

LOOX

TVCC PC LAN

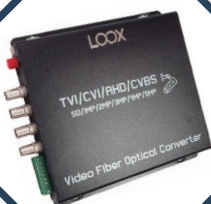
MIRA



1080P 4K



USB RJ45 VGA



UHD



global **invacom**

DELTA
Electronics

AHD TVI CVI 960H

HDMI

CATALOGO
FIBRA OTTICA
COMPONENTI ATTIVI
2024 Q4

Fibra ottica / componenti attivi

2024 Q4

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GLOBAL INVACOM - Trasmettitori / Ricevitori ottici

MOCH2 31-33-xx, MOCH2 35-37-55 - Optical Compact Transmitter



MOCH2 31-33-00



MOCH2 31-33-55



MOCH2 35-37-55

SPECIFICHE	MOCH2 31-33-00	MOCH2 31-33-55	MOCH2 35-37-55
Sat Inputs	2x Satellite (Wideband/Quattro)	2x Satellite (Wideband/Quattro) + 1x DTT	2x Satellite + 1x DTT + 1x Optical from MOCH2 31-33-00
Sat Frequency range	290 - 2340 MHz (WB)		
Min Sat input level	65 dBμV		
DC LNB	18 Vdc - 400 mA		
Min Terr/CATV Input level	65 dBμV		
Optical Outputs	1x SC/APC		
Optical Power	≥9 dBm per wavelength		
Optical Output wavelengths	1310, 1330 nm	1310, 1330, 1550 nm	1350, 1370, 1550 nm
Automatic Gain Control	15 dB		
Automatic Slope Control	10 dB		
Power Supply	18 to 20 Vdc - ≥ 1,5 A (J2469 not included)		
Power Consumption	Max 30 W		
Environmental Temperature	-20° ÷ +50° C		
Dimensions	221 x 141 x 50 mm		
Weight	0.8 Kg		

MOCH2 31-33-xx / MOCH2 35-37-55

- Integrated amplifier with AGC/ASC/LTE filtering
- Signal Indication via LED
- Operation Mode indication via LED
- Operation Mode Setting
- Bandwidth Selection (WB/Quattro and TER/CATV)
- Availability in 19" Housing

Due to the integrated amplifier with AGC and ASC, the signal of the LNB and a terrestrial VHF antenna can be inserted directly without any preprocessing. The device accepts input signal levels from 70 to 85 dBμV.

Optical Triple Transmitter 1350, 1370, 1550 nm
Optimized for Wideband Satellite signal input (optional Quattro signal input)
3rd input optimized for terrestrial frequencies up to 700 MHz (optional CATV input frequency range up to 1.2 GHz).
This device is designed to support the transmission of satellite signals of a 2nd satellite via one single fiber.
It **only** can be used in combination with the MOCH2 31-33-00.

The device has an optical input that accepts wavelengths below 1340 nm and combines them with the internally produced wavelengths.



PRODOTTO NECESSARIO!
J2469

Alimentatore switching 20 Vdc - 3,2 A
Connettore F



PRODOTTO CONSIGLIATO!
MIRA MLWB21



PRODOTTO CONSIGLIATO!
MIRA MLQWB2

MCOR25 - Optical Receiver



MOCOR25

MCOR25

- Optimized for Wideband Satellite IF signals (290 ÷ 2350 MHz)
- Suitable for CATV signals (5 ÷ 862 MHz) and/or Quattro Satellite IF signals (950 ÷ 2150 MHz)
- Converts single fibre with two wavelengths (1310, 1330 nm)
- Perfect match for the MSW Multiswitches series of DELTA
- Perfect receiver for the Optical Compact Transmitter of MOCH25

SPECIFICHE	MOCOR25
Optical Inputs	1
RF Outputs	2
Optical Wavelength	1310, 1330 nm
Terrestrial Output Frequency Range	-
Satellite Output Frequency Range	5 ÷ 2400 MHz
Optical Input Level	-15 ÷ +5 dBm
RF Output Level per Tr. (AGC)	80 dBμV
Signal Presence Indicator	Green LED per wavelength
Return Loss	10 dB
Optical Connector Type	SC / APC
RF Connector	75 Ω F-type (female)
Power Consumption	2 W
Power Supply	12 ÷ 20 V (via V or H port)
Power Indicator	Green LED
Operating Temperature Range	-20° ÷ +55° C
Dimensions	36 x 45 x 125 mm
Weight	0.11 Kg

MCOR25, 35, 55AGC - Optical Receiver with AGC



MOCOR25AGC



MOCOR35AGC



MOCOR55AGC

SPECIFICHE	MOCOR25AGC	MOCOR35AGC	MOCOR55AGC
Optical Inputs	1	1	1
RF Outputs	2	3	5
Optical Wavelength	1310, 1330 nm	1310, 1330, 1350 nm	1310, 1330, 1350, 1370, 1550 nm
Terrestrial Output Frequency Range	-		
Satellite Output Frequency Range	5 ÷ 2400 MHz		
Optical Input Level	-15 ÷ +4 dBm		
RF Output Level per Tr. (AGC)	80 dBμV		
Signal Presence Indicator	Green LED per wavelength		
Return Loss	-10 dB		
Optical Connector Type	SC / APC		
RF Connector	75 Ω F-type (female)		
Power Consumption	2 W	3 W	4 W
Power Supply	12 ÷ 20 V (via V or H port)		
Power Indicator	Green LED		
Operating Temperature Range	-20° ÷ +55°C		
Dimensions	40 x 125 x 50 mm	60 x 125 x 50 mm	100 x 125 x 50 mm
Weight	0.11 Kg	0.165 Kg	0.275 Kg

