

DATACOM



DM4770

CARRIER ETHERNET SWITCH

INSTALLATION GUIDE

LEGAL NOTE

In spite the fact that all the precautions were taken in development of the present document, DATACOM shall not be held responsible for eventual errors or omissions as well as no obligation is assumed due to damages resulting from the use of the information included in this guide. The specifications provided in this guide shall be subject to changes with no prior notification and are not acknowledged as any type of contract.

© 2020 DATACOM - All rights reserved.

WARRANTY

DATACOM's products are covered by a warranty against manufacturing defects during a minimum period of 12 (twelve) months including the legal term of 90 days, as from the date of issue of the supply Nota Fiscal (Invoice).

Our warranty is standard counter warranty, this means, for exercise of the warranty, the customer should send the product to DATACOM Authorized Technical Assistance with paid freight. The return freight of the equipment will be DATACOM responsibility.

To obtain additional information, see our warranty policy in www.datacom.com.br/en/home

Telephone Number: **+55 51 3933-3094**



CONTACTS

TECHNICAL SUPPORT

Datacom has available a support portal - DmSupport, to help the customers in use and config of our equipment.

Access to the DmSupport can be made through link: <https://supportcenter.datacom.com.br>

In this site the following are available: firmwares, technical datasheets, config guide, MIBs and manuals for download. In addition, it allows opening of calls for assistance with our technical team.

Telephone Number: **+55 51 3933-3122**

We would like to highlight that our assistance through telephone support is available from Monday through Friday from 08:00 AM through 05:30 PM.

Important: For support assistance 24x7, please request a quotation to our sales department.

GENERAL INFORMATION

For any other additional information, please visit the www.datacom.com.br/en/home or call:

DATAKOM

Rua America, 1000

92990-000 – Eldorado do Sul – RS – Brazil

+55 51 3933-3000

PRODUCT DOCUMENTATION

ABOUT THIS DOCUMENT

This document is part of a set of documents prepared to provide all necessary information about DATACOM products.

SOFTWARE PLATFORM

- **QUICK CONFIGURATION GUIDE** – Provides instructions on how to set the functionalities in a quick manner in the equipment
- **TROUBLESHOOTING GUIDE** – Provides instructions on how to analyze, identify and solve problems with the product
- **COMMAND REFERENCE** – Provides all the commands related to the product
- **RELEASE NOTES** – Provides instructions on the new functionalities, identified defects and compatibilities between Software and Hardware

HARDWARE PLATFORM

- **DATASHEET** – Provides the product technical characteristics
- **INSTALLATION GUIDE** – Provides instructions on the procedures covering product installation

The availability of some documents can vary depending on the type of product.

Access <https://supportcenter.datacom.com.br/> to locate the related documents or contact the **Technical Support** for additional information.

CONTENTS

LEGAL NOTE.....	2
WARRANTY.....	2
CONTACTS.....	3
TECHNICAL SUPPORT	3
GENERAL INFORMATION.....	3
PRODUCT DOCUMENTATION	4
ABOUT THIS DOCUMENT.....	4
SOFTWARE PLATFORM	4
HARDWARE PLATFORM.....	4
CONTENTS.....	5
1 INTRODUCING THE HARDWARE INSTALLATION GUIDE.....	7
1.1 ABOUT THIS GUIDE	7
1.2 INTENDED AUDIENCE	7
1.3 CONVENTIONS.....	7
2 GETTING STARTED	9
2.1 SAFETY WARNINGS.....	9
3 HARDWARE DESCRIPTION	11
3.1 PRODUCT OVERVIEW	11
3.2 MODEL DM4770 32CX.....	12
3.3 MODEL DM4770 48VS+8CX.....	13
3.4 MODEL DM4770 16CX.....	15
3.5 EQUIPMENT STATUS LEDS.....	16
3.6 SERIAL CONSOLE INTERFACE (RS-232)	16
3.7 USB INTERFACE CONSOLE.....	17
3.8 USB INTERFACE HOST.....	17
3.9 ALARM INPUT AND OUTPUT	18
3.10 INTERFACE MANAGEMENT ETHERNET (MGMT)	18
3.11 DATA INTERFACE	19
3.12 PSUs AND POWER INPUTS	24

3.13	PROTECTIVE GROUNDING	28
4	DM4770 INSTALLATION.....	29
4.1	DM4770 PACKAGE CONTENT	29
4.2	IDENTIFYING THE PRODUCT	30
4.3	PREPARING THE INSTALLATION SITE.....	30
4.4	19-INCH RACK INSTALLATION	31
4.5	CONNECTING THE PROTECTIVE GROUNDING	33
4.6	VENTILATION.....	33
4.7	EQUIPMENT POWER SUPPLY	35
4.8	CHECKING THE PRODUCT'S OPERATION	36
5	INSTALLING AND REMOVING TRANSCEIVER MODULES.....	36
5.1	INSTALLING THE SFP28/SFP+/SFP MODULES.....	37
5.2	REMOVING SFP28/SFP+/SFP MODULES	38
5.3	INSTALLING THE QSFP28/QSFP+ MODULES	39
5.4	REMOVING QSFP28/QSFP+ MODULES.....	40
6	LOGGING IN FOR FIRST TIME.....	41
6.1	MANAGEMENT USING CONSOLE INTERFACE.....	41
6.2	MANAGEMENT USING ETHERNET INTERFACE	41
6.3	CONFIGURING USERS.....	42
6.4	CHANGING DEFAULT ADMINISTRATOR ACCOUNT PASSWORD	43
7	TECHNICAL SPECIFICATION.....	44
7.1	INTERFACES.....	44
7.2	POWER SUPPLY AND CONSUMPTION.....	44
7.3	PHYSICAL SPECIFICATIONS.....	45
7.4	ENVIRONMENT INFORMATION.....	45
8	STANDARDS AND REGULATIONS.....	47

1 INTRODUCING THE HARDWARE INSTALLATION GUIDE

1.1 ABOUT THIS GUIDE

This guide provides information about hardware specification and installation procedures from DM4770 carrier ethernet switch family. This document also covers initial configuration, those normally needed after hardware installation.

It is assumed that the individual or individuals managing any aspect of this product have basic understanding of Ethernet and Telecommunications networks.







1.2 INTENDED AUDIENCE


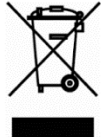
The DM4770 Installation Guide is intended for Network Administrators, technicians and other qualified service personnel responsible for installing, configuring, planning and maintaining the DM4770 switch.

1.3 CONVENTIONS

In order to improve the agreement, the following conventions are made throughout this guide:

1.3.1 Icons Convention

Icon	Type	Description
	Note	Notes give an explanation about some topic in the foregoing paragraph.
	Caution	This symbol means that this text is very important and, if the orientations were not correct followed, it may cause damage or hazard.
	Warning	This symbols means that, case the procedure was not correctly followed, may exist electrical shock risk.
	Warning	Represents LASER radiation. It is necessary to avoid eye and skin exposure.
	Warning	Indicates the presence of running FANs. Risk of minor injury or entanglement of items.
	Caution	Indicates that equipment, or a part is ESDS (Electrostatic Discharge Sensitive). It should not be handled without grounding antistatic wrist strap or equivalent.

	Warning	Non-ionizing radiation emission.
	Note	WEEE Directive Symbol (Applicable in the European Union and other European countries with separate collection systems). This symbol on the product or its packaging indicates that this product must not be disposed of with other waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your consumer waste equipment for recycling, please contact your local city recycling office or the dealer from whom you originally purchased the product.



A caution type notice calls attention to conditions that, if not avoided, may damage or destroy hardware or software.



A warning type notice calls attention to conditions that, if not avoided, could result in death or serious injury.

2 GETTING STARTED

2.1 SAFETY WARNINGS

Before to continue, read carefully the following safety warnings:



Prior to installation carefully read the whole guide.



Pay attention to the safety instructions during installation, operation or maintenance of this product. Installation, adjustments or maintenance must be performed only by qualified, trained and authorized personnel.



To prevent the risk of electrical shocks, before turning the equipment on or connecting an interface card or cable, install the protective grounding system.



Before connecting any cable to the equipment, make sure that the grounding system is functional.



Optical Transceivers used in DM4770 have invisible LASER emitting. Although all DATACOM homologated transceivers and most of the market transceivers comply with LASER safety standards, avoid direct contact and exposure to eyes and skin.



The optical modules use invisible radiation laser transmitters. Although most SFP/SFP+/SFP28/QSFP+/QSFP28 on the market meet LASER safety specifications, never look directly at the terminals of a module or an optical cord. Exposure to laser emissions may cause partial or total loss of vision.



Before connecting any cable to the equipment, make sure that the rack power supply is not overloaded.



The DM4770 FAN modules are hot-swappable. In an event of maintenance, pay special attention keeping body parts away of FAN blades, avoiding injuries.



The DM4770 FAN modules are hot-swappable. Under normal operation, the FAN blades are protected. In an event of maintenance, it is necessary to pay special attention to fingers, jewellery, clothing, hair, etc that can entanglement with FAN rotating blades.

3 HARDWARE DESCRIPTION

This chapter describes the DM4770 line hardware features.

3.1 PRODUCT OVERVIEW

The DM4770 line has one product version as illustrated below:

