowable voltage function: 85 to 264VAC

Power consumption: Maximum 160VA

Casing: Resin

Mounting: Wall-mount type (DIN rail mounting)

Weight: About 380g

● CONNECTING CABLE IR-WERT

This is a cable to be used for connection between the detector unit and the setting display unit (or the power supply unit).

Structure: 4-core cabtyre cable (With duplex shield)

Outside diameter: $\varnothing 10.5\text{mm}$

Length: Up to 200m

Connection: Tips at both ends

● AIR PURGE HOOD IR-WEA

This is used for shielding external light and for air-purging a measuring window and measuring optical path. The output checking plate is connectable to the hood end.

Purge air: Flow 50 to 200Nl/min

Pressure Max. 200kPa

(Use instrumentation air not including oil, dust, etc.)

● OUTPUT CHECKING PLATE

IR-WEB (for IR-M1100, IR-M1200)

IR-WEB3 (for IR-M1300)

This is mounted at the air purge hood to check the detector unit output at site.

● WATER COOLING PLATE IR-WEW

This is used on the condition that the detector unit is mounted at the ambient temperature is more than 45°C.

1 plate or 2 plates are mounted on the detector unit depended on condition. However 2-plate usage is limited to the detector unit without keys and display.

Ambient temperature: 0 to 60°C (using one plate)
0 to 80°C (using two plates)

Material: SUS304

Weight: 1kg

Cooling Water: Flow 0.5 to 1l/min

Pressure Max. 200kPa

Temperature Less than 30°C at water outlet

● MOUNTING ADAPTER IR-WED

This is used to mount the IR-M1000 detector unit by not changing the mounting place, in case that the IR-M1000 detector unit is used as a replacement of the IR-M1000 detector unit that has already been mounted.

Material: Aluminum

Weight: About 0.8kg

● AIR COOLING BOX IR-WEX

This is used for dust-proof and to cool the detector unit by air. (The detector unit is placed in the air cooling box.)

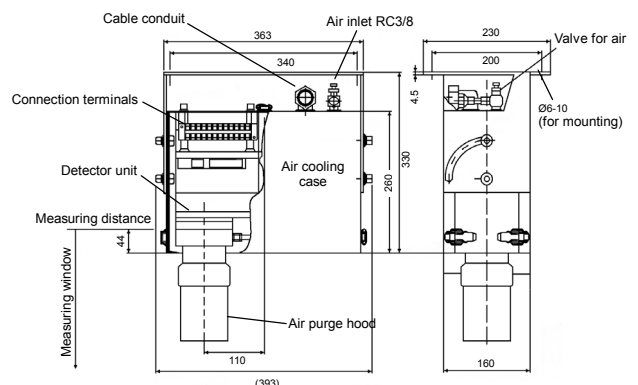
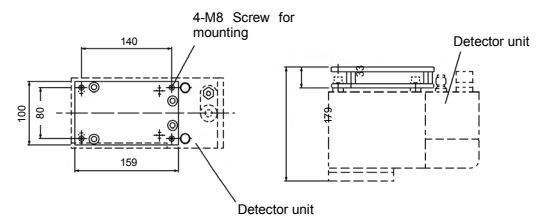
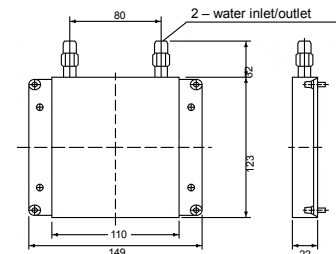
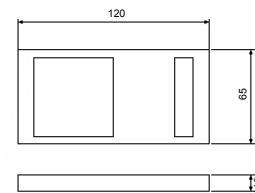
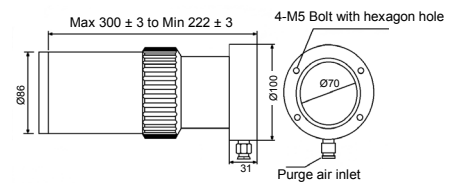
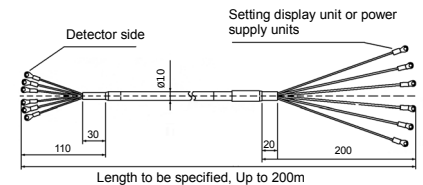
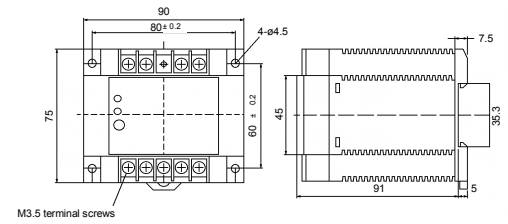
Ambient temperature: 0 to 55°C

Material: SUS304 (Air cooling case)

Iron (Mounting metal)

Air: Flow 100 to 500Nl/min

Weight: About 14kg



UNIT: mm

● **RELAY UNIT**

This unit is used as relay terminals for the connection with multiple detector units. The power supply unit is to be built in. Model IR-WEE2 is of drip-proof structure.

