

OMI-2T optical machine interface

www.renishaw.com/omi-2t

The OMI-2T is a combined optical transmitter/receiver and machine interface, designed for mounting within the machine's working envelope.

The OMI-2T operates using a 'Modulated' optical transmission mode and is compatible with machine probes that also operate in 'Modulated' mode.

Features

- **Twin probe system**
The OMI-2T is capable of operating two compatible probes sequentially.
- **Modulated transmission**
Effects of light interference are reduced which in some circumstances could cause false trigger signals.
- **Visible probe diagnostic LEDs**
LEDs provide a visual indication of system status and identifies the active probe.
- **Mounting bracket**
The optional mounting bracket allows directional setting.
- **Toughened glass window**
- **Fully sealed to IPX8**
- **User configurable outputs**

Probe status 1 SSR	NO/NC, pulsed/level.
Probe status 2 SSR	NO/NC, pulsed/level.
Error SSR	NO/NC.
Low battery SSR	NO/NC.
- **Range selection**

Start (Tx)	50% or 100%.
Reception (Rx)	50% or 100%.

Both factory set at 100%.
- **Start inputs**
Level machine inputs define the active probe. When the respective input is active, the probe is switched on.
If both inputs are active the system will default to error.



Operating features

Switch on/off method

The OMI-2T operates using only optical on/optical off as the switch on/off method.

Optical on/optical off is available with all Renishaw's OMP range of spindle probes and the OTS tool setter probe.

Time out, spin on/off and shank on/off options are not compatible with the OMI-2T.

Start up times

In normal operation the start up time of either probe (as reported by the OMI-2T error signal) is 410 ms maximum.

The turn off time is 0 seconds.

Normal operation refers to when the on/off status of the probes is in synchronisation with the receiver on/off status. The active probe should correspond to the respective active system LED.

When changing from Probe 1 to Probe 2, or Probe 2 to Probe 1, allow 1 second between the cancelling of one machine start input and raising of the other start input.

Synchronisation recovery

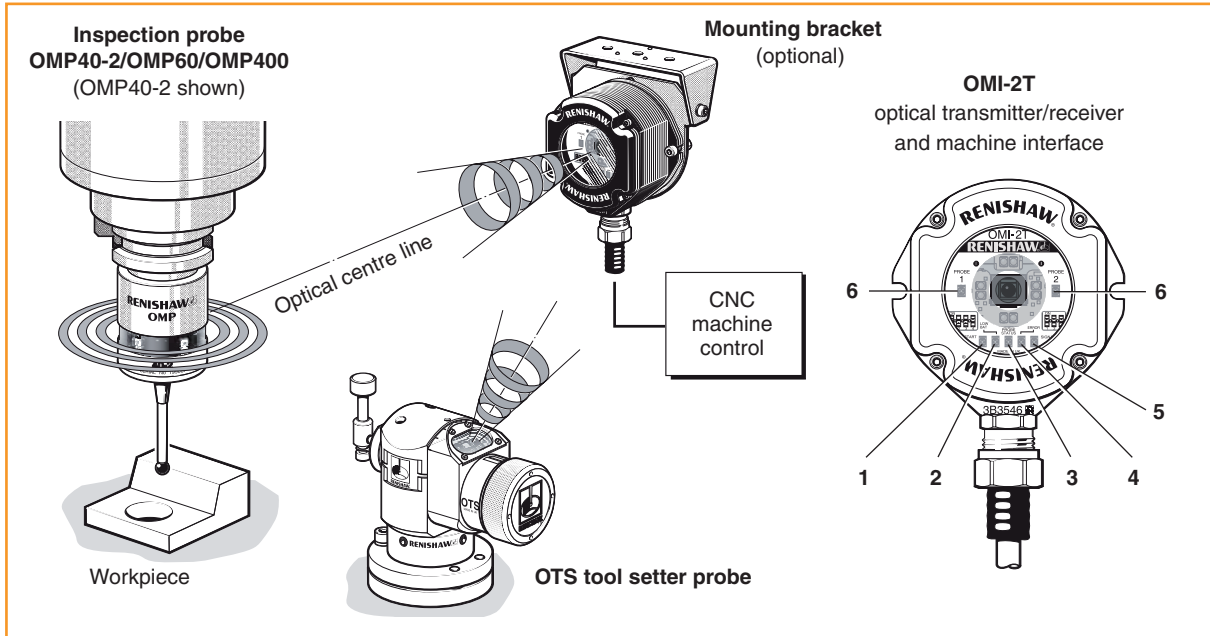
Under abnormal operating situations the system may lose synchronisation between the receiver and probes. An internal synchronisation recovery will be initiated when the next machine input is activated.

continued on next page :

Data sheet

OMI-2T optical machine interface

The OMI-2T is compatible with machine probes operating in 'Modulated' mode



Operating features

(continued)

Synchronisation recovery

The maximum time for system recovery from an abnormal operating situation is 3.5 seconds.