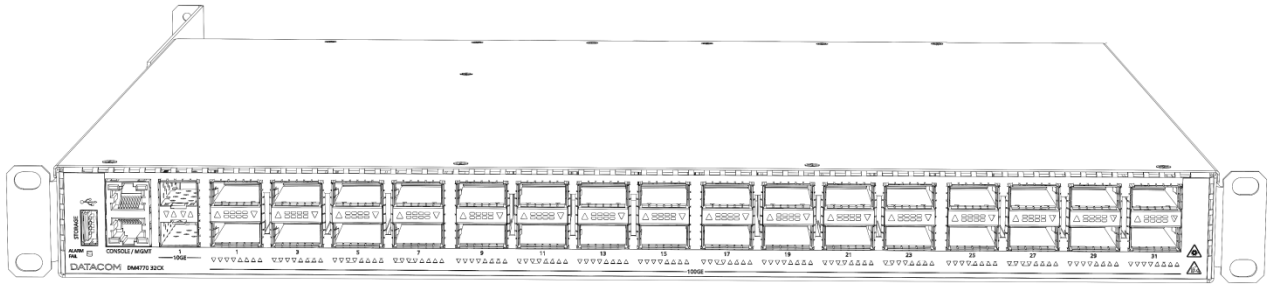


Figure 1 - DM4770 32CX

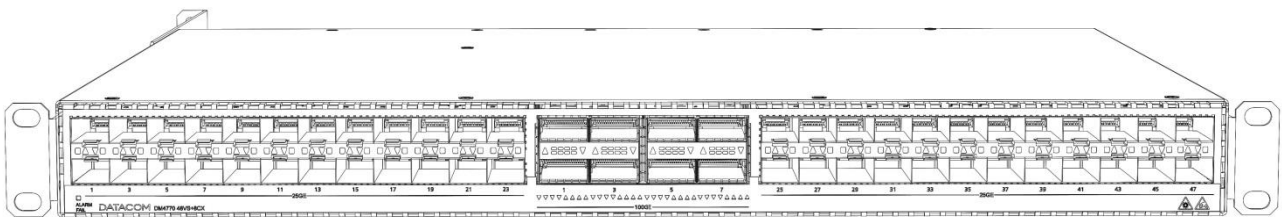


Figure 2 - DM4770 48VS+8CX

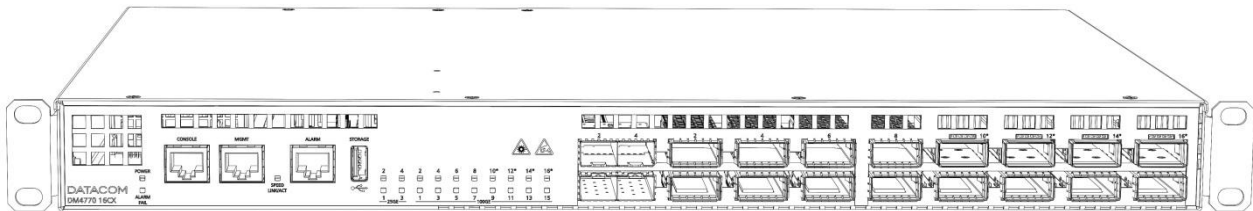


Figure 3 - DM4770 16CX

3.2 MODEL DM4770 32CX

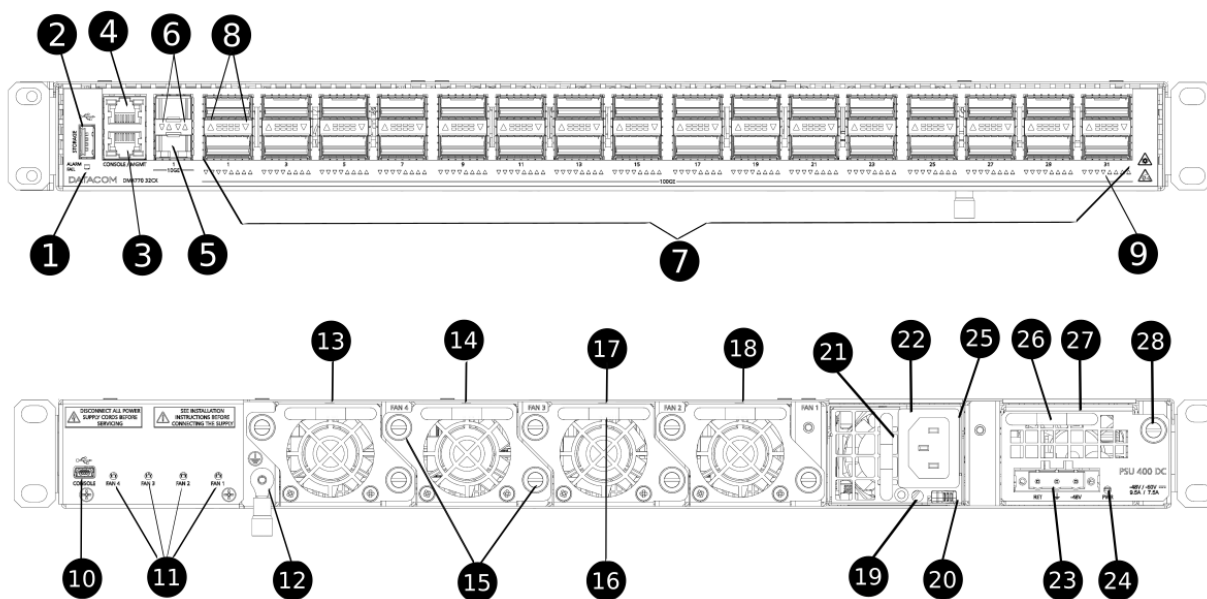


Figure 4 - DM4770 32CX Views

Description	
1	System ALARM/FAIL LED
2	USB Host port
3	RS-232 console port
4	Ethernet Management Port
5	10GE Ethernet ports
6	10GE Ethernet port LEDs
7	40/100GE Ethernet ports
8	40/100GE Ethernet port LEDs
9	Port LEDs used for Breakout Cables
10	USB Console port
11	FAN status LEDs
12	Auxiliary safety grounding
13	FAN 4 SLOT
14	FAN 3 SLOT
15	FAN knurled nuts
16	FAN handle
17	FAN 2 SLOT

18	FAN 1 SLOT
19	PSU AC status LED
20	PSU AC insertion and removal latch
21	PSU AC handle
22	PSU 2 SLOT
23	PSU DC power input
24	PSU DC status LED
25	PSU AC power input
26	PSU DC handle
27	PSU 1 SLOT
28	PSU DC Knurled nut

Table 1 – DM4770 32CX Interface Description

3.3 MODEL DM4770 48VS+8CX

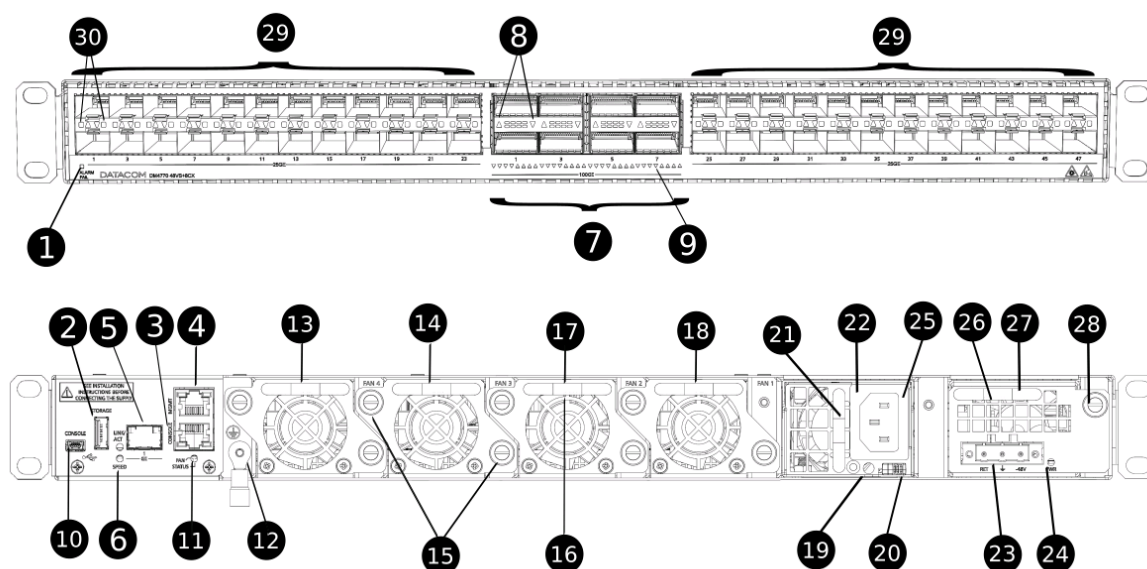


Figure 5 - DM4770 48VS+8CX Views

Description	
1	System ALARM/FAIL LED
2	USB Host port
3	RS-232 console port
4	Ethernet Management Port
5	1GE Ethernet port
6	1GE Ethernet port LEDs
7	40/100GE Ethernet ports

8	40/100GE Ethernet port LEDs
9	LEDs for Breakout Cables
10	USB Console port
11	FAN status LEDs
12	Auxiliary safety grounding
13	FAN 4 SLOT
14	FAN 3 SLOT
15	FAN knurled nuts
16	FAN handle
17	FAN 2 SLOT
18	FAN 1 SLOT
19	PSU AC status LED
20	PSU AC insertion and removal latch
21	PSU AC handle
22	PSU 2 SLOT
23	PSU DC power input
24	PSU DC status LED
25	PSU AC power input
26	PSU DC handle
27	PSU 1 SLOT
28	PSU DC Knurled nut
29	10/25GE Ethernet ports
30	10/25GE Ethernet port LEDs

Table 2 – DM4770 48VS+8CX Interface Description

3.4 MODEL DM4770 16CX

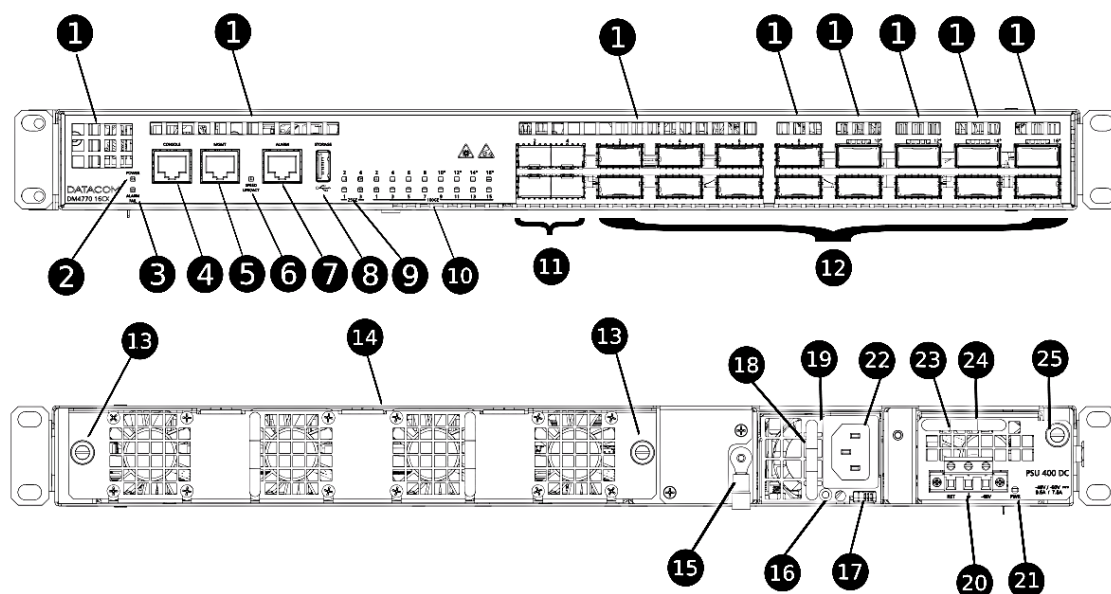


Figure 6 - DM4770 16CX Views

Description	
1	System Air Inlets
2	System Power LED
3	System ALARM/FAIL LED
4	RS-232 console port
5	Ethernet Management Port
6	Ethernet Management Port Status LED
7	Alarm Input/Output Port
8	USB Host port
9	10/25GE Ethernet port LEDs
10	40/100GE Ethernet port LEDs
11	10/25GE Ethernet port
12	40/100GE Ethernet port
13	FAN tray Knurled nut
14	FAN tray model FAN 1U-F-4x28
15	Auxiliary safety grounding
16	PSU AC status LED
17	PSU AC insertion and removal latch
18	PSU AC handle

19	PSU 2 SLOT
20	PSU DC power input
21	PSU DC status LED
22	PSU AC power input
23	PSU DC handle
24	PSU 1 SLOT
25	PSU DC Knurled nut

Table 3 – DM4770 16CX Interface Description

3.5 EQUIPMENT STATUS LEDS

The DM4770 family has two statuses LEDs. In the front panel, the LED ALARM/FAIL and the LED PWR located in each PSU. The model DM4770 16CX has an additional Power LED located at front panel.

The table below describes the behavior of the status LEDs of the equipment.

