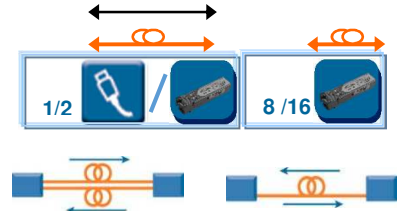# HNDF-2TGxFX series
Modular optical layer-2 Ethernet switch
Multi-applications – Hardened environment

- **Rack 1U switch with two ventilation elements for hardened environment**
- **Possibility of dual power supply : 230VAC, 24VDC, 48VDC or mixed**
- **Concentration capacity from 8 to 32 Fast Ethernet optical links over two to four Gigabit Ethernet ports, optical or copper**
- **Modular solution : 2 available modules, 10 and 18 SFP ports including 2 Gigabit**

Switch 16 ports optiques SFP + module additionnel 8 ports optiques SFP à insérer dans le rack

DESCRIPTION

These modular and multi-applications Ethernet switches (transport, security, industry, FTTX access) are to be inserted in the network nodes (PC, NRO, SRO).

They enable to concentrate signals from 100 Mbit/s fiber optic Ethernet links (IP cameras, CPE subscribers,...) on 2 Gigabit Ethernet links. It is thus possible in a 19"1U single rack to concentrate up to 32 x 100 Mbit/s optical links.

The 2 Gigabit Ethernet links allow to cascade several Ethernet switches and to secure the network by link redundancy using RSTP network protocol to build a loop force topology

These modules integrate all necessary features for a neutral and mutualized activation of activity zones.

The products are designed to operate in outdoor cabinets in a hardened or industrial environment.

They are perfectly suitable for various types of applications:

- **Ethernet Extension**
- **Access to FTTE**
- **Video over IP**
- **Sensor Networks**
- **…**

The 19''1U rack hosting module is available with one or two 230VAC power supplies integrated and/or 24VDC or 48VDC power supply. It has two long-lived ventilation elements. Power supplies and ventilation elements are removable and hot-swappable.

Each concentration module is remotely manageable via Ethernet, allowing to configure the product and to diagnose the network status.
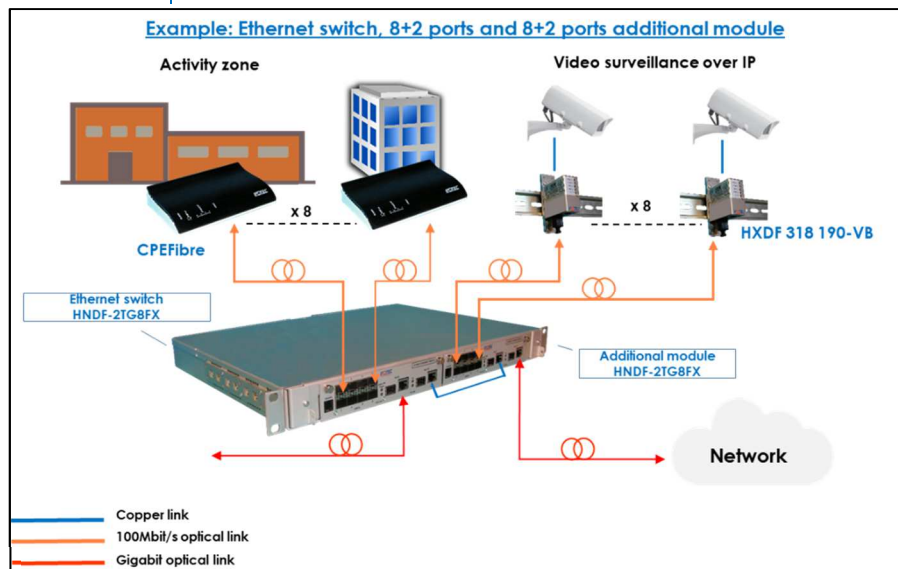
MAIN FEATURES

- Layer-2 Routing
- 128 VLANs (usernames configurable values: 1-4094).
- QinQ (VLAN stacking): 802.1Q and 802.1ad.
- QoS : port priority , DSCP, VLAN priority (802.1p).
- Egress and Ingress rate limiting
- Management of network loops: Spanning Tree (STP / RSTP).
- Port Mirroring.
- Ethernet frame size: 64-1632 bytes.
- MAC address routing table size: 8000 entries.
- Filtering by MAC address
- Product Management: configuration by Web page (http) and console (telnet and serial interface), monitoring through SNMP.
- Activated RADIUS authentication.
- Updating configuration files and firmware when starting the product with DHCP protocol.
- Serial port to manage the product.
- Connection to WAN by copper or fiber Gigabit Ethernet links.
- Aggregation equipment of optical Ethernet links may be installed in outdoor cabinet, neither heated nor cooled.
- 19"1U rack format with low power consumption and manageable
- The rack has two modules of 4 fans with optimized longevity software and one or two power supplies 230VAC or 24VDC or 48VDC. Hot-swappable.
- Rugged design for operation in non-ventilated outdoor cabinets