IR-WEE1

Working temperature range: 0 to 50°C

Material: Steel plate

Color: 5YP/1, Light beige

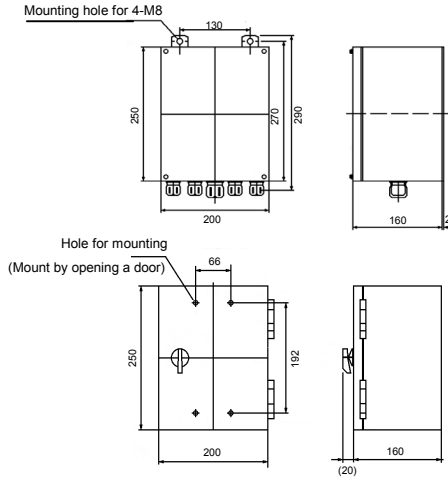
Weight: About 4kg (including power supply unit)

IR-WEE2

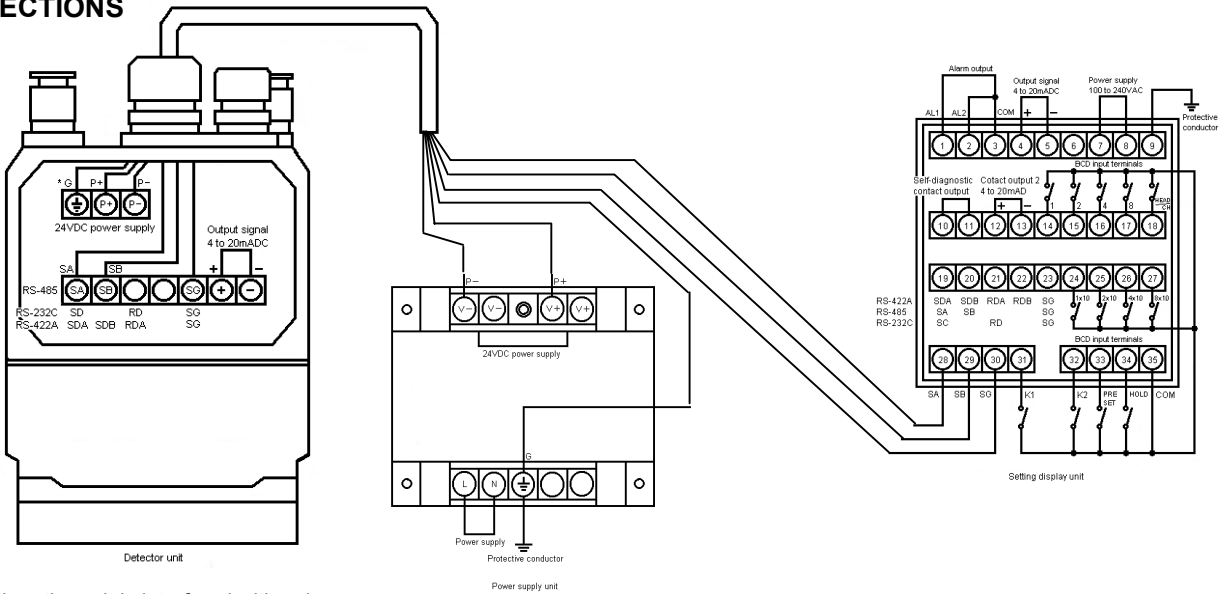
Working temperature range: 0 to 50°C

Material: SUS304

Weight: About 4kg (including power supply unit)

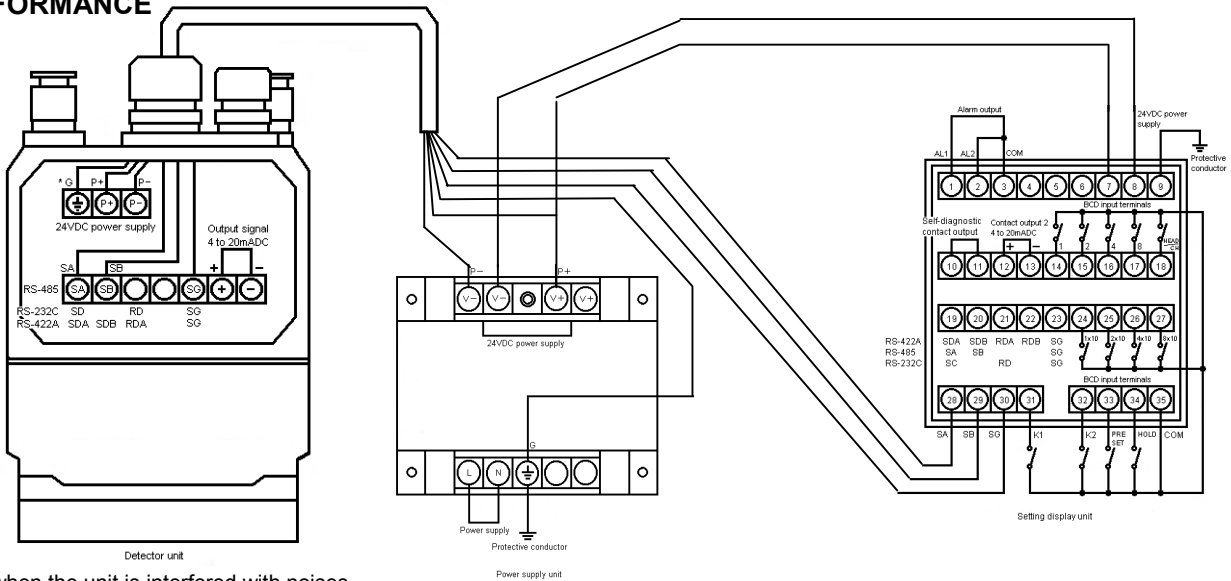


■ **CONNECTIONS**



* Connect when the unit is interfered with noises.

■ **CONNECTIONS FOR CE CONFORMANCE**



* Connect when the unit is interfered with noises.

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