LED PWR	PSU DC <ul style="list-style-type: none"> ON GREEN: Indicates that the power supply is running and that the equipment is powered or on standby ready to take over the load. OFF: Power supply with problems or not powered. PSU AC <ul style="list-style-type: none"> ON GREEN: Indicates that the power supply is running and the equipment is powered or on standby ready to take over the load. ON AMBER: Indicates that the power supply is powered, but is disconnected from the HW or on standby. OFF: Power supply with problems or not powered.
LED ALARM/FAIL	<ul style="list-style-type: none"> OFF: Equipment operating normally, without detected failures or alarms. ON RED: Indicates that the equipment is in a state of internal failure. ON BLINKING RED (slow): Indicates that the equipment is in a lower gravity alarm state. ON BLINKING RED (fast): Indicates that the equipment is in a lower gravity alarm state. <p>When the power is connected to the equipment, this LED will turn red for a short time, and then will turn off.</p>
LED Power (16CX only)	<ul style="list-style-type: none"> ON: Indicates that the equipment is correctly powered. OFF: Indicates that the equipment is not powered.

Table 4 - Status LEDs behavior

3.6 SERIAL CONSOLE INTERFACE (RS-232)

The DM4770 equipment line has a console port for local management. The console port uses an RJ45 connector. A cable with a male RJ45 connector and a female DB9 connector must be used for the connection to a computer or laptop.

The serial console cable is an accessory included in the DM4770. Additional cables can be purchased separately via code 710.0137.xx or assembled as described in the following figures. The pin assignment of the RJ45 connector and its match with the DB9 connector is described in table 5.



Figure 7 – Console Cable

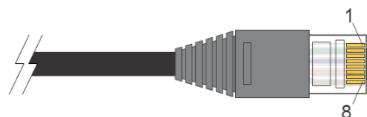


Figure 8 - Console interface connector pin assignment

RJ45 Male	DB9 Female	Function	DM4770 Input/output
1	-	Reserved	-
2	-	Reserved	-
3	2	RS232_TX	Output
4	5	DGND	Ground
5	5	DGND	Ground
6	3	RS232_RX	Input
7	-	Reserved	-
8	-	Reserved	-

Table 5 - Console interface connector pin assignment

3.7 USB INTERFACE CONSOLE

For management via USB, the DM4770 has a USB console port located on the rear panel on DM4770 48VS+8CX and front panel at DM4770 32CX. It is accessible via Mini-USB cable (not included). The DM4770 16CX do not have this interface.

The driver for use of this interface in Windows can be found in <http://www.datacom.com.br/support>.

3.8 USB INTERFACE HOST

The DM4770 models provides a type A USB interface host port. The USB port on DM4770 32CX and DM4770 16CX is located at the front panel and DM4770 48VS+8CX in the rear panel. It operates according to specification 2.0. There is no need to use this interface during the switch's installation process. Contact [Technical Support](#) for more information on using this interface.

3.9 ALARM INPUT AND OUTPUT

The DM4770 16CX has two alarm inputs and one alarm output in an RJ45 connector. Alarm 1 and 2 inputs are isolated via optocoupler. External alarm detection occurs when the voltage difference between IN+ and IN- reaches 12V. The Table 6 presents the voltages and status for alarm 1 and 2 inputs.

Signal IN-	Signal IN+	Description
0V (Reference)	0V to 3V	No alarm
0V (Reference)	12V to 60V	Alarm

Table 6 – Conditions for alarm detection

For alarm output, the equipment uses a relay. In an alarm situation¹ or when the switch is off, pin 7 (common) is short circuited with pin 8 (NF). When operating without alarms, pin 7 (common) will be short circuited with pin 6 (NA), while pin 8 (NF) will be isolated. The table below describes the pin settings used in connector RJ45 of the alarm interface.

RJ45 Male	Signal
1	Input 1 – IN+
2	Input 1 – IN-
3	Input 2 – IN+
4	Input 2 – IN-
5	Not connected
6	Output – NA (Alarm Off)
7	Output – Common
8	Output – NF (Alarm On)

Table 7 - Alarm pin connector

The DM4770 48VS+8CX model and the DM4770 32CX model do not have alarm ports.

3.10 INTERFACE MANAGEMENT ETHERNET (MGMT)

The DM4770 family has a Gigabit Ethernet interface used for local or remote management of the switch. For details on how to use it, see the chapter [Logging in for First Time](#).

This interface, at models DM4770 48VS+8CX and model DM4770 32CX, has two status LEDs whose behavior is described at table 8. The model DM4770 16CX has one LED only for this interface, whose behavior is described at table 9.

¹ Roadmap feature, contact [Technical Support](#) if you have any questions.

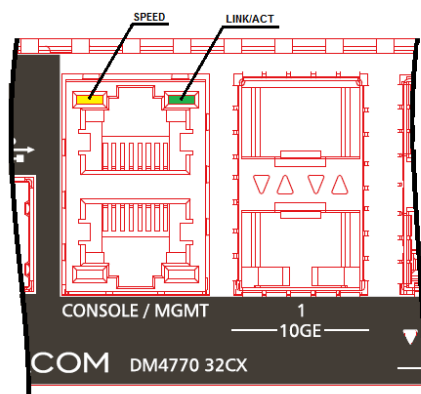


Figure 9 - MGMT LEDs (DM4770 48VS+8CX and DM4770 32CX)

Indicator	Color	Status	Description
LINK/ACT	GREEN	Off	Link Down (inactive port)
		On	Link Up (active port)
		Blinking	Data sending and/or receiving activity
SPEED	YELLOW	Off	Port operating at 1000Base-T mode
		On	Port operating at 10Base-T or 100Base-TX

Table 8 – MGMT Interface LEDs (DM4770 32CX and DM4770 48VS+8CX)

Indicator	Color	Status	Description
SPEED LINK/ACT	N/A	Off	Link Down (inactive port)
	GREEN	On	Link UP, Port operating at 1000Base-T mode
		Blinking	Data sending and/or receiving activity
	YELLOW	On	Link UP, Port operating at 100Base-TX or 10Base-T modes
		Blinking	Data sending and/or receiving activity

Table 9 – MGMT Interface LEDs (DM4770 16CX)

3.11 DATA INTERFACE

3.11.1 25 Gigabit Ethernet optical SFP28 (25GBase-X) Interfaces

The DM4770 48VS+8CX has 48 25 Gigabit Optical Ethernet interfaces using an SFP28 connector while DM4770 16CX has four SFP28 ports.

At DM4770 48VS+8CX the LINK/ACT and SPEED indicator LEDs are built into the connectors. The ports are identified by the numbers printed on the front panel, however, only odd ports (bottom ports) are numbered. The numbering of the other ports follows the order according the figure below:

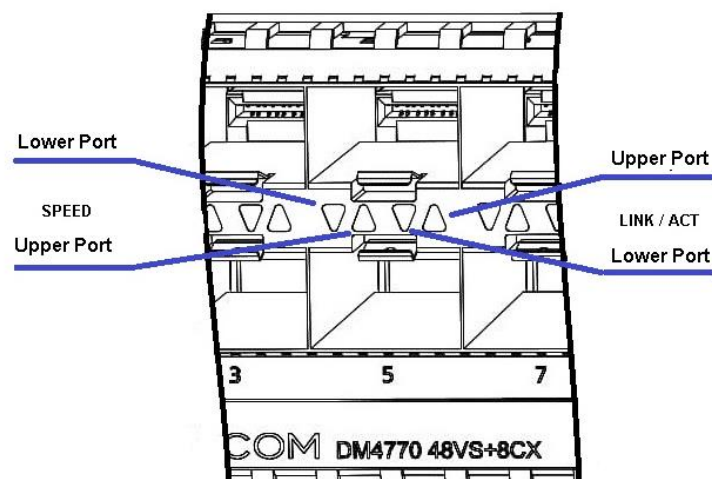


Figure 10 - 25GbE SFP28 Ports LEDs (DM4770 48VS+8CX)

At DM4770 16CX the SPEED/LINK/ACT LED indicator is located at the left side of the ports in the middle of the equipment. The ports are identified by the numbers printed on the front panel, however, only even ports (top ports) are numbered. The LED port numbering is complete according the figure below:

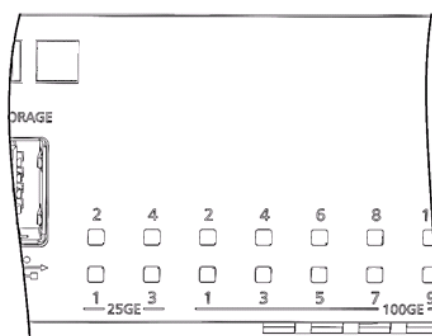


Figure 11 - 25GbE SFP28 Ports LEDs (DM4770 16CX)

3.11.1.1 Interface LED indicators 25 Gigabit Optical Ethernet

The convention to indicate the operation and mode of operation of the 25GbE SFP28 interfaces at DM4770 48VS+8CX are described in the table below:

Indicator	Color	Status	Description
LINK/ACT	GREEN	Off	Link Down (inactive port)
		On	Link Up (active port)
		Blinking	Data sending and/or receiving activity
SPEED	YELLOW	Off	Port operating at 25GBase-X mode
		On	Port operating at a rate lower than 25Gbps

Table 10 - Indicator LEDs of 25GbE SFP28 interfaces (DM4770 48VS+8CX)

The convention to indicate the operation and mode of operation of the 25GbE SFP28 interfaces at DM4770 16CX are described in the table below:

Indicator	Color	Status	Description
SPEED LINK/ACT	N/A	Off	Link Down (inactive port)
	GREEN	On	Link Up. Port operating at 25GBase-X mode
		Blinking	Data sending and/or receiving activity
	YELLOW	On	Link UP. Port operating at a rate lower than 25Gbps
		Blinking	Data sending and/or receiving activity

Table 11 - Indicator LEDs of 25GbE SFP28 interfaces (DM4770 16CX)

3.11.2 10 Gigabit Ethernet optical SFP+ (10GBase-X) Interfaces

The DM4770 32CX has 2 10 Gigabit Optical Ethernet interfaces using an SFP+ connector. There are LINK/ACT and SPEED indicator LEDs that are built into the connectors corresponding to each. The ports are identified by the numbers printed on the front panel, however, only odd ports (lower ports) are numbered. The numbering of the other ports follows the order according the figure below:

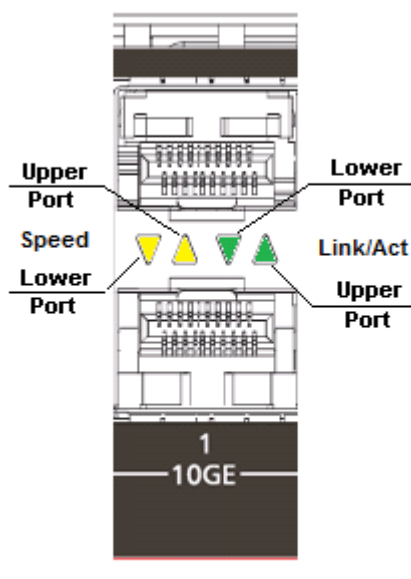


Figure 12 - 10GbE SFP+ Ports LEDs

3.11.2.1 Interface LED indicators 10 Gigabit Optical Ethernet

The convention to indicate the operation and mode of operation of the 10GbE SFP+ interfaces is described in the table below:

Indicator	Color	Status	Description
LINK/ACT	GREEN	Off	Link Down (inactive port)

		On	Link Up (active port)
		Blinking	Data sending and/or receiving activity
SPEED	YELLOW	Off	Port operating in 10GBase-X or 10GBase-T mode
		On	Port operating at a rate lower than 10Gbps

Table 12 - Indicator LEDs of 10GbE SFP+ interfaces

3.11.3 1 Gigabit Ethernet optical SFP (1000Base-X) Interface

The DM4770 48VS+8CX has one 1 Gigabit Optical Ethernet interfaces using an SFP connector:

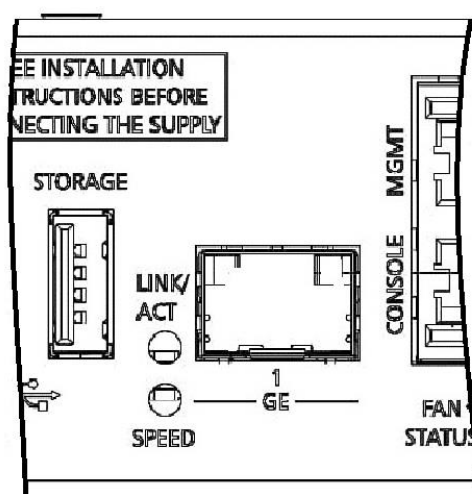


Figure 13 - 1GbE SFP Ports LEDs

3.11.3.1 Interface LED indicators 10 Gigabit Optical Ethernet

The convention to indicate the operation and mode of operation of the 1GbE SFP interfaces is described in the table below:

Indicator	Color	Status	Description
LINK/ACT	GREEN	Off	Link Down (inactive port)
		On	Link Up (active port)
		Blinking	Data sending and/or receiving activity
SPEED	YELLOW	Off	Port operating in 1000Base-X or 1000Base-T mode
		On	Port operating at a rate lower than 1Gbps

Table 13 - Indicator LEDs of 1GbE SFP interfaces

3.11.4 40 and 100 Gigabit Optical Ethernet Interfaces

All DM4770 Models have QSFP28 interfaces supporting 40Gbps or 100Gbps data rate.