MOCOR25AGC, MOCOR35AGC, MOCOR55AGC

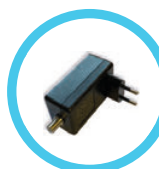
- Optical multiple Receiver with automatic gain control (AGC)
- LED-indication for signal receive
- Compact design
- DC Supply on all SAT outputs
- Wide range of optical input

MOTD3216 - Optical Receiver



MOTD3216

- One device covers multiple applications:
 - Optic-Legacy Converter
 - dSCR-Converter
- Excellent optical sensitivity
- Automatic Legacy / dSCR recognition.
- Supports Unicable 1 and 2
- Powered via RF outputs or separate power supply
- LED indication of optical signal & power supply
- 16 User bands per output in dSCR mode
- Compact design



PRODOTTO CORRELATO:
J2499L

SPECIFICHE	MOTD3216
Optical Inputs	1x connector SC/APC
Optical wavelength	1310, 1330, 1550 nm
Terrestrial output frequency range	40 ÷ 790 MHz (1 connector F-Type)
Terrestrial output level (AGC)	70 dBμV
Satellite output frequency range	950 ÷ 2150 MHz (4 connector F-Type)
Satellite output level (AGC)	80 dBμV
Signal presence indicator	Green LED per wavelength
dSCR outputs	2
Supported Output Modes	SCR + Legacy + DVB-T/DAB/FM
SCR Channel Bandwidth	46 Mhz
SCR User Bands	16 per output EN 50494: 1210, 1420, 1680, 2040; EN 50607: 985, 1050, 1115, 1275, 1340, 1485, 1550, 1615, 1745, 1810, 1875, 1940
SCR Standards (automatic Recognition)	BSkyB SCR CENELEC EN 50494, CENELEC EN 50607, Universal LNB Tone & Voltage
Legacy Output Power per Txp	Up to -15 dBm, no AGC
DiSEqC Commands	DiSEqC conform
DC Powering	Can be powered through the DC connector or through the SAT-RF outputs (all F type)
Voltage	10 to 20 Vdc from connected receivers or multiswitches 11 to 20 Vdc from power supply
Max. Power Consumption	5 W
DC via RF outputs	Yes (not on terrestrial RF output)
Shortage & Power On Diagnostics	Yes
Operating Temperature Range	-20° ÷ +50° C (indoor use only)
Dimensions - Weight	164 x 142 x 50 mm - 0.35 Kg

MOQC5416, MOTD5416 - dSCR/legacy Quad/Quattro FTU



MOQC5416

- One device covers multiple applications:
 - Optic-Legacy Converter
 - Optic dSCR-Converter
 - Optic Quattro-Converter
- Excellent optical sensitivity
- Automatic Legacy / dSCR recognition.
- Supports Unicable 1 and 2
- Powered via RF outputs or separate power supply
- LED indication of optical signal & power supply
- 16 User bands per output in dSCR mode
- Compact design



PRODOTTO CORRELATO:
J2469

SPECIFICHE	MOQC5416	MOTD5416
Optical Inputs	1 x connector SC/APC	
Optical wavelength	1310, 1330, 1550 nm	1310, 1330, 1350, 1370, 1550 nm
Terrestrial output frequency range	40 - 790 MHz (1 connector F-Type)	
Terrestrial output level (AGC)	Quad Mode: 65 dBμV / Quattro Mode 75 dBμV	
Satellite output frequency range	950 - 2150 MHz (4 connector F-Type)	
Satellite output level (AGC)	Quad Mode: 80 dBμV / Quattro Mode 80 dBμV	
Signal presence indicator	Green LED per wavelength	
dSCR outputs	4 (in Quad Mode)	
Supported Output Modes	SCR + Legacy + DVB-T/DAB/FM	SCR + Legacy + CATV
SCR Channel Bandwidth	46 MHz	
SCR User Bands	16 per output EN 50494: 1210, 1420, 1680, 2040; EN 50607: 985, 1050, 1115, 1275, 1340, 1485, 1550, 1615, 1745, 1810, 1875, 1940	
SCR Standards (automatic Recognition)	BSkyB SCR CENELEC EN 50494, CENELEC EN 50607, Universal LNB Tone & Voltage	
Legacy Output Power per Txp	Up to -15 dBm, no AGC	-8 dB (Typ -12 dB)
DiSEqC Commands	DiSEqC conform	
DC Powering	Can be powered through the DC connector or through the SAT-RF outputs (all F type)	
Voltage	10 ÷ 20 Vdc from connected receivers or multiswitches 11 ÷ 20 Vdc from power supply	
DC via RF outputs	Yes (not on terrestrial RF output)	
Shortage & Power On Diagnostics	Yes	
Max. Power Consumption	8 W	16 W
Operating Temperature Range	-20° ÷ +50° C	-10° ÷ +55° C
Dimensions - Weight	164 x 142 x 50 mm - 0.5 Kg	166 x 170 x 50 mm - 0.5 Kg

