



DATA SHEET 04 | 2026

## EKINOPS PM OPS2D

### Dual Optical Protection Switch

#### KEY FEATURES & BENEFITS

- Card level and line level protection with 50 ms switch times
- Support for revertive, non-revertive, or manual switching modes
- Space saving design includes two independent OPS on a single blade
- Digital Diagnostic Monitoring (DDM) and management via SNMP or the Ekinops Craft Interface (EEM)
- Remote management through telnet or SSH

#### APPLICATIONS

- Datacenter interconnect
- Disaster recovery
- Business Ethernet services
- Metro and access rings

#### OVERVIEW

The EKINOPS PM OPS2D is a dual optical switch module for the Ekinops 360 family that provides 1+1 (50 ms) or "Optical UPSR/SNCP" protection capability either at the WDM line level or card level. Each Optical Protection Switch (OPS) operates independently of the other to allow protection for two separate line modules in a single card slot.

The PM OPS2D card is used in pairs, one at each end of the optical signal to be protected, and provides "bridge-and-select" protection functionality. At the head end of the signal to be protected, each OPS provides a "Bridge" capability. It accepts an input signal and replicates that signal across two fiber outputs, providing an exact copy.

On the other end of the signal to be protected, each corresponding OPS provides a "Select" capability. It receives the two outputs generated by the "Bridge" end OPS and "Selects" the one that is not currently in a loss of signal state. If neither is in a loss of signal state, the signal selected is dependent on the mode for which the OPS is programmed.

The EKINOPS PM OPS2D can be placed between a source optical signal and the Ekinops 360 transponders in order to provide card level protection as follows:

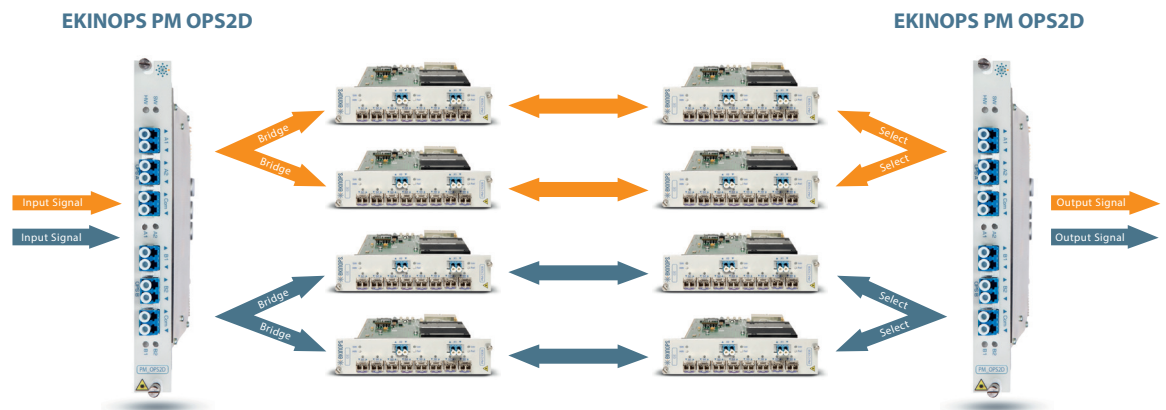


Figure 1: Using PM OPS2D for card level protection on dual input signals

➤ In figure 1, the input signals (*services*) are being replicated to two transponders each. Each transponder carries a duplicate of the input signal across the network so that if any one card/transponder fails, the service will still reach its destination.

The EKINOPS PM OPS2D can also be used to replicate and protect up to two composite WDM signals being transported by the Ekinops 360 system. In order to do this, one can place the PM OPS2D on the line output of one or two Ekinops 360 systems where it can receive the composite WDM signal(s) for replication.



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In figure 2, separate composite WDM signals are each replicated and carried across the network on separate fiber plant. The fibers over which the duplicate signals are run could be geographically diverse allowing for complete geographical redundancy.

