

## Plug-in Signal Conditioners M-UNIT

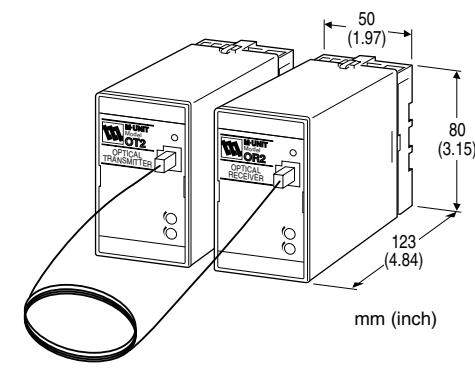
### OPTICAL RECEIVER

#### Functions & Features

- Isolation up to several hundred thousand volts with a fiber optics cable
- High-density mounting

#### Typical Applications

- Ion implanter
- Electron-beam devices
- Dust chamber
- Protection against inductive noises in power substations



### MODEL: OR2-[1]-[2][3]

#### ORDERING INFORMATION

- Code number: OR2-[1]-[2][3]
- Specify a code from below for each [1] through [3]. (e.g. OR2-A-B/Q)
- Special output range (For codes Z & 0)
- Specify the specification for option code /Q (e.g. /C01/S01)

#### [1] OUTPUT

##### Current

- A: 4 - 20 mA DC (Load resistance 750  $\Omega$  max.)
- B: 2 - 10 mA DC (Load resistance 1500  $\Omega$  max.)
- C: 1 - 5 mA DC (Load resistance 3000  $\Omega$  max.)
- D: 0 - 20 mA DC (Load resistance 750  $\Omega$  max.)
- E: 0 - 16 mA DC (Load resistance 900  $\Omega$  max.)
- F: 0 - 10 mA DC (Load resistance 1500  $\Omega$  max.)
- G: 0 - 1 mA DC (Load resistance 15 k $\Omega$  max.)
- Z: Specify current (See OUTPUT SPECIFICATIONS)

##### Voltage

- 1: 0 - 10 mV DC (Load resistance 10 k $\Omega$  min.)
- 2: 0 - 100 mV DC (Load resistance 100 k $\Omega$  min.)
- 3: 0 - 1 V DC (Load resistance 100  $\Omega$  min.)

- 4: 0 - 10 V DC (Load resistance 1000  $\Omega$  min.)
- 5: 0 - 5 V DC (Load resistance 500  $\Omega$  min.)
- 6: 1 - 5 V DC (Load resistance 500  $\Omega$  min.)
- 4W: -10 - +10 V DC (Load resistance 2000  $\Omega$  min.)
- 0: Specify voltage (See OUTPUT SPECIFICATIONS)

#### [2] POWER INPUT

##### AC Power

- B: 100 V AC
- C: 110 V AC
- D: 115 V AC
- F: 120 V AC
- G: 200 V AC
- H: 220 V AC
- J: 240 V AC

##### DC Power

- S: 12 V DC
- R: 24 V DC

#### [3] OPTIONS

- blank: none
- /Q: With options (specify the specification)

#### SPECIFICATIONS OF OPTION: Q (multiple selections)

##### COATING (For the detail, refer to M-System's web site.)

- /C01: Silicone coating
- /C02: Polyurethane coating
- /C03: Rubber coating

##### TERMINAL SCREW MATERIAL

- /S01: Stainless steel

#### RELATED PRODUCTS

- Optical Transmitter (model: OT2)
- Fiber optics cable:
  - 10 meters (model: AMPCP2-10M)
  - 20 meters (model: AMPCP2-20M)
  - 30 meters (model: AMPCP2-30M)
- Optical cable used for the AMPCP2
  - Mitsubishi Rayon Super Eska SH 4001
  - Minimum bend radius: 25 mm
  - Tension strength:  $\leq$  70 N
- Connector used for the AMPCP2
  - Avago Technologies HFBR-4532Z

#### GENERAL SPECIFICATIONS

- Construction: Plug-in
- Transmission method: Light pulse (100 - 500 Hz)
- Maximum transmission distance: 30 meters (98 ft)
- Connection
  - Output & power input: M3.5 screw terminals



**Optical fiber:** Connector

**Screw terminal:** Chromated steel (standard) or stainless steel

**Housing material:** Flame-resistant resin (black)

**Isolation:** Output to power

**Overrange output:** Approx. -10 to +120 % at 1 - 5 V

**Zero adjustment:** -5 to +5 % (front)

**Span adjustment:** 95 to 105 % (front)

**Power LED:** Green light turns on when the power is supplied.

## OUTPUT SPECIFICATIONS

■ **DC Current:** 0 - 20 mA DC

**Minimum span:** 1 mA

**Offset:** Max. 1.5 times span

**Load resistance:** Output drive 15 V max.

■ **DC Voltage:** -10 - +12 V DC

**Minimum span:** 5 mV

**Offset:** Max. 1.5 times span

**Load resistance:** Output drive 10 mA max.; 5 mA for negative voltage output; at  $\geq 0.5$  V

## INSTALLATION

**Power input**

•**AC:** Operational voltage range: rating  $\pm 10$  %, 50/60  $\pm 2$  Hz, approx. 3 VA