MOT83W, MOT87W, MOT103W, MOT105W



PRODOTTO CONSIGLIATO!
J9780 - Digital DSCR Solutions

SPECIFICHE	MOT87W	MOT105W	MOT83W	MOT103W
Optical Characteristics				
Laser Type	DFB			
Optical Wavelength	1550 nm		1310 nm	
Output Optical Power	8,5 dBm	10,0 dBm	8,5 dBm	11,0 dBm
Optical Return Loss	50 dB			
Optical Connector Type	SC/APC			
CATV RF Characteristics				
Operating Bandwidth	45 ÷ 862 MHz			
Input Range	75 ÷ 85 dBµV			
Flatness	± 1 dB			
Input Return Loss	14 dB			
C/N	≥51 dB	42 CH CENELEC 80dBµV AGC OMI=3.8%		
C/CTB	≥63 dB	42 CH CENELEC 80dBµV AGC OMI=3.8%		
C/CSO	≥58 dB	42 CH CENELEC 80dBµV AGC OMI=3.8%		
Input Impedance	75 Ω			
RF Connector	F type (Male/Female)			
SAT-IF Characteristics				
Working Bandwidth	950 ÷ 2600 MHz			
Input Range	68 ÷ 83 dBµV			
Flatness	±3 dB			
Input Return Loss	10 dB			
C/IM3	≥55			
General Characteristics				
Power Supply (AC)	IN: 110 ÷ 265 Vac, OUT: 12Vdc / 18 Vdc - 10 W			
Working Temperature	0° ÷ +50° C			
Dimension	200 x 102 x 35 mm			

MOR300W, MOR329W, MOR355, MOR500W



Features:

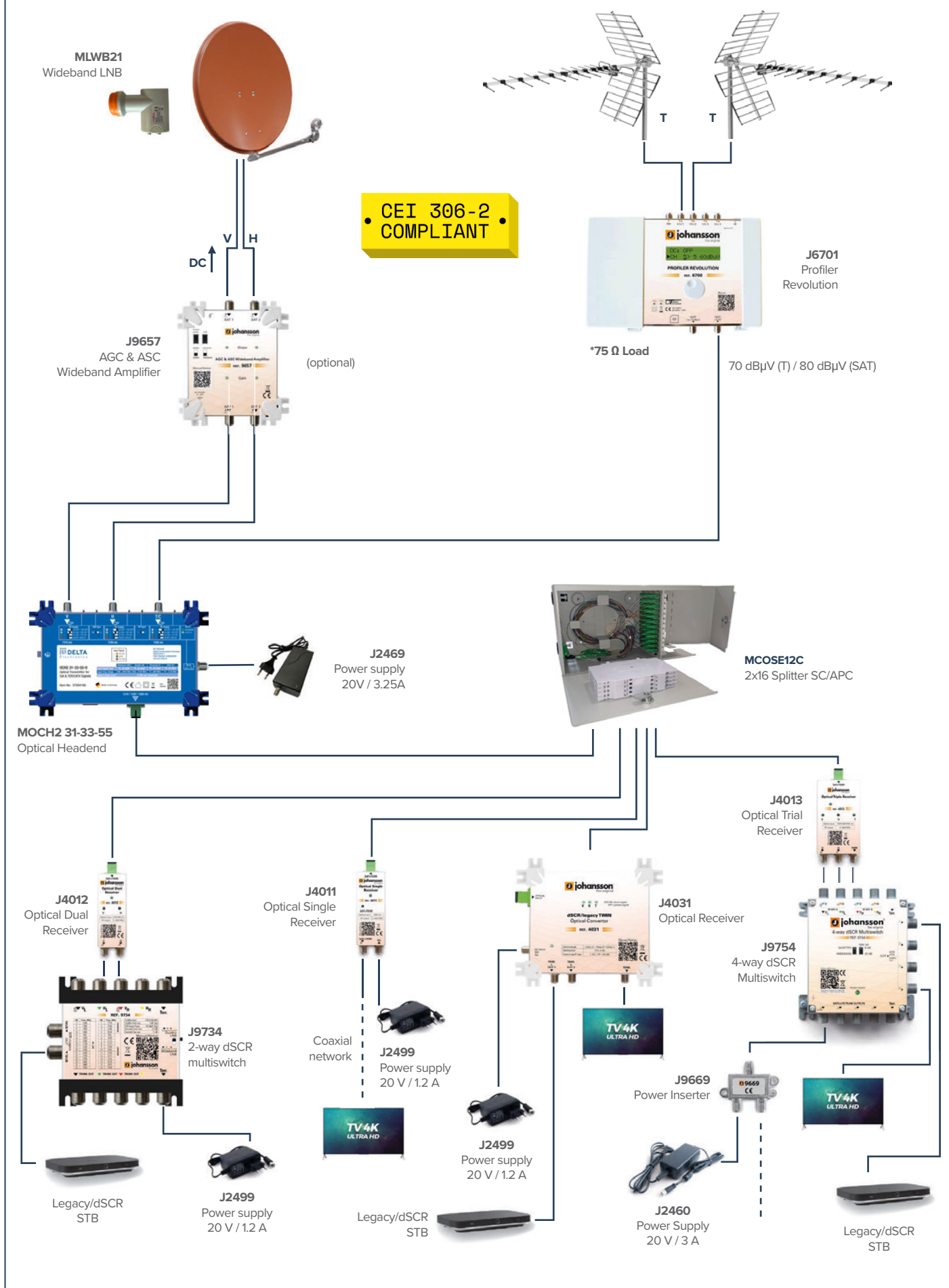
- High linearity, suitable for Analog TV&SAT-IF application
- MOR300W-MOR329W-MOR355 Bandwidth: 45 ÷ 1000 MHz
- MOR500W Bandwidth: 45 ÷ 2600 MHz
- Simultaneously receive CATV and SAT-IF signal, can be compatible with FTTxPON technology
- Analog TV, Digital TV and Satellite TV have excellent performance:
 - Analog TV: (84CH PAL-D, OMI= 3.8%, Pin= -1 dBm)
C/N >51 dB, CTB ≤ -66 dB, CSO ≤ -62 dB;
 - Digital TV: (Original signal MER =38.6 dB, BER < 1.0E-9) Pin= -14 dBm, MER ≥33 dB (MER degrade 5 dB), Pin= -19 dBm, BER < 1.0E-9;
 - Satellite TV: (Original signal quality= 64%) Pin= 20 dBm, signal quality >38%.