Model	40/100Gbps Ports
DM4770 32CX	32
DM4770 48VS+8CX	8
DM4770 16CX	16

Table 14 – 40/100GBE Ports at DM4770 Family

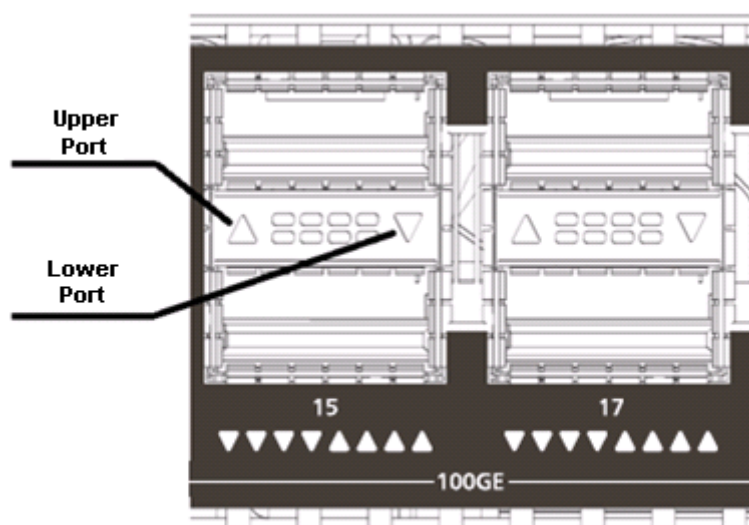


Figure 14 - 40Gbps and 100Gbps uplink ports

3.11.4.1 40 and 100 Gigabit Optical Ethernet interface LED indicators

The 40GE and 100GE ports of DM4770 32CX and DM4770 48VS+8CX have LED indicators of the port operation integrated to the equipment's port connectors as shown in figure 14. The 40GE and 100GE ports of DM4770 16CX have LED indicators of the port operation located at the left side of the equipment port connectors as shown in figure 11. The convention to indicate the operation and 40GE and 100GE interface operation mode is described in the table below:

Indicator	Color	Status	Description
LINK/ACT/SPEED	GREEN	On	Link Up (active port) operating in 100GBase-X mode.
	YELLOW	On	Link Up (active port) operating at a rate lower than 100Gbps.
	GREEN or YELLOW	Blinking	Data sending and/or receiving activity

	-	Off	Link Down (inactive port)
--	---	-----	---------------------------

Table 15 - 40GE and 100GE interface LED indicators

3.11.5 40GE and 100GE Optical interfaces at QSFP-DD format

The DM4770 16CX model has 4 special 100GBE interfaces that enable the use of QSFP-DD 100GBE transceivers. Those interfaces have advanced cooling functionalities and are ideal for using QSFP28 transceivers that require power over the 5 Watts standard limit and are fully compatible to QSFP-DD 100GBE up to 15 Watts power consumption, enabling the use of Coherent Transceivers in the platform.

Those special interfaces are identified with an “*” at the front panel port numbering (ports 10, 12, 14 and 16).

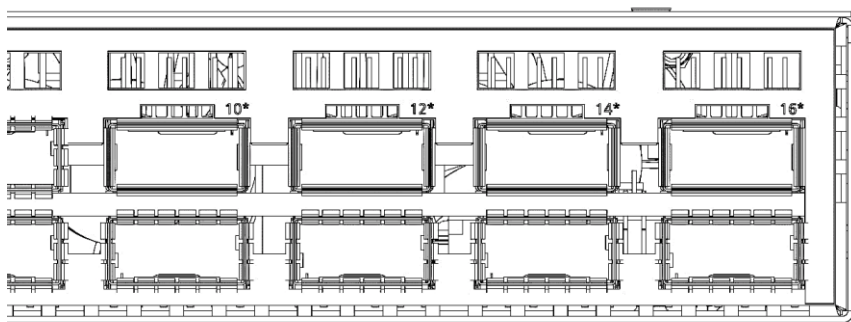


Figure 15 – Interface Location 10, 12, 14 and 16 (QSFP-DD 100GBE)

3.12 PSUs AND POWER INPUTS

The equipments of the DM4770 line has two slots for the PSU 400/600 power supply (supplied separately).

The DM4770 family has two PSU models as shown in the table below:

PSU Model	Input Power Supply	Cooling direction
PSU 400 AC-F	100/240Vac (50/60Hz).	Exiting the PSU panel
PSU 600 AC-F	100/240Vac (50/60Hz).	Exiting the PSU panel
PSU 400 DC-F	-48 / 60 Vdc	Exiting the PSU panel
PSU 600 DC-F	-48 / 60 Vdc	Exiting the PSU panel

Table 16 – Description of PSU 400/600 power supplies

Due to power consumption by DM4770 models, there are restrictions of PSU model usage for each product, follow the table below for correct PSU selection:

Model	PSU AC	PSU DC
DM4770 16CX	PSU 400 AC PSU 600 AC	PSU 400 DC PSU 600 DC
DM4770 32CX	PSU 600 AC	PSU 600 DC
DM4770 48VS+8CX	PSU 600 AC	PSU 600 DC

Table 17 – PSU Models for DM4770 Family

The DM4770 16CX model supports PSU400 and PSU600 supplies. The DM4770 32CX and DM4770 48VS+8CX supports only PSU 600 Models due to its maximum power consumption.

The PSU DC has TERMINAL BLOCK power terminals.

The PSU AC has three-pin IEC 320/C14 plug power terminals.

The PSU 400/600 power supplies operate in a 1:1 redundancy manner, with only one being sufficient to maintain full operation of the equipment. The combination of AC and DC power supplies in the same equipment is allowed. The insertion/removal of power cables and the PSUs can be hot-swapped, allowing the uninterrupted operation of the equipment, if one of the two power supplies is turned off or presents failures. The PSU 400/600 has a PWR LED on its front panel that, when **GREEN**, indicates that it is correctly powered and operational.

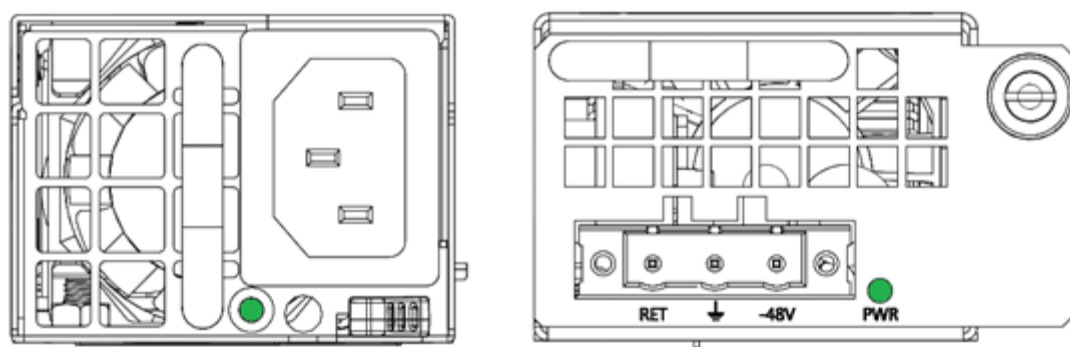


Figure 16 - PSU AC and PSU DC front panel



The equipment is de-energized through its power cable (s). The power outlet must be nearby and easily accessible.



The electrical installation of the site should be protected by devices against short circuits.



Connect the AC PSU only to a sine wave voltage power source. In the case of using a non-sine wave voltage power source (square wave or pseudo-sinusoidal wave voltage), intermittent operation, product reboot and permanent product damage may occur.



In the situation in which both PSUs are present and the power inputs are energized and operating with voltages within the specified range, the AC power inputs will take precedence over the DC power input, regardless of the connected slot.



In the situation in which both DC PSUs are present and the power inputs are energized and operating with voltages within the specified range, PSU 1 will be supplying power to the equipment and PSU 2 will be on standby.

3.12.1 Pinout and Polarity

3.12.1.1 PSU 400/600 AC

The figure below presents the IEC 320/C14 connector pinout for the equipment's power supply.

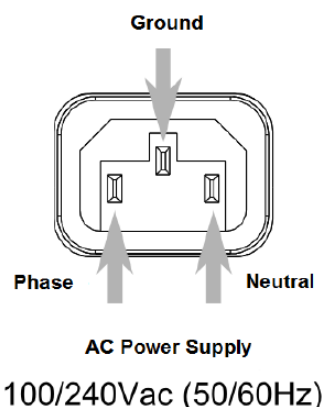


Figure 17 – AC Power Connector Pinout



According to the NBR 14136 standard, the grounding pin of the product must be connected to the grounding installations of the installation site, since the power pins have no polarity indication.

3.12.1.2 PSU 400/600 DC

The figure below shows the pin settings of the TERMINAL BLOCK connector to power the switch.

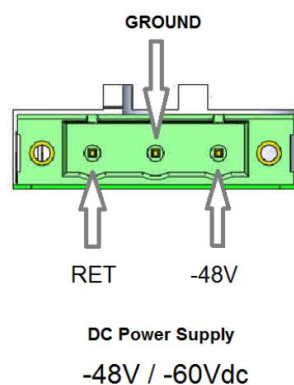


Figure 18 - DC Power Connector Pinout Settings

3.12.2 Power Cables

3.12.2.1 PSU 400/600 AC

The PSU AC includes a 3-meter power cord in the standard female IEC 320/C14 for the NBR 14136 plug.

3.12.2.1 PSU 400 DC

The PSU 400 DC require a power cable with 1.5 mm² gauge standard (not included in package) and the TERMINAL BLOCK standard male connector (normally shipped screwed to the PSU 400 DC) for the installation of the cable.

3.12.2.2 PSU 600 DC

The PSU 600 DC require a power cable with 2.5 mm² gauge standard (not included in package) and the TERMINAL BLOCK standard male connector (normally shipped screwed to the PSU 600 DC) for the installation of the cable.