•**DC:** Operational voltage range: rating  $\pm 10$  %, ripple 10 %p-p max., approx. 2 W (80 mA at 24 V)

**Operating temperature:** -5 to +60°C (23 to 140°F)

**Operating humidity:** 30 to 90 %RH (non-condensing)

**Mounting:** Surface or DIN rail

**Weight:** 400 g (0.88 lb)

## PERFORMANCE in percentage of span

**Accuracy:**  $\pm 0.3$  % (Overall performance with the OT2 and OR2 combined)

**Temp. coefficient:**  $\pm 0.015$  %/°C ( $\pm 0.008$  %/°F)

**Response time:**  $\leq 0.6$  second (0 - 90 %) (Overall performance with the OT2 and OR2 combined)

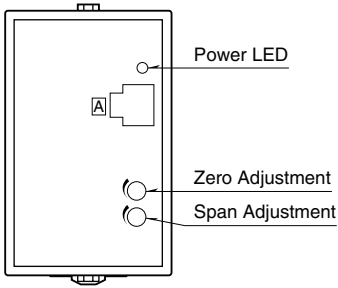
**Line voltage effect:**  $\pm 0.1$  % over voltage range

**Insulation resistance:**  $\geq 100$  M $\Omega$  with 500 V DC

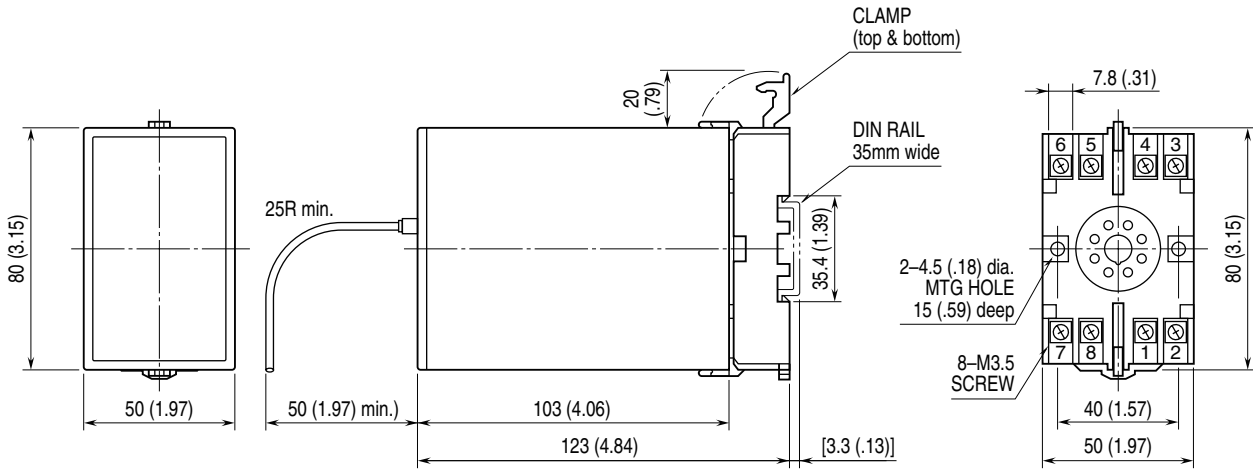
**Dielectric strength:** 2000 V AC @ 1 minute (output to power to ground)



**EXTERNAL VIEW**

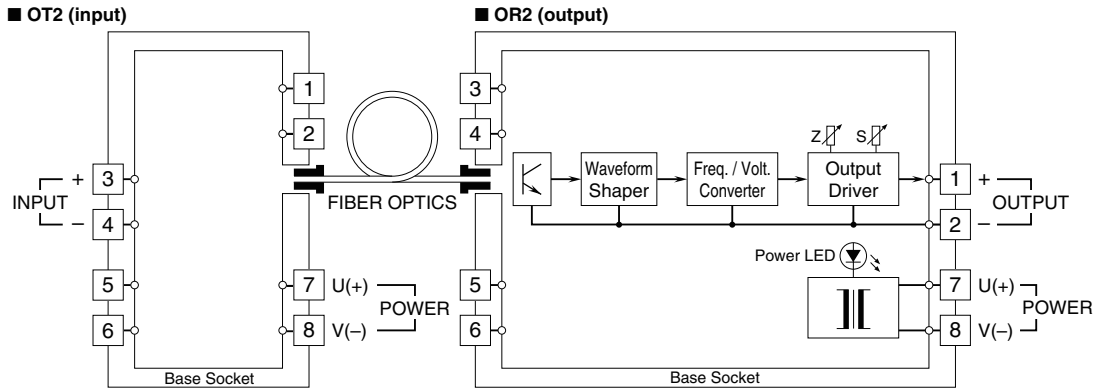


**EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)**



• When mounting, no extra space is needed between units.

**SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM**



Specifications are subject to change without notice.