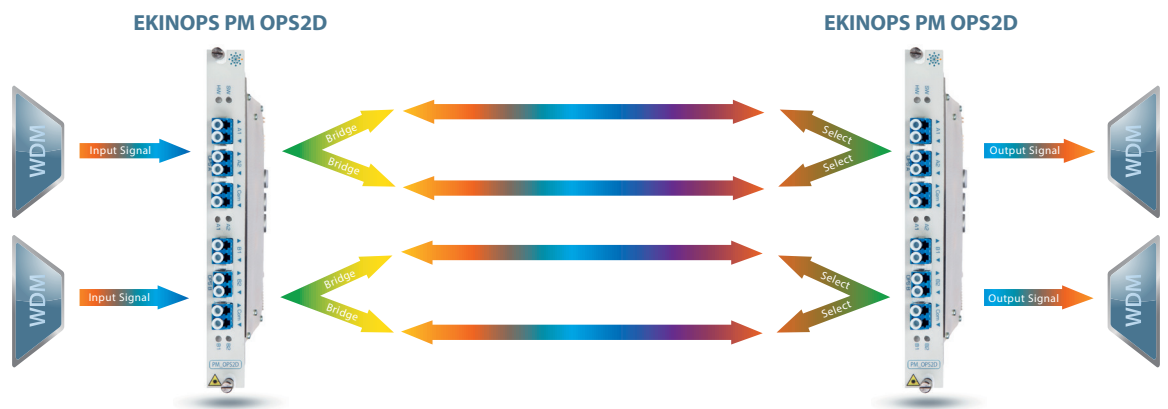


Figure 2: Using PM OPS2D for line protection on two composite signals

The EKINOPS PM OPS2D can be programmed to switch in 3 different modes:

1. In **Revertive mode**, the PM OPS2D will switch from a primary signal to a backup signal when the primary signal fails. Upon restoration of the primary signal, the PM OPS2D will switch back.
2. In **Non-Revertive mode**, neither signal is primary. The PM OPS2D will switch to the alternate signal when the signal it is using fails but will not revert to the original signal upon restoration. A failure of the new signal it is utilizing will however cause it to switch back to the original signal.
3. In **Manual mode**, no automatic switch will take place. The network operator must manually switch the PM OPS2D from one signal to the other.

## APPLICATIONS

The EKINOPS PM OPS2D can be used for any application that requires line level or card level protection. The PM OPS2D is rate agnostic so, when used for card level protection, it can accept any optical signal as an input for protection meaning that it can be used to protect any service type.

The PM OPS2D is designed for applications in which more than one input signal needs protection. This type of redundancy is particularly important for applications like disaster recovery, datacenter interconnect, and for carrier services where a high level of availability has been committed.

## MANAGEMENT

The EKINOPS PM OPS2D module can be managed through SNMP or via the Ekinops standard element level management interfaces, which include a Command Line Interface (CLI) and an Ekinops Graphical User Interface (GUI). The CLI is accessible via Secure Socket Shell (SSH) and Telnet remotely or via a local serial port on the management board.

Digital Diagnostics Management (DDM) is supported for optical interfaces. This includes link status, transmit (TX) and receive (RX) signal power monitoring, and operational temperature, as well as manufacturer and transceiver model information essential for inventory management.

The EKINOPS PM OPS2D module is also supported by **Celestis NMS**, the Ekinops advanced Network Management System.



## EKINOPS PM OPS2D

### Dual Optical Protection Switch

#### SPECIFICATIONS

##### • CLIENT INTERFACES

|                   |               |
|-------------------|---------------|
| Protocols         | Any           |
| Optical interface | Fixed Optical |

##### • LINE INTERFACE

|                   |               |
|-------------------|---------------|
| Protocol          | Any           |
| Optical interface | Fixed optical |

##### • MANAGEMENT

|                   |                                |
|-------------------|--------------------------------|
| MIB               | SNMP V2c / SNMP V3 Private MIB |
| Remode management | Via Telnet or SSH              |

##### • PHYSICAL SPECIFICATIONS

|                       |                                                                                                      |
|-----------------------|------------------------------------------------------------------------------------------------------|
| Module size           | 1 slot                                                                                               |
| Chassis compability   | C200HC (6 modules per chassis)<br>C600HC (20 modules per chassis)<br>C700HC (20 modules per chassis) |
| Operating temperature | 0°C to +50°C / +32°F to +122°F                                                                       |
| Storage temperature   | -20°C to +85°C / -4°F to +185°F                                                                      |

##### • INDICATORS

|        |                                                                 |
|--------|-----------------------------------------------------------------|
| Status | HW ready, SW ready                                              |
| Alarm  | Line selected, Loss detected   Line not selected, Loss detected |

#### ORDERING INFORMATION

##### PLUGGABLE MODULE (PM)

| PRODUCT CODE | DESCRIPTION                                                                                |
|--------------|--------------------------------------------------------------------------------------------|
| SFP OPS2D    | Dual optical protection switching module for 1+1 fiber protection, 1310nm or 1550nm client |

##### EKINOPS CHASSIS

|            |                                   |
|------------|-----------------------------------|
| C700HC     | High capacity modular chassis 7RU |
| C600HC     | High capacity modular chassis 7RU |
| C200HC     | High capacity modular chassis 2RU |
| PM_MNGT4-2 | Management card                   |
| 400EEM     | Ekinops Craft interface software  |

#### CONTACT



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