SPECIFICHE	MOR300W / MOR329	MOR500W	MOR355
Optical Characteristics			
Operating Wavelength	1260 ÷ 1620 nm		1530 ÷ 1570 nm
Responsivity	0.85 A/W		
Receiving optical power range	Analog TV: - 7 ÷ +2 Digital TV: - 14 ÷ +2 Satellite TV: - 20 ÷ +2		
Optical Return Loss	50 dB		
Optical Connector Type	Input: SC/APC - MOR329W Output: SC/PC		
RF Characteristics			
Operating Bandwidth	45 ÷ 1000 MHz	45 ÷ 2600 MHz	45 ÷ 1000 MHz
Output Level	90 dBµV@Pin=0 dBm		
Flatness	-1.0 ÷ +1.0 dB (45 ÷ 862 MHz) -2.5 ÷ +2.5 dB (950 ÷ 2600 MHz)		
Output Return Loss	14 dB min. (45 ÷ 862 MHz) 12 dB min. (950 ÷ 2600 MHz)		
C/N	51 dB min. @Pin= -1 dBm, Pout>88 dBµV, 84CH PAL-D, OMI=3.8%		
CTB	66 dB min. 66 @Pin= -1 dBm, Pout>88 dBµV, 84CH PAL-D, OMI=3.8%		
CSO	62 dB min. @Pin= -1 dBm, Pout>88dB BµV, 84CH PAL-D, OMI=3.8%		
HUM	-60 dB min.		
Output Impedance	75 Ω		
RF connector	F type (Male/female selectable)		
General Characteristics			
Operating Voltage	12 Vdc		
Consumption	≤ 3 W		
Operating Temperature	-20° ÷ +60° C		
Dimension	105 x 67 x 24 mm		

The diagram illustrates a satellite system architecture with the following components and connections:

- MLWB21 Wideband LNB**: Connected to a satellite dish.
- J9657 AGC & ASC Wideband Amplifier**: Receives signals from the dish (V and H polarizations) and provides DC power. It is labeled as optional.
- CEI 306-2 COMPLIANT**: A yellow box indicating compliance with CEI 306-2 standards.
- J6700 Profiler Revolution**: Receives signals from the dish and provides a 75Ω Load. It outputs 70 dB μ V (T) / 80 dB μ V (SAT).
- MOT87W Optical Transmitter**: Receives a 1550 nm signal and outputs 80 dB μ V.
- MOCH2 31-33-00 Optical Headend**: Receives the 80 dB μ V signal and outputs to the J2469 Power supply.
- J2469 Power supply**: 20 V / 3.25 A.
- J4012 Optical Dual Receiver**: Receives signals from the MOCH2 headend.
- J4011 Optical Single Receiver**: Receives signals from the MOCH2 headend.
- J4031 Optical Receiver**: Receives signals from the MOCH2 headend.
- J4013 Optical Trial Receiver**: Receives signals from the MOCH2 headend.
- J9734 2-way dSCR multiswitch**: Receives signals from the J4012 and J4011 receivers.
- J9754 4-way dSCR Multiswitch**: Receives signals from the J4031 and J4013 receivers.
- J2499 Power supply**: 20 V / 1.2 A (multiple units).
- J2460 Power Supply**: 20 V / 3 A.
- J9669 Power Insertor**: Receives signals from the J2460 power supply.
- Legacy/dSCR STB**: Receives signals from the J9734 and J9754 multiswitches.
- TV4K ULTRA HD**: Receives signals from the Legacy/dSCR STBs.

