

OSM03 / 04 / 05

OPTICAL STIMULUS MODULES FOR SWITCHING AND ACTUATION



SYSTEM CHARACTERISTICS

- Two channels plug-ins for AFOM-MF mainframe
- Remote management via fiber optic link of low-power relays, high power relays, linear actuators
- Full manual and IEEE-488 management of all the functions
- Shielded to >200 V/m EM fields, 10 kHz to 18 GHz

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

GENERAL DESCRIPTION

The OSM03, OSM04 and OSM05 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 TESEO mainframes, indicated by the B suffix; one fiber optic per plug-in channel to send the commands; one or two shielded remote satellites, indicated by the S suffix, and eventually battery powered, in which case a dedicated battery charger is necessary.

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.

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 / IEEE-488 interface
- fixed/momentary switches for different actuations
- actuations status shown on the AFOM-MF plug-ins panels
- fiber optic links up to 200 m

The OSM03B plug-in is a general purpose module, allowing the control of: OSM03S satellite containing two 1 A 50 V relays, OSM04S satellite containing two 30A 50V relays, OSM05S satellite containing a linear actuator, and future OSM series.

The OSM04B 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 OSM04S and OSM05S satellites.

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SATELLITE UNITS

OSM03S - 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.

OSM03S 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.

OSM04S - high power relays satellite

OSM04S supplies two fiber optic controlled normally open contacts for a maximum load of 30 A, 50 V.

OSM04S 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.

OSM05S - linear actuation satellite

OSM05S 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

OSM05S 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

OSM03B two channel general purpose plug-in for AFOM-MF and IMAGE-MF

OSM04B two channel ignition key and pedal dedicated plug-in for AFOM-MF and IMAGE-MF

OSM03S two exchange low power relays satellite

CB4 dedicated battery charger

OSM04S two normally open high power relays satellite

AL3 external power supply

OSM05S 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

■ OSM03B - general purpose controller

- SlotBus compatible (AFOM-MF & IMAGE-MF)
- controls OSM03S, OSM04S, OSM05S
- 2 different satellites control
- 2 actuations per satellite (fixed or momentary)
- manual or IEEE-488 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

■ OSM04B - ignition key and pedal controller

- SlotBus compatible (AFOM-MF & IMAGE-MF)
- controls OSM03S, OSM04S, OSM05S
- 2 different satellites control
- 2 actuations per satellite (fixed or momentary)
- manual or IEEE-488 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

■ OSM03S - low power relays satellite

- controllable from OSM03B or OSM04B
- 2 exchange relays, 1 A 50 V contacts
- optical connector: ST
- electrical connectors: 6 x 1pole 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

■ OSM04S - high power relays satellite

- controllable from OSM03B or OSM04B
- 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

■ OSM05S - linear actuation satellite

- controllable from OSM03B or OSM04B
- 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



COMPETENT BODY
ACCREDITED LABORATORY



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