- Place of production and service: Voiron (France - Isère)
- Product Warranty : 3 years with SFP IFOTEC

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FRENCH DESIGN AND MANUFACTURING

Example: Ethernet switch, 8+2 ports and 8+2 ports additional module

Activity zone
Video surveillance over IP
CPEFibre
x 8
x 8
HXDF 318 190-VB
Ethernet switch HNDF-2TG8FX
Additional module HNDF-2TG8FX
Network

— Copper link
— 100Mbit/s optical link
— Gigabit optical link

Ethernet port specifications

		Combo RJ45/Optical Gigabit Ethernet Port		Gigabit Ethernet Optical	Fast Ethernet port
Number of ports	HNDF-2TG**8**FX	2		0	8
	HNDF-2TG**16**FX	1		1	16
Access type		**RJ45**	**Optical SFP**	**Optical SFP**	**Optical SFP**
Rate		10/100/1000 Mbit/s	100/1000 Mbit/s	1000 Mbit/s	100 Mbit/s
Duplex		Auto Full/Half	Full	Full	Full
Auto-negociation rate		Yes	Yes	Yes	Yes

Connector type

SFP links: Optical connector as used SFP

Copper links: RJ45 Ethernet connector (5e/6 category cable)

RS232 serial console port: RS 232

Power supply

230 (85-260) VAC, 24 (18-36) VDC or 48 (36-60) VDC

Option : dual power supply via the insertion of a 230VAC, 24VDC or 48VDC additional module

HNDF power consumption :

17W max (2TG8FX version) and 25W max (2TG16FX version)

Housing

19 inch 1U rack

Maximum depth : 320 mm

Environment

Operating temperature : -20 to +60°C

Storage temperature : -40 to +85 °C

Relative humidity : 0 to 85 % (non condensing).

Conformal coated : 0 to 95% please consult us

REFERENCES:

SWITCH FOR ETHERNET NETWORKS : 8 OR 16 PORTS

Reference*	Application	Housing	Optical connector
HNDF 050 1xS-2TG8FX	Ethernet Switch - 8 x 100 Mbit/s SFP** ports + 2 combo Gigabit ports: - RJ45 or SFP**	19''1U rack	SFP module**
HNDF 050 1xS-2TG16FX	Ethernet switch - 16 x 100 Mbit/s SFP** ports + 1 combo Gigabit port: - RJ45 or SFP** + 1 SFP** Gigabit port	19''1U rack	SFP module**

* For power supply, replace the letter X by 2 : 230VAC, 3 : 24VDC or 4 : 48VDC

ADDITIONAL MODULE OR MAINTENANCE MODULE TO PLACE INTO A HNDF 2TG8FX or 2TG16FX SWITCH-

Reference	Description
HNDF 0Z0 10S-2TG8FX	Ethernet switch - 8 x 100 Mb/s SFP** ports + 2 combo Gigabit ports: - RJ45 or SFP**
HNDF 0Z0 10S-2TG16FX	Ethernet switch - 16 x 100 Mb/s SFP** ports + 1 combo Gigabit port: - RJ45 or SFP** + 1 SFP** Gigabit port
RFoFibre-S230400-	230VAC power supply module
RFoFibre-M330400	24VDC power supply module
RFoFibre-M430400	48VDC power supply module
VENTIL-00x	Modular fan unit for rack (maintenance) – x=1 rack FCCO053002 / x=2 FCCO053002-VB
ADAPT-CONFIG-001	RJ22 male adapter to SUBD-9 female for access to the switch console port (for computers without SUBD-9 serial link port, the SUBD-9 to USB conversion module is not provided by IFOTEC)

** Gigabit Ethernet and Fast Ethernet SFP not supplied, to order extra. See the table below

MAIN OPTICAL SFPs (-40 - +85 ° C)
FOR MORE INFORMATION, PLEASE CONSULT OUR SFP DATA SHEET

References	Nbre and type of fibres	Transmission	Wavelength Tx/Rx	Distance maxi ***	Connector
SFPL-1GD31-20	2 single-mode optical fibres	1000Base-LX	1310 nm	20 km	LC/PC
SFPL-1GX31-20	1 single-mode optical fibres	1000Base-BX-U	1310 nm /1550 nm	20 km	LC/PC
SFPL-1GX55-20		1000Base-BX10-D	1550/1310 nm		
SFPL-FEX55-20	1 single-mode optical fibres	100Base-BX-D	1550/1310 nm	20 km	LC/PC

** For other distances, please consult us.

In line with the company policy of continuous improvement, product specifications are subject to change without prior notice