Follow the information below to install the cable to the Terminal Block connector:

Step 1	<ul style="list-style-type: none">Remove the TERMINAL BLOCK connector from the PSU 400/600 DC by unscrewing the two side screws of the connector using a 1/8" screwdriver (number 0) as shown below:
--------	--

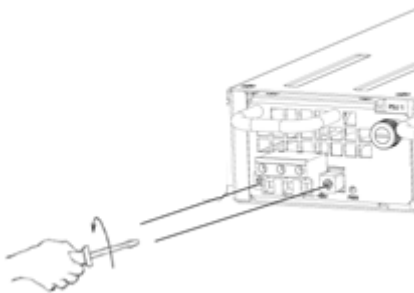
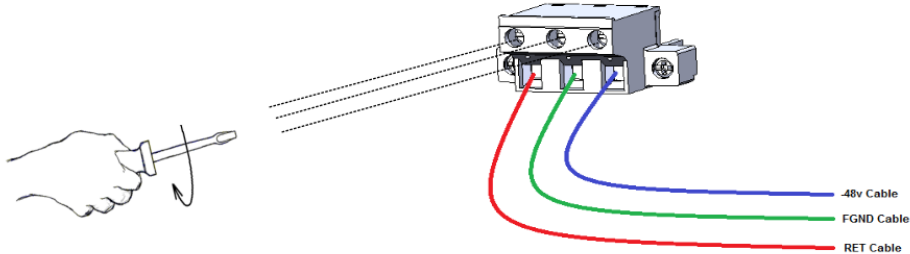
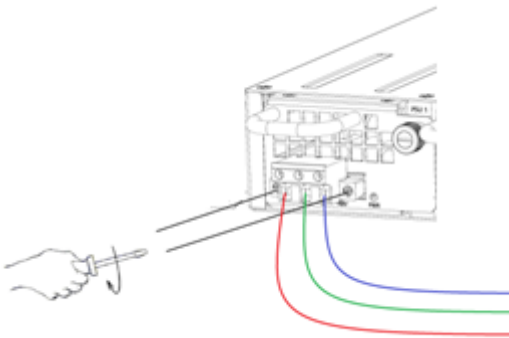
	 <p>Figure 19 – Removing the TERMINAL BLOCK from the PSU 400/600 DC</p>
Step 2	<ul style="list-style-type: none"> Locate the power cord cut it to the desired preferred length, it is important that it have a gauge of 2.5mm² or higher (PSU600) or a gauge of 1.5mm² or higher (PSU400), and that the conductor colors follow the specifications of the country where it is installed.
Step 3	<ul style="list-style-type: none"> Using the same 1/8" screwdriver (number 0) used above, as shown below:  <p>Figure 20 – Installing the cable mounted to the TERMINAL BLOCK</p>
Step 4	<ul style="list-style-type: none"> Before the cable is powered, screw the connector with the cable installed on the PSU 400/600 DC, using the same 1/8" screwdriver (number 0) used above, as shown below:  <p>Figure 21 – Installing the cable mounted to the TERMINAL BLOCK on the PSU 400/600 DC</p>

Table 18 – Installing the PSU 400/600 DC power supply

3.13 PROTECTIVE GROUNDING

The DM4770 equipment has a Protective Ground point on the rear panel. This Ground point can be used to fix a ring connector to the installation ground (FGND) as instructed in the [DM4770Installation](#) chapter.

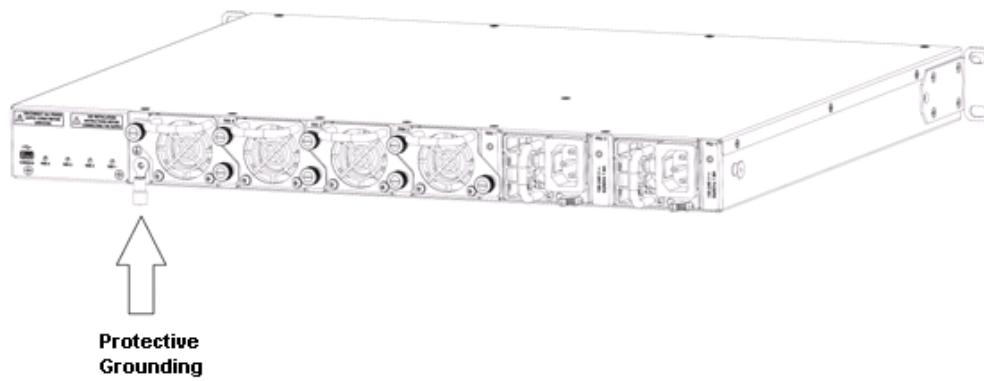


Figure 22 – Protective Grounding DM4770

4 DM4770 INSTALLATION

This chapter explains the procedures, recommendations, and attention related to installing the DM4770.

4.1 DM4770 PACKAGE CONTENT

The DM4770 32CX and DM4770 48VS+8CX package contains the following items:

- DM4770 equipment
- RS-232 console cable
- Quick Installation Guide
- Extension rail to secure it in the rear of the Rack

The DM4770 16CX package contains the following items:

- DM4770 equipment
- RS-232 console cable
- Quick Installation Guide
- FAN 1U-F-4x28

Check if the equipment or accessories aren't damaged. If there's any irregularity, contact [Technical Support](#).

The PSU 400/600 power supplies can be shipped already connected to the equipment or in separate boxes, depending on the order.

The cooling module of DM4770 16CX model is shipped together and connected to the equipment.

The cooling modules for DM4770 32CX and DM4770 48VS+8CX models are sold separately, but can be shipped already connected to the equipment or in separate boxes, depending on the order.

4.2 IDENTIFYING THE PRODUCT

Make sure that the product received matches the figures in this guide. The DM4770 has an identification label. It contains model information, product code and serial number. Check if there is any divergent information on the label regarding the information on the packaging.

4.3 PREPARING THE INSTALLATION SITE

Before installing the product, some care must be taken to guarantee that all steps can be followed correctly, thus ensuring proper installation.

4.3.1 Installation Site Requirements

Verify that the electrical and physical installations of the site where the product will be installed are in accordance with all specifications and technical standards applicable by the local governmental authority.

The site building needs to be prepared to withstand the mechanical and electrical loads of the new equipment to be installed. Read the [Technical Specification](#) to check the relevant product weight and consumption information.



Make sure the rack's power supply isn't overloaded.

4.3.1.1 Environment requirements

Electrical equipment can generate significant heat. Thus, it is essential to provide a temperature-controlled environment to ensure proper and safe operation.

In addition to temperature control, it is necessary to observe that the product operates only in places with controlled humidity. In addition, the environment must be free of materials or gases capable of conducting electricity.

4.3.1.2 Equipment requirements

To ensure correct operation, when installing the DM4770, observe the information available in the [DM4770 Installation](#) section.

4.4 19-INCH RACK INSTALLATION

The DM4770 was designed to be installed to 19-inch racks, occupying only 1U in height. To choose the suitable installation site, pay attention to the following items:

- Choose an easily accessible location where your LEDs can be viewed;
- The temperature should be between operation temperature specification and the relative air humidity should be between 10% and 90% non-condensed;
- Install the equipment near a power supply.

After choosing the appropriate location, bring the equipment to the rack and insert two standard M5 screws (not shipped with the product) into each side of the adapter to secure the assembly to the cage nuts on the rack (not shipped with the product). Finally, tighten the screws so as to guarantee that the equipment is securely attached to the rack.

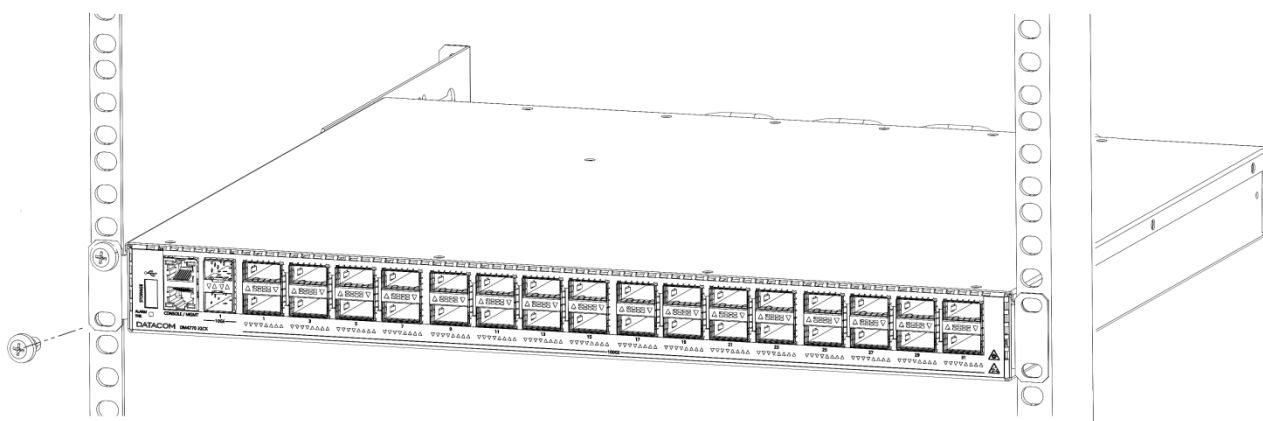
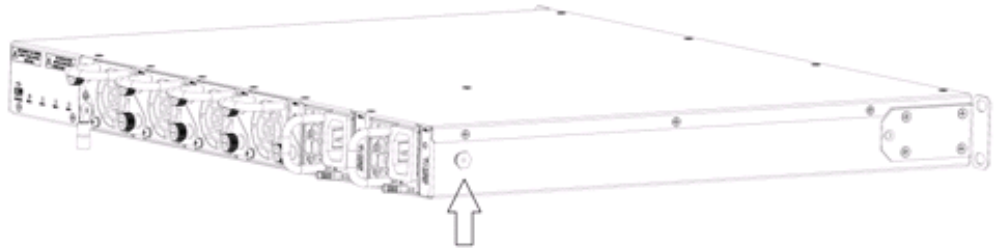


Figure 23 – Installation of the DM4770 on a 19-inch Rack

Due to the size and weight of the equipment, the DM4770 32CX and DM4770 48VS+8CX have an extension rail to fix the equipment in the rear rack panel. For extension rail Installation, follow the below steps:

<p>Step 1</p>	<ul style="list-style-type: none"> ▪ Locate the rail guide pin on the left side of the equipment:  <p style="text-align: center;">Guide Pin of the Extension Rail</p> <p style="text-align: center;">Figure 24 – Guide Pin of the Extension Rail</p>
<p>Step 2</p>	<ul style="list-style-type: none"> ▪ Position the Extension Rail over the guide pin as shown in the figure below:

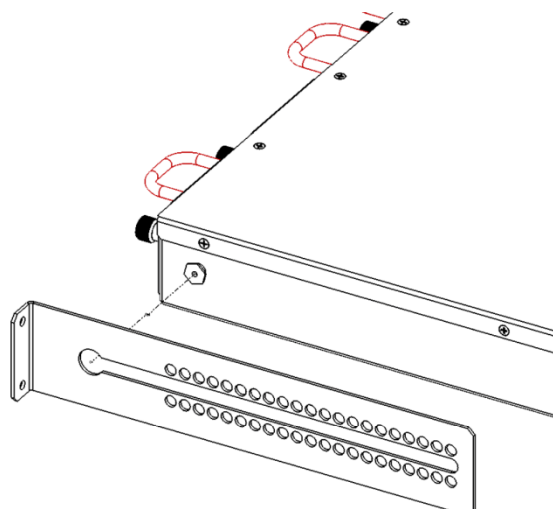


Figure 25 – Positioning the Extension Rail

Step 3

- Slide the Extension Rail to the left positioning it according to the size of the rack

