

Optical acquisition module 6 Hz ÷ 15 MHz

OAM305



TESEO plug-in systems and remote satellites are fiber optic communication links for the transmission of analog signals, in hostile environments subjected to electromagnetic interferences, noises, or characterized by the presence of high voltages.

The OAM305 system consists of a base module fitting in a MOCS mainframe, one single fiber optic cable for signal acquisition, one battery powered, shielded transmitter, and one battery charger.

Each OAM305 plug-in system holds one optical channel.

It provides researchers and engineers with an integrated technology solution to the problem of monitoring equipment-under-test functionality in safety conditions in environments characterized by high levels of electromagnetic field or very high voltages.

BASE UNIT PLUG-IN

The OAM305 plug-in system will receive an analog signal in the range 6 Hz to 15 MHz up to a distance of 1 km via fiber optic link.

The OAM305P base unit plug-in is a single channel receiver to be connected to one OAM305S satellite unit.

MOCS mainframes can house up to twelve OAM305P base unit plug-ins for a total of twelve independent optical channels.

SYSTEM CHARACTERISTICS

- Single channel plug-in for MOCS mainframes (up to twelve independent channels per mainframe)
- 6 Hz to 15 MHz operating frequency range
- 1 MOhm input impedance
- 1Vpp to 100Vpp full scale input in 5 selectable ranges
- 1Vpp full scale output on 50 Ohm
- Signal-to-noise ratio better than 50 dB
- Shielded to >200 V/m EM fields, 10 kHz to 18 GHz

SATELLITE UNIT

The very small sized battery powered OAM305S satellite unit can be located close to the signal monitoring points, also in hard to reach zones (e.g. engines, industrial equipment). It can be locally switched on or off, and you can select five input ranges, from 1 Vpp to 100 Vpp full scale. Input impedance is 1 MOhm.

OAM305S withstands more than 200V/m electromagnetic field strengths from 10 kHz to 18 GHz and is designed to operate over an exceptionally wide environmental range without significant change in performance.

It can operate continuously for over eight hours and can be recharged in short time by means of the associated battery charger. The ruggedness of this satellite makes it the ideal choice also for the acquisition of signals from remote transducers placed in extremely hard environments.

The connection to the OAM305P is made via a single fiber optic cable as no control signal is used.

APPLICATIONS

- General purpose signal monitoring
- Equipment under test functional signals monitoring
- Acquisition from remote transducers
- EMC/EMI
- High voltage floating and safe measurements

SYSTEM PARTS

- **OAM305P** single channel plug-in for MOCS mainframes
- **OAM305S** battery powered satellite unit
- **CB1** dedicated battery charger
- **FCmmm** fiber optic cable (*mmm* = length in meters)
- **FOBC ST** ST fiber optic cable feedthrough (OPTION)
- **FORF** fiber optic cable reeling frame (OPTION)

ACCESSORIES

In addition to the base and satellite units, each plug-in system is supplied with dedicated battery chargers leading to very short charge times.

The fiber optic cable is available in any length up to 1 Km. Alternatively, it can be supplied with a rugged reeling frame (up to eight fibers in one cable).

Feedthroughs for the fiber optic cables can be supplied too.

TECHNICAL SPECIFICATIONS

Frequency

- Bandwidth (-3 dB) 6 Hz to 15 MHz
- Max harmonic level -30 dBc
- S/N [20*Log (Vmaxpp/Vrms)] > 50 dB
- Flatness ± 2 dB

Amplitude

- Input type unbalanced
- Input impedance 1 MΩ
- Input ranges 1/3/10/30/100 Vpp full scale
- Ranges selection local with on/off switch
- Max input voltage 100 Vrms
- Output impedance 50 Ohm
- Output 1 Vpp full scale on 5Ω
- Accuracy: +/- (1% + 1mV) typ, ac input @ 60 Hz; +/- (2% + 10mV) typ, full range

Mechanical and environmental

Satellite Unit

- battery operating time continuous > 8 hours
switch-off > 1000 hours
- battery recharge time 2 hours
- battery charger connector LEMO 5 poles circular
- electrical input connector BNC
- fiber optic connector ST
- dimensions 107 x 70 x 47 mm
- operating temperature +10° / +50°C
- storage temperature -20° - +80°C

Base unit

- electrical output connector BNC
- fiber optic connector ST
- dimensions plug-in for MOCS mainframes
- operating temperature +10° / +50°C
- storage temperature -20° - +70°C