Fiber Optical SAT



MOTX90, MOTX120

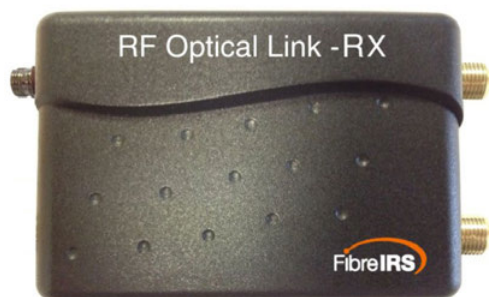


• CEI 306-2
COMPLIANT •

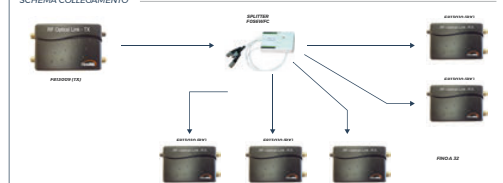
Trasmettitore TV RF ottico RACK 19": 7,8 dBm / 9,0 dBm / 12 dBm,
47-862 Mhz, connettore uscita SC/APC (fibra Single Mode)

SPECIFICHE	MOTX90	MOTX120
Potenza ottica	10 mW (10 dBm)	16 mW (12 dBm)
Frequenza	47 ÷ 870 MHz	
CNR	≥ 52 dB (classe A)	
CTB	≥ 67 dB (classe A)	
CSO	≥ 62 dB (classe A)	
Specifiche ottiche		
Tipo di laser	DFB (con isolatori ottici)	
Lunghezza d'onda	1310 nm ±20	
Tipo modulazione	Modulazione intensità luce diretta	
Connettore fibra	SC/APC	
Livello segnale ingresso RF	80 ±3 dB	
Piattezza	±0.75 dB	
Impedenza ingresso RF	75 Ω	
Perdita di ritorno ingresso RF	≤ -16 dB (47 ÷ 550 MHz) ≤ -14 dB (551 ÷ 870 MHz)	
Generiche		
MTBF	≥ 40000 h	
Temperatura operativa laser	+5° ÷ +40° C	
Alimentazione (linea)	220 Vac (86 ÷ 264 Vac)	
Consumo	50 W	
Dimensioni	480 x 350 x 44 mm	

F813009 (TX), F813010 (RX)



F813009 (TX), F813010 (RX)
SCHEMA COLLEGAMENTO



SPECIFICHE	F813009 (TX)	F813010 (RX)
Optical Characteristics		
Operating Wavelength	1310 nm	1100 ÷ 1600 nm
Return loss	20 dB min	
Receiving optical power range	Analog TV: -7 ÷ +2 Digital TV: -14 ÷ +2 Satellite TV: -20 ÷ +2	-
Optical Power	7 dBm	-
SAT, DTT, DAB and FM (Electrical)		
RF Frequency Range		
Input Power DTT	60 ÷ 92 dBµV	-
Input Power SAT	60 ÷ 85 dBµV	-
Gain Variation Across Band	4 dB max	
DC Specification		
Input Voltage Range	12 ÷ 20 Vdc	
LNB Supply Voltage	12 ÷ 20 Vdc	
Current Consumption	< 200 mA	< 140 mA
Connector		
Output	Fibre Optic FC/PC	
DTT/DAB/FM	F	-
Power Supply in/out	F	-
RF Out / Ter Out	F	
Power supply	-	2.1 mm jack
Enviromental Specification		
Operating Temperature	-20° ÷ +55° C	
Storage Temperature	-20° ÷ +65° C	
Others		
Laser Classification	Classs 1M	
Dimensions	85 x 55 x 25 mm	

FD000452, FD000411 - Satellite and terrestrial optical converter



FD000452:

Introducing the new OTx optical headend from Global Invacom.

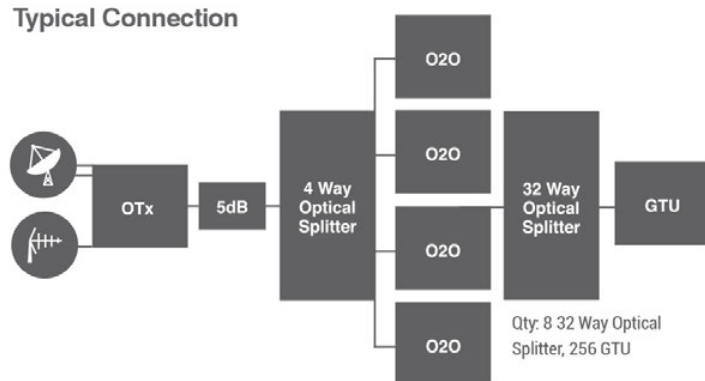
Fully compatible with all the current FibreIRS equipment and designed for future compatibility, replaces both the ODU32 and fibre LNB.

Fully compatible with all existing GTU's and SwitchBlade units. The output frequency stacking has not changed.