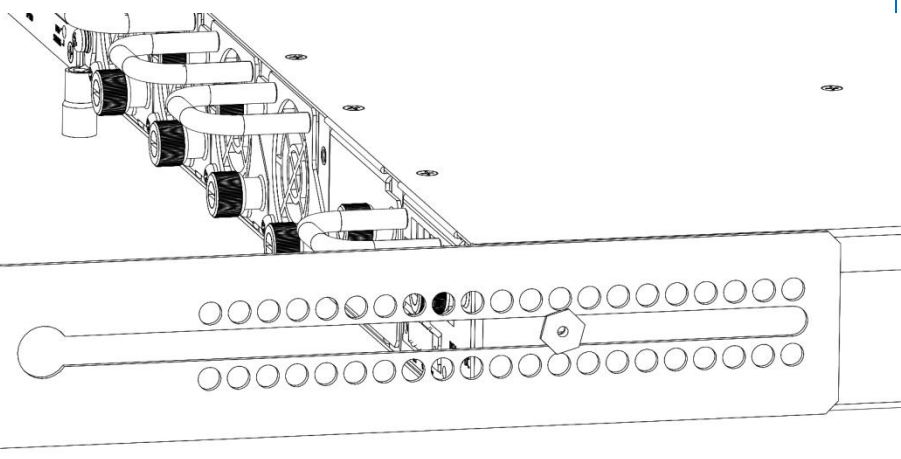


Figure 26 – Positioning the rail according to the size of the rack

Step 4

- Proceed with securing the equipment on the front part of the rack and slide the rear securing rail until it touches the back of the rack, the rail is positioned at the back part, since the rail is threaded, there's no need to use cage nuts as is required in the front. Finally, insert two standard M5 screws (not shipped with the product) to secure the rail.

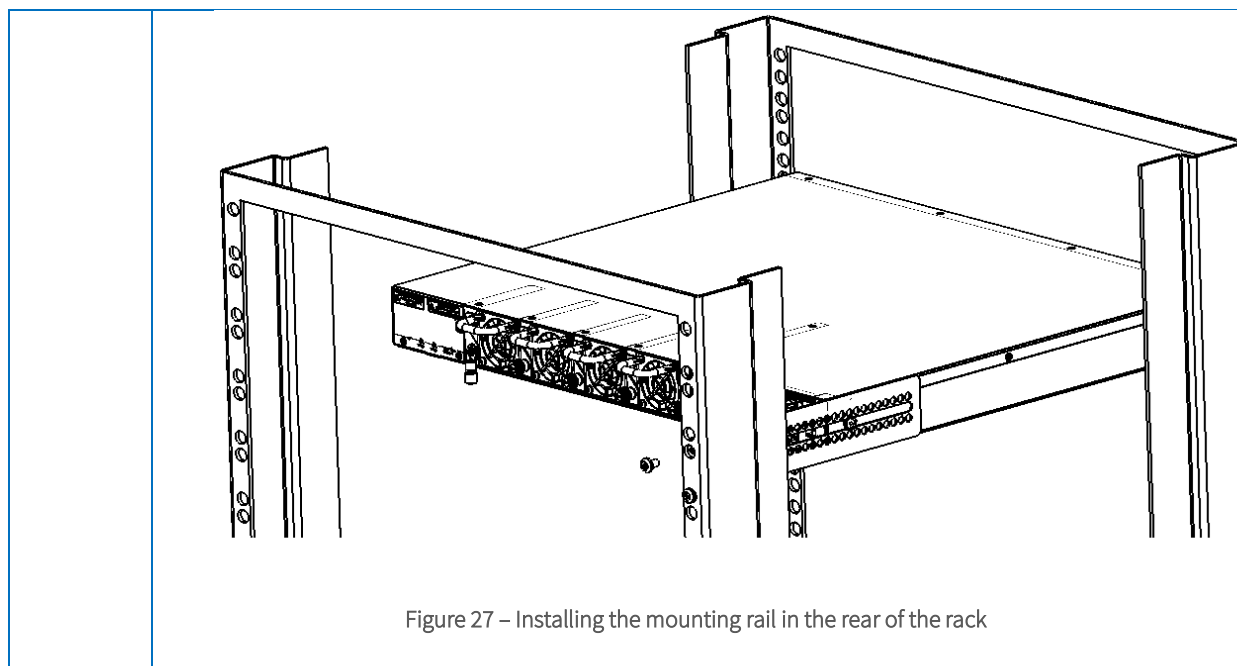


Table 19 – Installing the extension rail for rear mounting on the rack

4.5 CONNECTING THE PROTECTIVE GROUNDING

The DM4770 has a place on its rear panel to attach a cable to connect the Protective Grounding.

The grounding cable and the ring connector are not part of the basic accessories shipped with the switch. The cable indicated for the installation must have a thickness of 10 to 12 AWG. The color of the cable must follow the specific requirements of the country where the switch will be installed; most countries determine that the cable should be green with yellow stripes.

Step 1	<ul style="list-style-type: none"> Locate the grounding point located in the back of the equipment, as shown in figure 22.
Step 2	<ul style="list-style-type: none"> Secure the cable to your preferred grounding connector.
Step 3	<ul style="list-style-type: none"> Cut the cable at a suitable length to connect it with the grounding installation.
Step 4	<ul style="list-style-type: none"> Screw the connector to the equipment using a M3 screw.
Step 5	<ul style="list-style-type: none"> Secure the other end of the cable to the installation ground.

Table 20 – Steps for the installation of the protection grounding

4.6 VENTILATION

The DM4770 ventilation airflow is provided by the inlets on the front side of the equipment and through the outlets on the rear, as in figure below. For the correct operation of the cooling system it is important that the air inlets and outlets are unobstructed and that the free areas of 2 inches (5cm) are respected on the rear panel and on the left side of the switch. These areas must have free air circulation so that the temperature of the equipment remains within the assured levels of operation, also observing the cooling of the environment.

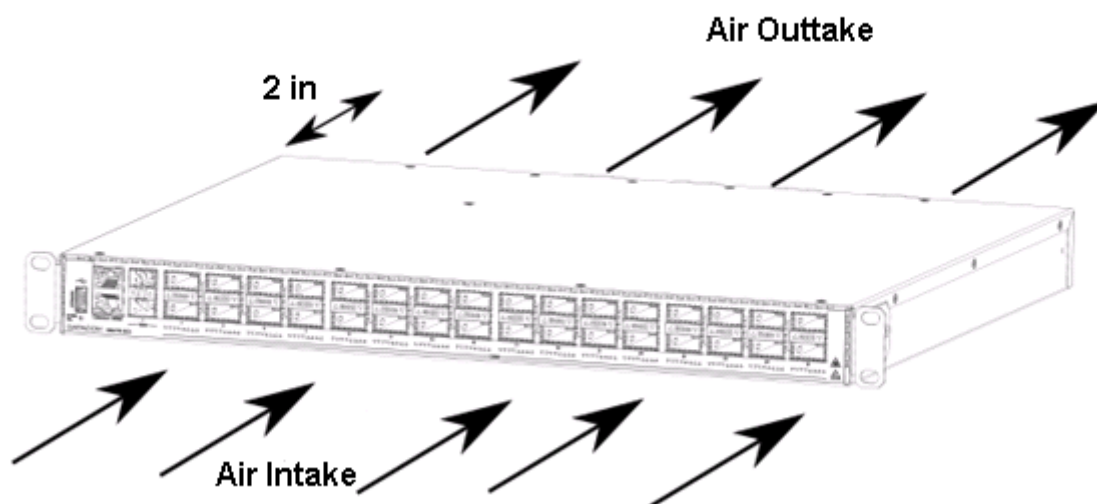


Figure 28 – Air flow in the DM4770

4.6.1 Installing the removable cooling modules in the DM4770

The DM4770 has independent hot-swappable cooling modules. For the correct operation of the system, all modules must be connected to the equipment; therefore blank panels are not available as accessories.

Each cooling module has two knurled screws to secure the equipment, if necessary, use a screwdriver to insert and remove the modules.

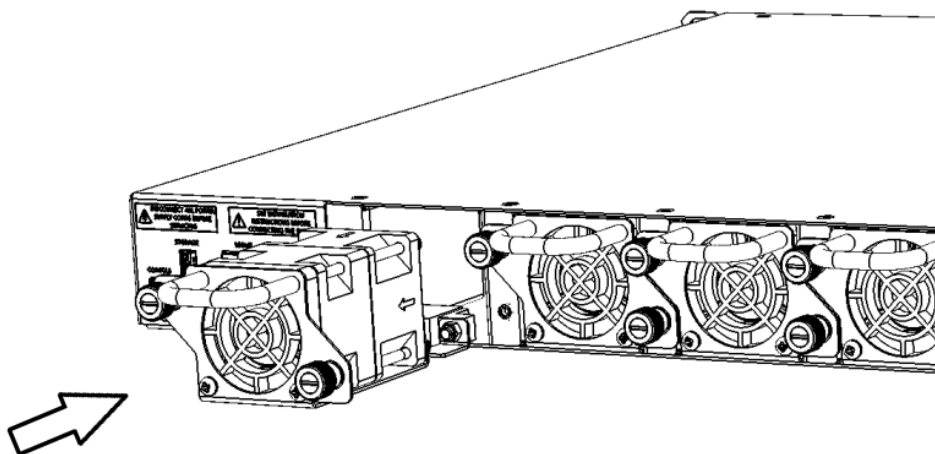


Figure 29 – Inserting the Cooling Module in the DM4770 48VS+8CX and DM4770 32CX

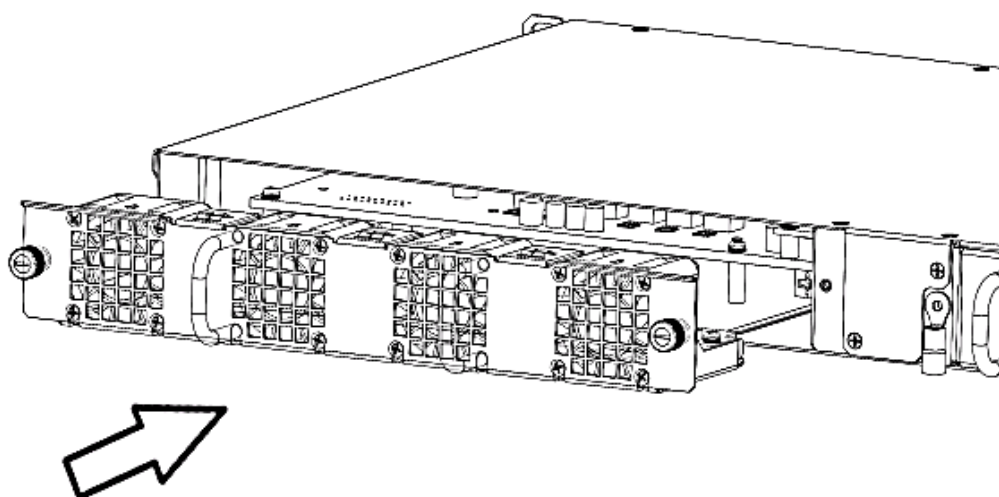


Figure 30 – Inserting the Cooling Module in the DM4770 16CX



The DM4770 FAN modules are hot-swappable. In an event of maintenance, pay special attention keeping body parts away of FAN blades, avoiding injuries.