Such a time delay could cause a machine alarm if controllers require ready signals within a time of less than 3.5 seconds.

OMI-2T optimum position setting

To assist finding the optimum position for the OMI-2T during system installation, signal condition received is indicated on the red/yellow/green signal condition LED.

The OMI-2T may have to be shielded from direct light sources

The LED indication of a blue, yellow or violet error condition resulting from the loss of a good probe signal will persist until the active system input (Probe 1 or Probe 2 is deactivated).

WARNING:

If two systems are operating in close proximity, take care to ensure that signals transmitted from the probe on one machine, are not received by the OMI-2T on the other machine, and vice versa.

OMI-2T status LEDs

A visual indication of system status is provided by LEDs.

1. Start signal LED (yellow)

Flashes once when a machine input START signal is activated.

2. Low battery LED (red)

Red - Battery low
Off - Battery OK

3. Probe status LED (green, red)

This LED is lit when the OMI-2T is powered.
Green - Probe seated.
Red - Probe triggered or unknown status.

4. Error LED

Indicates a transmission error condition.

Red - No probe transmitting or probe out of range.
Blue - A modulated signal from a second probe has been received.
Yellow - Interference or a weak signal has been received.
Violet - Interference or a weak signal has delayed the trigger instant.

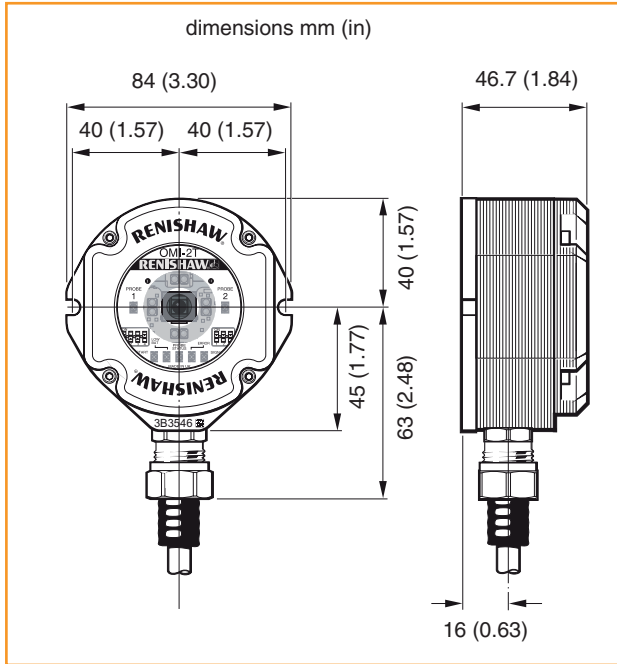
5. Signal condition LED

Red - No signal.
Yellow - Weak signal
Green - Good signal.

6. Active system LEDs

The LED is lit to show which machine input (Probe 1 or Probe 2) is active, and unlit when the system inputs are inactive.

Dimensions



Cable installation

- Install the OMI-2T with cable exiting from lower side for good coolant run off.
- Cable entry to the OMI-2T is sealed with a gland.
- Cable protection against physical damage should be provided by flexible conduit.
- Route the cable away from potential sources of electro magnetic interference.
- Maintain the screen through cable joints.

Cable specification

Ø7.5 mm (0.29 in), 13 core screened cable, each core 18 x 0.1 mm.