Main features:

- 1310 nm option either as a kit with a wideband LNB included or as a standalone unit
- Wideband LNB input. Unlike the previous ODU32 that required a specific wholeband LNB with frequencies above 5GHz, the OTx unit uses standard H & V wideband inputs
- The wideband LNB supplied in the kit uses a local oscillator set to 10.41 GHz
- Single optical output with a 7 dBm 1/32 split ratio. ODU32 units are more costly but would offer two 1/32 split optical outputs. If more than 32 splits are required, additional equipment will be needed
- IP65 rated and can therefore be installed outside. Intended to be fitted behind the dish itself. Ensure that it is mounted vertically
- 5G / 700 MHz filtered input accepting frequencies $88 \div 694$ MHz. Additional channel processing with channel conversion is recommended with transmitters that still offer COM 7 at channel 55
- Vertical leg powering of the wideband LNB only. For horizontal signal testing, it is recommended that power is fed to the LNB via the vertical leg connection of the powered OTx unit.

Typical Connection



FD000411:

The O2O (Optical to Optical) convertor from Global Invacom. Fully compatible with all the current FibreIRS headend equipment and designed for future compatibility. Replaces the functionality of the O2E and ODU32 in one compact unit.

Specifications:

- FibreIRS FC/PC optical input (1100 ÷ 1650 nm)
- Fully compatible with GI optical LNB, ODU32 & ODU32 (1550) and the new wideband LNB and OTX
- 2 x FC/PC optical outputs
- Space saving design
- Small form factor



The **O2O** has been designed to be used in conjunction with either the OTx, ODU32 or the fibre optic LNB to increase the number of subscribers that can be connected to a single dish.

FD000188, FD000187



• CEI 306-2
COMPLIANT •



• CEI 306-2
COMPLIANT •

FD000188

Ricevitore QUATTRO HVHV: output + DTT, output virtuale Ottico-Coax, alimentatore **non incluso** Serie Compact

FD000187

Ricevitore QUAD: output + DTT, output virtuale Ottico-Coax, alimentatore **non incluso** Serie Compact.

SPECIFICHE		FD000188 (QUATTRO)	FD000187 (QUAD)
DTT, DAB & FM (Elettrica)			
Frequenza RF	DTT	470 ÷ 790 MHz	
	DAB	174 ÷ 240 MHz	
	FM	88 ÷ 108 MHz	
Impedenza nominale		75 Ω	
Perdita di ritorno		10 dB (min.)	
Uscita nominale DTT Quad / Quattro		71 dBμV	78 dBμV
Variazione guadagno sulla banda		5 dB (max)	5 dB
Rejection 950-2150 MHz		35 dB	
FM,DAB,DTT & Satellite (Ottica)			
Lunghezza d'onda Ottica		da 1100 a 1650 nm	
Ingresso alimentazione Ottica		-12 dBm (min) / 3 dBm (max)	
Segnali controllo			
Selezione voltaggio verticale		10.5 V (min) / 14.5 V (max)	–
Selezione voltaggio orizzontale		15.5 V (min) / 19 V (max)	–
Banda Low / High		0 / 22 Khz	–
Specifiche Elettriche			
Tensione d'ingresso		10.5 ÷ 21 V	
Consumo corrente (Quad)	@10.5 V con solo RX1 e Rx2 alimentati	235 mA (max)	–
	@10.5 V con solo RX3 e Rx4 alimentati	235 mA (max)	–
Consumo corrente (Quad)	Totale @ 10.5 V (aliment. diretta)	470 mA (max)	–
Consumo corrente (Quatro)	@ 10.5 V	–	490 mA (max)
Specifiche generiche			
Temperature d'esercizio		-15° ÷ +50° C	
Misure		128.7 x 116.5 x 27 mm	120.8 x 80.1 x 26.3 mm
Peso		325 g	175 g

LA20D12PB1, FD000342



Alimentatore 20 Vdc per moduli **FD000187/188, F101938, F102029, F102030, FD000199.**

FD000199 - SkyQ dCSS Adapter



The Sky Q dSCR GTU converts optical power to Radio Frequency (RF) power (4 satellite bands and FM, DAB, DTT).

Terrestrial signals are overlaid onto both output ports. All units have built in Automatic Gain Control (AGC) which allows a wide dynamic range of optical levels without affecting output power and quality. One LED indicator allows the user to monitor the status of the unit. It is able to work in legacy, analogue SCR (aSCR) and digital SCR (dSCR) modes.

FD000199:

Optical to RF convertor (Satellite and FM,DAB,DTT)

- The GTU will be connected to a suitable Global Invacom FibreIRS Passive Optical Network (PON), providing minimum optical signal levels of -12.2 dBm at the connection point of the GTU.
- The GT U will be installed in a dry indoor environment.
- The installation will be carried out by a competent person.
- All ferrule end faces of the FC/PC optical connectors are cleaned prior to making a connection using a suitable fibre optic cleaning kit.
- The keyway on the FC/PC connector is aligned before tightening. Ensuring not to overtighten the connection.
- The installer has followed the installation guide for the ODU32 or optical LNB.