The DM4770 FAN modules are hot-swappable. Under normal operation, the FAN blades are protected. In an event of maintenance, it is necessary to pay special attention to fingers, jewellery, clothing, hair, etc that can entanglement with FAN rotating blades.

4.7 EQUIPMENT POWER SUPPLY

4.7.1 Connecting to the PSU 400/600

The PSU 400/600 power supplies can be hot swapped. To connect a PSU to the equipment, align the PSU's mechanical base on the equipment's base and insert the board into the slot until the panel touches the equipment's panel.

PSU AC has a latch that makes a characteristic click when it is fully inserted, thus ensuring connection and securing.

For the PSU DC, it is necessary to screw the knurled screw in order to ensure the correct securing of the power supply.

If the slot to be used is protected by a blank panel, remove it beforehand.

It is recommended that you use a screwdriver on the knurled screw to ensure the complete securing of the PSU DC.

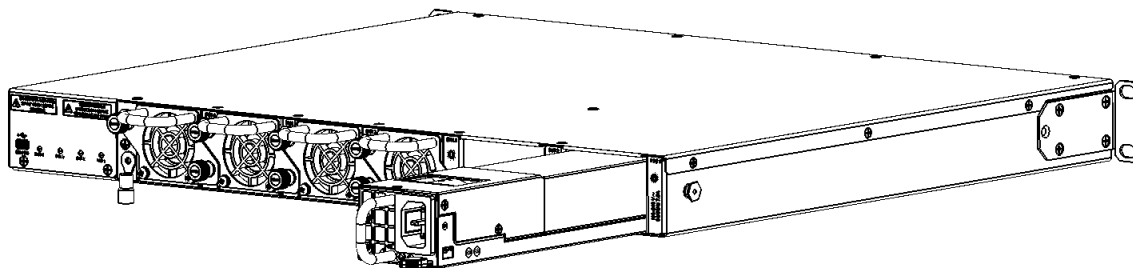


Figure 31 – Inserting the PSU AC into the DM4770



Each PSU slot has an independent power input; the PSUs 400/600 have a front power supply. The equipment will only power on if there is at least one PSU that is properly powered.

4.8 CHECKING THE PRODUCT'S OPERATION

Considering that the 7was installed according to the guidelines in this guide, the steps below indicate whether the equipment is operating normally.

Step 1	<ul style="list-style-type: none"> Immediately after the unit is powered by either of the power inputs, the power-on PSU PWR indicator will light up.
Step 2	<ul style="list-style-type: none"> After the startup has finished, observe the ALARM/FAIL indicator: <ul style="list-style-type: none"> ➤ OFF: indicates that the equipment has been initialized and is operating correctly. ➤ RED ON (FAIL): indicates that the equipment has encountered an internal failure. Technical Support must be contacted. ➤ YELLOW/AMBER ON (ALARM): indicates that the equipment has been initialized correctly, but an alarm is enabled. If you have any questions, please contact Technical Support.

Table 21 – Checking DM4770 operation

Once the startup process has been successfully completed, the operator must configure the equipment management as indicated in the [Logging in for First Time](#) section.

5 INSTALLING AND REMOVING TRANSCEIVER MODULES

This chapter describes how SFP/SFP+/SFP28/QSFP+/QSFP28 transceivers must be installed and removed. It also informs about DATACOM guidelines for the cleaning and storage of modules and optical fibers.

SFP (Small Form-factor Pluggable), SFP+, SFP28, QSFP+ and QSFP28 transceivers are inserted into the switch's SFP, SFP+, SFP28, QSFP+ and QSFP28 ports, operating as transceivers between the switch and the selected optical communication path.

So as to ensure a long life and good performance of the switch, it is very important to follow the DATACOM guidelines described below.

- Care with Optical Cords

- Always keep optical cords that are not being used with their protective cap. The core of the optical cords can become dirty and cause loss of performance just by being stored without the protective cover, even if stored in a suitable cabinet;
- Clean the core of the optical cords before using them. To clean them it is necessary to use only specific materials. Any other material used to clean the core of the optical cords may result in loss of performance to the switch or even irreparable damage to the cords.
- Care with Optical Modules
 - When handling the optical modules, you need to always use an antistatic wrist strap;
 - In order to transport and store the optical modules it is necessary to always use their original packaging to prevent any physical or electrostatic damage to the module.
 - Modules and ports that are not being used must always have their protective cover inserted so as to avoid dust, which causes the loss of link performance.



When performing any maintenance to the switch, make sure the maintenance technician is using the appropriate protections. Grounding (use of antistatic wrist strap) can prevent damage to the operator's health and damage to the switch.



The SFP modules provided by DATACOM comply with the INF-8074i (SFP MSA), SFF-8431 (SFP+ MSA), SFF-8436 (QSFP+ MSA), SFF-8679 (QSFP28 MSA) and IEC/EN 60825-1 (LASER safety) specifications. Unapproved modules do not guarantee the correct operation of the switches and can damage them. Contact [Technical Support](#) for more information regarding the risk of using unapproved modules and the possibility of using them.



The optical modules use invisible radiation laser transmitters. Although most SFP/SFP+/SFP28/QSFP+/QSFP28 on the market meet LASER safety specifications, never look directly at the terminals of a module or an optical cord. Exposure to laser emissions may cause partial or total loss of vision.

5.1 INSTALLING THE SFP28/SFP+/SFP MODULES

The SFP28/SFP+/SFP installation is conducted as shown on following steps. Follow the same procedure for copper SFP and copper SFP28/SFP+ Twin-Ax cables:

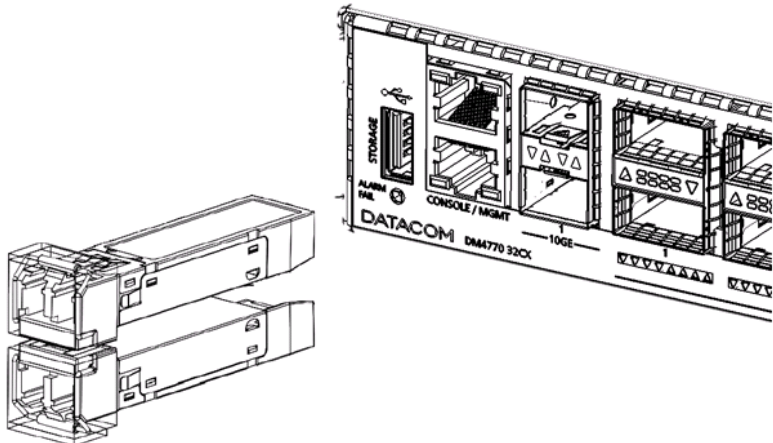
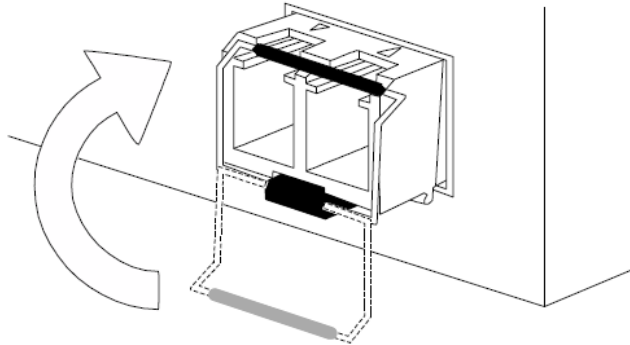
Step 1	<ul style="list-style-type: none"> Insert the module into the transceiver slot of the equipment and pushing it until it is firmly held. The correct position of the attachment can be seen in following figure, take attention that lower ports SFP/SFP+/SFP28 connects Upside down.  <p>Figure 32 – Inserting a SFP/SFP+/SFP28</p>
Step 2	<ul style="list-style-type: none"> After attaching the module, it is necessary to secure the securing handle as shown below, as it serves as a lock for the optical cables when these are connected.  <p>Figure 33 – Locking optical Fibers</p>
Step 3	<ul style="list-style-type: none"> After positioning the handle simply connect the optical cables.

Table 22 – Inserting a SFP/SFP+



The DM4770 equipments are sent with dust cover plugs in all SFP/SFP+/SFP28 ports. Before to insert a transceiver in a port, remove the dust cover. Ports without installed transceivers should keep dust cover protection to avoid electrical connections free of dust.

5.2 REMOVING SFP28/SFP+/SFP MODULES

To remove the modules, simply follow the installation instructions in reverse order. Follow the same procedure for copper SFP and copper SFP28/SFP+ Twin-Ax cables:

Step 1	<ul style="list-style-type: none"> Remove the optical cables.
--------	--

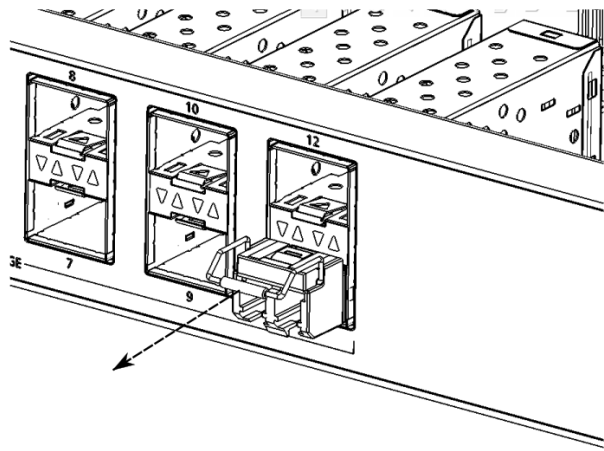
Step 2	<ul style="list-style-type: none"> Lower the securing handle.
Step 3	<ul style="list-style-type: none"> Pull the module by the handle, as shown in the following figure.  <p>Figure 34 – Removing a SFP/SFP+/SFP28</p>

Table 23 – Removing a SFP+/SFP/SFP28



When DM4770 operates over 40°C ambient temperature it is recommended to use only SFP/SFP+/SFP28 industrial temperature class transceivers. Contact the [Technical Support](#) for any doubt.

5.3 INSTALLING THE QSFP28/QSFP+ MODULES

The QSFP28/QSFP+ installation is conducted as shown on following steps. Follow the same procedure for DAC and breakout cables:

Step 1	Insert the module into the transceiver slot of the equipment and pushing it until it is firmly held. The correct position of the attachment can be seen in figure 35, take attention for the correct connection position in each DM4770 model.
--------	--

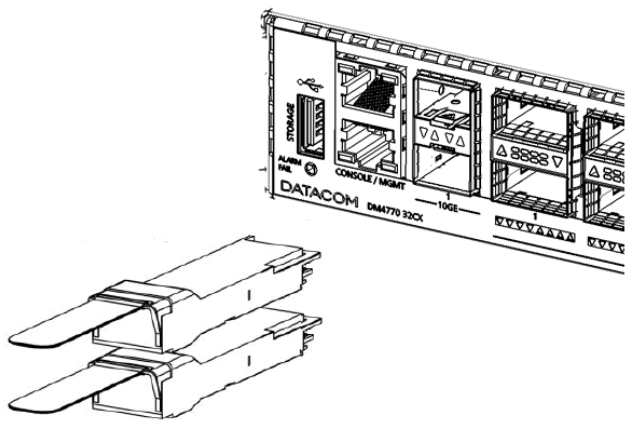
	 <p>Figure 35 – Inserting QSFP28/QSFP+ in DM4770</p>
Step 3	<ul style="list-style-type: none"> After transceiver complete connection, connect the optical cables.