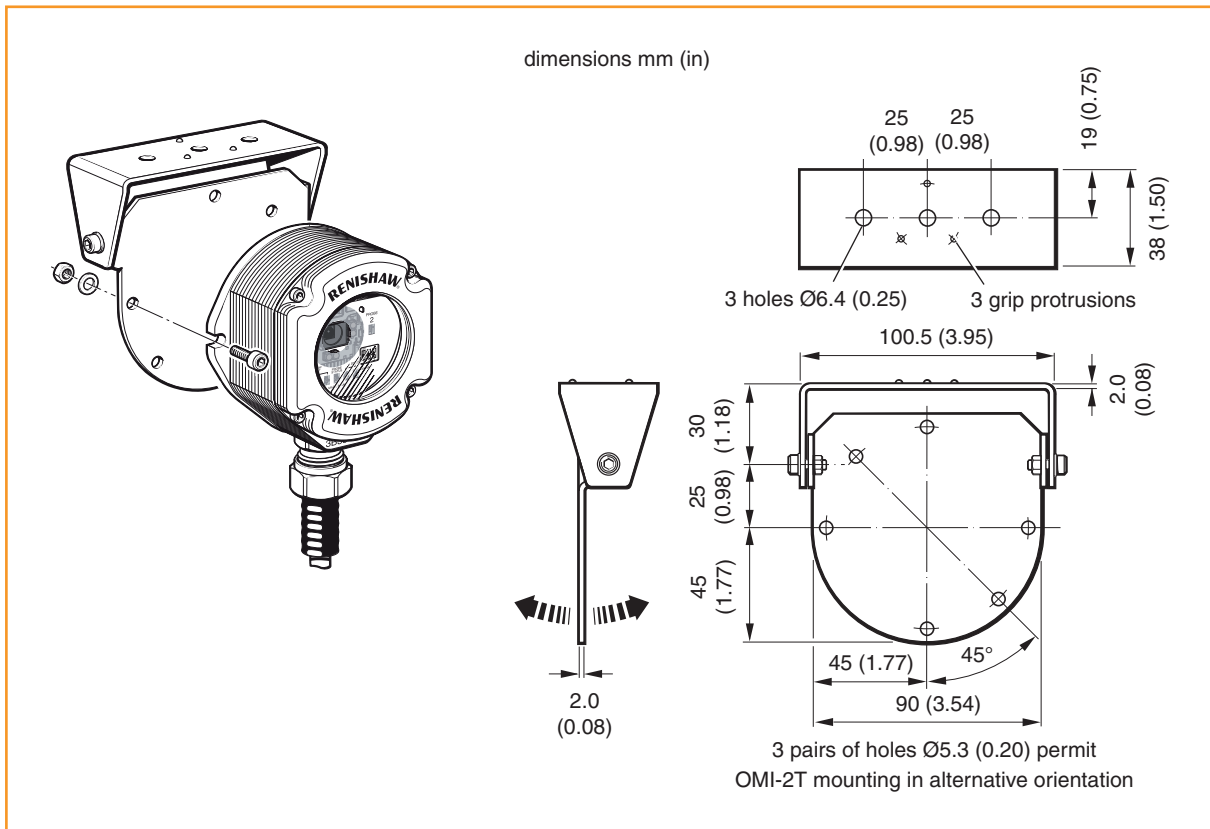
Standard cable variants

The OMI-2T standard polyurethane cables are 8 m (26 ft) and 15 m (49 ft) long.

NOTE:

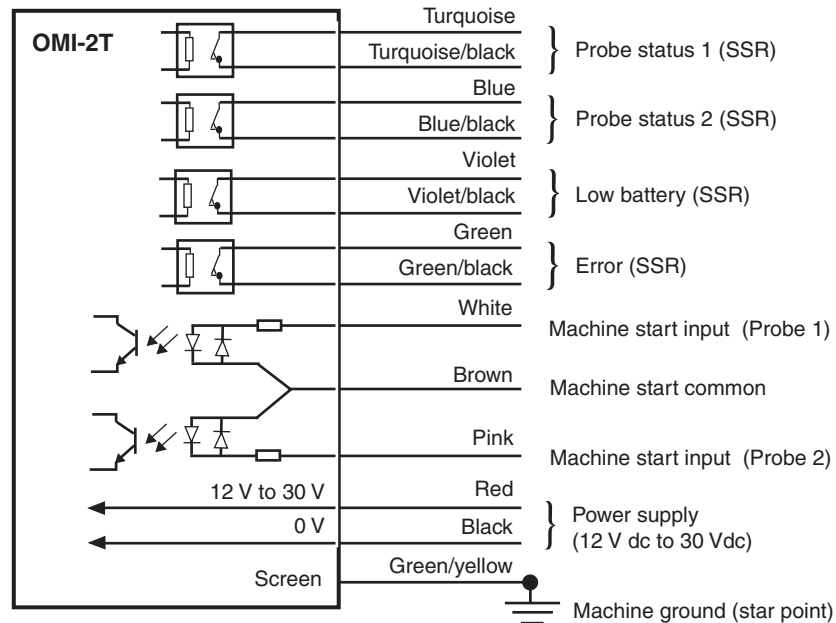
Maximum length of the specified cable must not exceed 25 m (82 ft).

Mounting bracket (optional)



Wiring diagram

(with output groupings shown)



Parts list – please quote the part number when ordering equipment

Type	Part no.	Description
OMI-2T kit	A-5439-0049	OMI-2T with 8 m (26 ft) cable and tool kit.
OMI-2T kit	A-5439-0050	OMI-2T with 15 m (49 ft) cable and tool kit.
Mounting bracket	A-2033-0830	Mounting bracket for OMI-2T.
Conduit kit	A-4113-0306	Conduit kit with 1 m (3.28 ft) of polyurethane conduit and bulkhead connector (M16 thread).
Window replacement kit	A-5191-0019	Comprising: window assembly with 'O' ring, 3 x stainless steel M3 x 14 mm long screws, 3 x stainless steel M3 x 5 mm long screws and 2.5 mm hexagon wrench.
Tool kit	A-5191-0300	Comprising: 2.5 mm hexagon wrench, 4 mm hexagon wrench, 14 x ferrules, 2 x M5 screws, 2 x M5 washers and 2 x M5 nuts.

Publications. These can be downloaded from our web site at www.renishaw.com

OMI-2T	A-5439-8500	Installation and user's guide OMI-2T
OMP40-2	H-4071-8200	Data sheet OMP40-2
OMP400	H-2000-2324	Data sheet OMP400
OMP60	H-2000-2131	Data sheet OMP60
OTS	H-5401-8200	Data sheet OTS

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