

Optical stimulus modules for switching and actuation

OSM303 / 304 with OSM05S



The OSM303 and OSM304 systems allow to remotely actuate low-power and high-power relays as well as different devices (dc motors, linear actuators, etc.).

An optical stimulus module for switching and linear actuation consists of a two independent optical channels base plug-in fitting into MOCS mainframes, one fiber optic per plug-in channel to send the commands, one or two shielded remote satellites, battery powered, dedicated battery chargers.

OSM series of switching and actuation plug-ins perform fiber optic remote controlled switching of low-power and high-power lines and a variety of different actuations; they provide researchers and engineers with an integrate technology solution to the problem of controlling and remotely managing equipment-under-test functions without perturbing the emission/susceptibility tests; this task is performed in safety conditions in environments characterized by high levels of electromagnetic fields or in very high voltages applications.

APPLICATIONS

- General purpose low-power and hi-power switching
- General purpose linear and circular actuations
- Simulation of ignition key and accelerator pedal on ground vehicles
- Simulation of continuous and momentary switches and of linear and circular actuations in ship and airplanes EMC testing

BASE UNIT PLUG-IN

Different plug-ins are available, each allowing the control of different satellites.

Common characteristics are:

- two independent optical channels permitting the control of two different satellites with two different actuations
- manual and/or remote actuation via front panel / RS232GPIB interface
- fixed/momentary switches for different actuations
- actuations status shown on the plug-in panels
- fiber optic links up to 200 m

The OSM03P plug-in is a general purpose module, allowing the control of: OSM303S satellite containing two 1 A 50 V relays,

OSM304S satellite containing two 30A 50V relays, OSM05S satellite containing a linear actuator, and future OSM series.

The OSM04P plug-in is a module dedicated to the control of the ignition (setting in motion, acceleration, deceleration etc.) of a vehicle; so it fully supplies the functions of the ignition key and of the accelerator. Normally it uses the OSM304S and OSM305S satellites.

SYSTEM CHARACTERISTICS

- Two channels plug-ins for MOCS mainframe
- Remote management via fiber optic link of low-power relays, high power relays, linear actuators
- Full manual and RS232GPIB management of all the functions
- Shielded to >200 V/m EM fields, 10 kHz to 18 GHz

SATELLITE UNITS

OSM303S - low power relays satellite

The small sized battery powered OSM03S satellite can be located close to the points to switch, also in hard to reach zones (e.g.

engines, industrial equipment).

It supplies two fiber optic controlled exchange contacts for a maximum load of 1 A, 50 V.

OSM303S withstands more than 200 V/m electromagnetic field strength from 10 kHz to 18 GHz and is designed to operate over an exceptionally wide environmental range without significant changes in performances.

It can work for over 8 hours and can be recharged in about 14 hours by means of the associated battery charger.

OSM304S - high power relays satellite

OSM304S supplies two fiber optic controlled normally open contacts for a maximum load of 30 A, 50 V.

OSM304S withstands more than 200 V/m electromagnetic field strength from 10 kHz to 18 GHz and is designed to operate over an exceptionally wide environmental range without significant changes in performances.

It uses an external power supply like a car battery.

OSM305S - linear actuation satellite

OSM305S supplies a fiber optic controlled linear actuator performing a linear shift in the two directions of a pole; the characteristics of the shift are:

- total shift: 150 mm at least
- max force: 10 kg
- actuation time: 10 s complete shift

OSM305S withstands more than 200 V/m electromagnetic field strength from 10 kHz to 18 GHz and is designed to operate over an exceptionally wide environmental range without significant changes in performances.

It can work for over 8 hours (0,5 hours of continuous work) and can be recharged in short time by means of the associated battery charger.

SYSTEM PARTS

- **OSM303P** two channel general purpose plug-in for AFOM-MF and IMAGE-MF
- **OSM304P** two channel ignition key and pedal dedicated plug-in for AFOM-MF and IMAGE-MF
- **OSM303S** two exchange low power relays satellite
- **CB4** dedicated battery charger
- **OSM304S** two normally open high power relays satellite
- **AL3** external power supply
- **OSM305S** linear actuator satellite
- **CB2** 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)

SYSTEM SPECIFICATION

OSM303P - general purpose controller

- SlotBus compatible (MOCS mainframes)
- controls OSM303S, OSM304S, OSM305S
- 2 different satellites control
- 2 actuations per satellite (fixed or momentary)
- manual or RS232/GPIB control of any function
- panel display of channels status and remote control
- optical connector: ST
- operating temperature: 0° - +50°C
- storage temperature: -20° - +70°C

OSM304P - ignition key and pedal controller

- SlotBus compatible (MOCS mainframes)
- controls OSM303S, OSM304S, OSM305S
- 2 different satellites control
- 2 actuations per satellite (fixed or momentary)
- manual or RS232/GPIB control of any function
- panel display of channels status and remote control
- optical connector: ST
- operating temperature: 0° - +50°C
- storage temperature: -20° - +70°C

OSM303S - low power relays satellite

- controllable from OSM303P or OSM304P
- 2 exchange relays, 1 A 50 V contacts
- optical connector: ST
- electrical connectors: 6 x 1 pole 2mm miniature sockets for plugs
- battery charger connector: LEMO 5 poles circular
- battery autonomy: 8 h
- battery recharge time: 16 hours
- operating temperature: 0 ÷ +50 °C
- storage temperature: -20 ÷ +70 °C
- dimensions: 122 x 79 x 30 mm (case only)
- weight: 330 g

OSM304S - high power relays satellite

- controllable from OSM303P or OSM304P
- 2 normally open relays, 30 A 50 V contacts
- optical connector: ST
- electrical connector: Type 5 HE301B / MIL C-26482
- external power connector: LEMO 2 poles polarized
- operating temperature: 0 ÷ +50 °C
- storage temperature: -20 ÷ +70 °C
- dimensions: 135 x 79 x 69 (case only)
- weight: 860 g

OSM305S - linear actuation satellite

- controllable from OSM303P or OSM304P
- total excursion: 150 mm
- maximum force: 10 kg
- total excursion time: 10 s
- end-of-range protections
- optical connector: ST
- battery charger connector: LEMO 5 poles circular
- battery autonomy: 8 h (duty 20%)
- battery recharge time: 2 hours
- operating temperature: 0 ÷ +50 °C
- storage temperature: -20 ÷ +70 °C
- dimensions: 443 x 113 x 72 (case only)
- weight: 2500 g