Cable and Connections:

Output satellite 2 x dCSS and legacy

Output 2 only supports terrestrial signals (DVB-T/T2, FM and DAB.)

Power

This unit draws power from the STB (Set Top Box) via output 1. The STB must be capable of delivering > 500 mA.

UB N°	UB CENTER FREQUENCY (MHZ)	EN50494	EN50607	USAGE
1	1210	Y	N	Legacy STB and PVR SCR compatible
2	1420	Y	N	
3	1680	Y	N	
4	2040	Y	N	
5	985	N	Y	
6	1050	N	Y	
7	1115	N	Y	
8	1275	N	Y	
9	1340	N	Y	
10	1485	N	Y	
11	1550	N	Y	
12	1615	N	Y	
13	1745	N	Y	
14	1810	N	Y	
15	1875	N	Y	
16	1940	N	Y	

User band frequency plan.

Fibra ottica / componenti attivi

2024 Q2

INDICE

P14

Extender fibra ottica HDMI / USB

P18

Extender fibra ottica TVCC

LOHD59 - Extender HDMI 4K fiber optic



**4K
UHD**

4K@60 Hz HDMI 2.0 Fiber Optic Extender

LOHD59

- Uncompressed transmits HDMI video signals up to 1.5 Km over 2 singlemode fiber cable
- Highest resolution is up to 3840 x 2160@60 Hz or 4096 x 2160@60 Hz; YUV 4:4:4
- Support EDID learning function, improve compatibility, match signal sources and display devices
- TMDs signal Lossless transmission
- Compliance with HDMI 2.0 and HDCP 1.4/2.2 standard
- Built-in automatic adjustment system, make the image smooth, clear and stable
- Built-in ESD protection system
- Wall-mounted type more convenient
- Simple to install, plug and play

PRODOTTI CORRELATI



FALCPSD

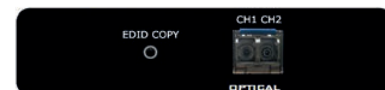


FPLCLC2S3HD

PERFORMANCE	
Protocol	HDMI 2.0, HDCP 1.4 / 2.2
Data Rate/ Pixel Clock	18 Gbps / 600 Mhz
Resolution	3840x2160@60/30 Hz; 1920x1200@60 Hz; 1920x1080@60/50 Hz /30/25/24 Hz ; 1080I@60/50 Hz, 1280x720@60/50 Hz
Audio	7.1 channel LPCM, 192 Khz, 24-bit
CONNECTIONS	
HDMI Input/Output	1 HDMI A Female
Fiber Quantity	2x LC simplex
TRANSMISSION DISTANCE	
Fiber Type / Maximum Distance	50/125 μ m OM3-300 MMF: $\leq$ 300 m, 9/125 μ m G.625D SMF: $\leq$ 1500 m
EDDI / HDCP	EDID Auto-Learning, EDID Manage, Support HDCP 1.4 / HDCP 2.2
MECHANISM	
Material	Metal Housing
Dimensions (L*W*H)	108 x 90 x 26 mm
Weight	Approximately 2x 250 g (pairs)
STORAGE	
Working Temp	0° $\div$ +50° C
Storage Temp	-20° $\div$ +70° C
Storage Humidity	5 to 95% (no condensation)
POWER SUPPLY	
Power Adapter	Input: 100 $\div$ 240 Vac / 50 - 60 Hz / 0.2 A Output : 5 Vdc - 3 A
Power Dissipation	600 $\div$ 900 mA
WARRANTY	
Limited Warranty	1 year warranty, Lifetime Maintenance.

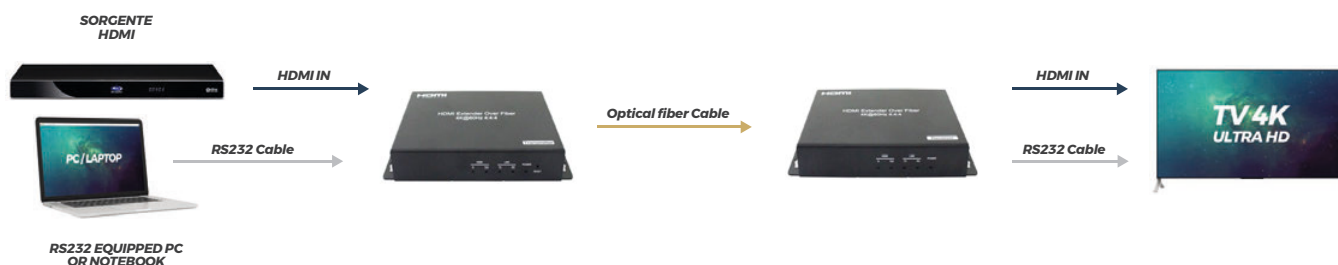
HDR

4K
UHD



LOHD59

SCHEMA COLLEGAMENTO



LOHD474KU - Extender HDMI 4K + USB per fibra ottica



TVCC

PC

4K
UHD

LOHD474KU

- Trasmette il segnale HDMI fino a 10 Km su cavo in fibra ottica SM
- Supporta risoluzioni fino a 3860 x 2160@60 Hz
- Compatibile con HDMI 1.4
- Sistema protezione HDCP 2.2
- **Supporta USB per utilizzo di mouse e tastiera**
- Semplice da installare, plug-and-play, nessun software aggiuntivo