Table 24 – Inserting a QSFP28/QSFP+



The DM4770 equipments are sent with dust cover plugs in all QSFP28/QSFP+ ports. Before to insert a transceiver in a port, remove the dust cover. Ports without installed transceivers should keep dust cover protection to avoid electrical connections free of dust.

5.4 REMOVING QSFP28/QSFP+ MODULES

To remove the modules, simply follow the installation instructions in reverse order. Follow the same procedure for DAC cables:

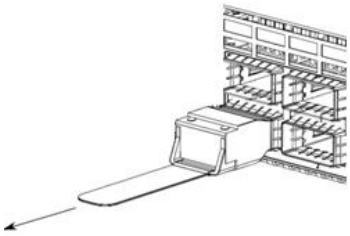
Step 1	<ul style="list-style-type: none"> Remove the optical cables.
Step 3	<ul style="list-style-type: none"> Pull the module by the handle, as shown in the following figure.  <p>Figure 36 – Removing a QSFP28/QSFP+</p>

Table 25 – Removing a QSFP28/QSFP+



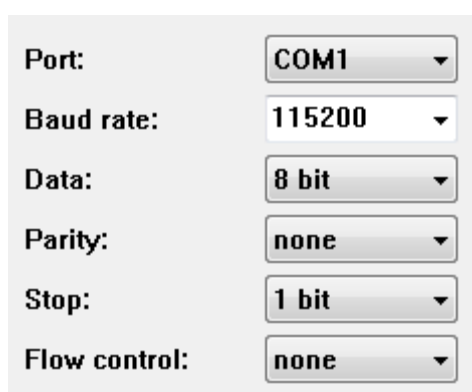
When DM4770 operates over 40°C ambient temperature it is recommended to use only QSFP+/QSFP28 industrial temperature class transceivers. Contact the [Technical Support](#) for

any doubt.

6 LOGGING IN FOR FIRST TIME

6.1 MANAGEMENT USING CONSOLE INTERFACE

It is possible to access *Command Line Interface* (CLI) through console interface or by using a SSH connection from a remote management terminal. To do this, just plug a compatible console cable and run a terminal emulator as Hyper Terminal or any other similar using a computer or laptop. The default configuration for DM4770 is baud rate 115200, with 1 stop bit and no parity, following below figure.



Port:	COM1
Baud rate:	115200
Data:	8 bit
Parity:	none
Stop:	1 bit
Flow control:	none

Figure 37 – Computer console interface configuration



The DM4770 equipments do not support hardware flow control. In console port configuration the hardware flow control need to be disabled.

Step 1	<ul style="list-style-type: none"> On the PC or laptop, start the terminal emulation program. The initial login prompt for a username appears: <ul style="list-style-type: none"> ➤ DmOS ➤ DM4770 login:
Step 2	<ul style="list-style-type: none"> The default username and password are admin. <ul style="list-style-type: none"> ➤ DM4770 login: admin [Enter] ➤ Password: admin [Enter]
Result	<ul style="list-style-type: none"> The prompt as following will appear, indicating a successful login: <ul style="list-style-type: none"> ➤ Welcome to the DmOS CLI ➤ Admin connected from 127.0.0.1 using console on DM4770 ➤ DM4770#

Table 26 – DM4770 Login

6.2 MANAGEMENT USING ETHERNET INTERFACE

Using factory configuration the equipment can be accessed by SSHv2 using management Ethernet interface (MGMT) through IP 192.168.0.25/24.

With additional configurations is possible to change the default IP and also configure IPs to access from other Ethernet interfaces. The configuration also allows enabling or disabling SSHv2 and Telnet servers.

Step 1	<ul style="list-style-type: none"> Entering the configuration mode: <pre># configure</pre>
Step 2	<ul style="list-style-type: none"> Entering the MGMT interface configuration: <pre>(config) # interface mgmt 1/1/1</pre>
Step 3	<ul style="list-style-type: none"> Configuring the IPv4 address on MGMT interface: <pre>(config-mgmt-1/1/1) # ipv4 address 172.2.22.1/24</pre>
Step 4	<ul style="list-style-type: none"> Removing the IPV4 default address: <pre>(config-mgmt-1/1/1) # no ipv4 address 192.168.0.25/24 (config-mgmt-1/1/1) # top</pre>
Step 5	<ul style="list-style-type: none"> Configuring the equipment default gateway: <pre>(config) # router static address-family ipv4 0.0.0.0/0 next-hop 172.2.22.254</pre>
Step 6	<ul style="list-style-type: none"> Apply and save the configuration: <pre>(config) # commit</pre>

Table 27 – Configuring the MGMT Interface



Check the Quick configuration Guide for more information about equipment management configurations.

6.3 CONFIGURING USERS

Considering the equipment correctly installed as described previously, the user can manage it through a Command Line Interface (CLI). The CLI is accessed by using a direct or USB console connection or by using a SSH or Telnet connection from a remote management terminal.

Only one account is pre-configured in default factory config in the DM4770 line: *admin*

User	Password	Description
admin	admin	Admin is an account that has admin level privileges. So, it can view and change all device parameters. It is a complete read-and-write access to the entire device.

Table 28 – Default account



Due the security reasons, it is strongly recommended to change the admin account password at the first time login.

6.4 CHANGING DEFAULT ADMINISTRATOR ACCOUNT PASSWORD

For security reasons it is highly recommended to modify the default administrator account password.

Step 1	Entering the configuration mode: # configure
Step 2	Entering the user mode: (config) # aaa user admin
Step 3	Changing the password: (config-user-admin) # password new-password
Step 4	Exiting the user mode: (config-user-admin) # exit
Step 5	Applying and saving configuration changes: (config) # commit

Table 29 – Changing Password

7 TECHNICAL SPECIFICATION

7.1 INTERFACES

Interfaces	DM4770 32CX	DM4770 48VS+8CX	DM4770 16CX
RS-232Console (RJ45)	1	1	1
Management Ethernet (RJ45)	1	1	1
USB Host (type A)	1	1	1
USB Device (type B)	1	1	-
1000Base-X (SFP)	-	1	-
1000Base-X/10GBase-X (SFP+)	2	-	-
1000Base-X/10GBase-X/25GBase-X (SFP28)	-	48	4
40GBase-X (QSFP+)	-	-	-
40GBase-X/100GBase-X (QSFP28)	32	8	12
40GBase-X/100GBase-X (QSFP-DD)	-	-	4

Table 30 – DM4770 Family Interfaces

7.2 POWER SUPPLY AND CONSUMPTION

7.2.1 Power Supply PSU 400/600 AC/DC

	PSU 400 AC	PSU 600 AC	PSU 400 DC	PSU 600 DC
Connector type	IEC 320/C14		Terminal Block	
Nominal Operating voltage	100 to 240Vac ($\pm 10\%$) 50/60Hz		-48 to -60Vdc ($\pm 20\%$)	
Nominal Input Current	4.5 A @ 100Vac* 1.9 A @ 240Vac*	7.0 A @ 100Vac* 2.9 A @ 240Vac*	9.1 A @ -48Vdc* 7.3 A @ -60Vdc*	14.5 A @ -48Vdc* 11.5 A @ -60Vdc*
Maximum Input Current	5.05A	7.8A	11,25 A	17,2 A
Output Voltage	12V ($\pm 5\%$)			
Output Current	33A ($\pm 5\%$)*	50A ($\pm 5\%$)*	33A ($\pm 5\%$)*	50A ($\pm 5\%$)*
Power Efficiency	>80%			

Table 31 – AC/DC Power Supplies specifications

* Maximum values for the Power Supplies

7.2.2 DM4770 System

		DM4770 32CX	DM4770 48VS+8CX	DM4770 16CX
Typical Consumption (Watts)	PSU DC	400W	400W	250W
	PSU AC	400W	400W	250W
Maximum Consumption (Watts)	PSU DC	580W	580W	380W
	PSU AC	580W	580W	380W
Maximum Current (Amperes)	PSU DC	17,2A	17,2A	11,0A
	PSU AC	7,8A	7,8A	5,0A

Table 32 – DM4770 Power Consumption

7.3 PHYSICAL SPECIFICATIONS

DM4770 model		
Height	All models	44 mm
Width (with brackets)	All models	482 mm
Width (without L brackets)	All models	447 mm
Depth	32CX / 48VS+8CX	400 mm
	16CX	300 mm
Height	32CX / 48VS+8CX	6.28 kg
	16CX	4.00 kg

Table 33 – DM4770 Physical Specifications

7.4 ENVIRONMENT INFORMATION

	DM4770 32CX	DM4770 48VS+8CX	DM4770 16CX
Operation Temperature	0°C to 45°C	0°C to 50°C	0°C to 50°C
Operation Relative Humidity	10% to 90%, non-condensed		
Operating Altitude	0 to 3000m		
Storage Temperature	-20°C to 70°C		

Table 34 – DM4770 Environment Information



When DM4770 operates over 40°C ambient temperature it is recommended to use only SFP/SFP+/SFP28/QSFP+/QSFP28 industrial temperature class transceivers. Contact the [Technical Support](#) for any doubt.



The Model DM4770 16CX has 4 QSFP-DD interfaces compatible with QSFP28. When using QSFP-DD transceivers the maximum operation temperature is reduced to 45°C even with industrial temperature modules, due to its high power. Contact the [Technical Support](#) for any doubt.

8 STANDARDS AND REGULATIONS

Class	Standard	Description
➤ Directive 2014/30/EU Electromagnetic Compatibility		
EMC	Ato 1120	Requisitos técnicos de compatibilidade eletromagnética para avaliação da conformidade de produtos de telecomunicações.
ECM	ETSI EN 300 386	Telecommunication network equipment; ElectroMagnetic Compatibility (EMC) requirements; Harmonized Standard covering the essential requirements of the Directive 2014/30/EU
EMC	EN 55032	Electromagnetic compatibility of multimedia equipment - Emission requirements
EMC	EN 50581:2012	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances
EMC	EN 61000-4-6	Immunity to conducted disturbances, induced by radio-frequency fields
EMC	EN 61000-4-2	Electrostatic discharge immunity test
EMC	EN 61000-4-4	Electrical fast transient/burst immunity test
EMC	EN 61000-4-5	Surge immunity test
EMC	EN 61000-4-3	Radiated, radio-frequency, electromagnetic field immunity test
EMC	EN 61000-3-2	Limits for harmonic current emissions
EMC	EN 61000-3-3	Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems
➤ Directive 2014/35/EU Low Voltage		
Safety	EN 60825-1	Safety of LASER products
Safety	EN 60950-1	Information technology equipment – Safety – Part 1: General requirements
➤ Directive 2011/65/EU Restriction of Hazardous Substances in Electrical and Electronic Equipment (RoHS)		
RoHS	EN 50581:2012	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances
➤ Directive 2012/19/EU Waste Electrical & Electronic Equipment (WEEE)		
➤ Environmental Conditions		
--	EN 300 019-1-1, Class 1.2	Environmental Conditions for storage
--	EN 300 019-1-2, Class 2.3	Environmental Conditions for Transport

Table 35 – DM4770 – Standards and Regulations

DATACOM

Rua América, 1000 | 92990-000 | Eldorado do Sul | RS | Brasil

+55 51 3933 3000

sales@datacom.com.br