SPECIFICA	LOHD474KU
Video	
Standard	HDMI 1.4
Risoluzione	3840 x 2160@60 Hz
Connettore	HDMI femmina tipo A
Impedenza	100 Ω
Fibra ottica	
Interfaccia	SFP con connettore LC
Tipo fibra	Single Mode
Lunghezza d'onda	1310 nm
Banda	10 Gbps
Tastiera, mouse, video	
Connessioni	PC: connettore USB tipo B Mouse/Tastiera: connettore USB tipo A
Distanza trasmissione	Fibra SM standard fino a 10Km max
Varie	
Alimentatore	5 Vdc - 1 A, dissipazione 5W max
Temperatura operativa	-10° ÷ +55° C
Dimensioni	163 x 86 x 24 mm

PRODOTTI CORRELATI



FALCPSD



FPLCLC2S3HD

LOHD474KU

SCHEMA COLLEGAMENTO



LOHD27N - Extender HDMI + IR + Analog audio fiber optic



**NEW
+
AUDIO**

HDMI+AUDIO+IR RECEIVER



LOHD27N

- Aluminum shell, small volume, lightweight design, more beautiful, strong anti-interference ability; wall-mounted type more convenient
- Using Single Mode Fiber to transmit 20 Km
- Video resolution up to 1920 x 1080@60 Hz
- The sender supports HDMI local loop output
- HDMI 1.3 and HDCP 1.2 standards
- Support infrared (wide band) signal return control**
- Supporto analog stereo channel audio**
- High compatibility, automatic matching of signal sources and display devices
- Built-in automatic adjustment system for smooth, clear and stable image
- Built-in ESD electrostatic protection circuit, easy to install, plug and play
- Real-time Video / Audio Transmission from HDMI to Fiber based on IP



SPECIFICA	LOHD27N
Video	
Standards	HDMI 1.3, HDCP 1.2
Maximum pixel clock	148.5 MHz
Risoluzione	Up to 1920 x 1080P@60 Hz
Connettore	Femmina HDMI-A
Audio	
Tipo segnale	Stereo analogico
Interfaccia	jack standard 3.5 mm
Campionamento	24 bit
Dinamica / SNR	96 dB
Infrarosso	
Interfaccia	jack standard 3.5 mm
Tipo di segnale	Digitale
Trasmissione	Unidirezionale
Frequenza	20 ÷ 60 KHz
Fibra Ottica	
Interfaccia	1x HDMI / 1x conn. FC
Tipo fibra	Single Mode / Multi Mode
Lunghezza d'onda	1310 nm, 1510 nm
Distanza trasmissione	20 Km max
Varie	
Alimentazione	5 Vdc - 1 A
Potenza dissipata	Max 2.5 W
Temperatura d'esercizio	-20° ÷ +70° C
Dimensioni	104 x 104 x 28 mm

PRODOTTI CORRELATI



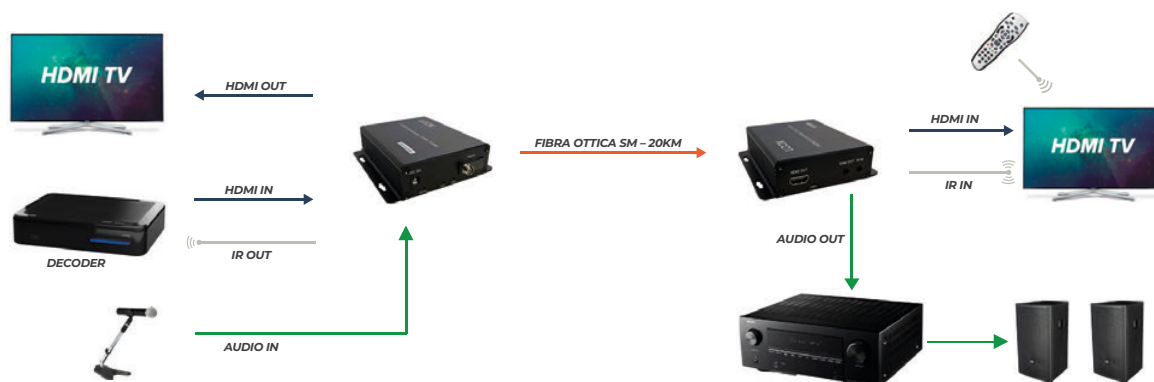
FA-FCP-SS



FOFAL****

LOHD27N

SCHEMA COLLEGAMENTO



LOHD47N - Extender HDMI + USB + IR + Analog audio fiber optic



**NEW
+
AUDIO**

HDMI LOOP+AUDIO+IR TRANSMITTER

LOHD47N

- Aluminum shell, small volume, lightweight design, more beautiful, strong anti-interference ability; wall-mounted type more convenient
- Using single Mode Fiber to transmit 20 Km
- Video resolution up to 1920 x 1080@60 Hz
- The sender supports HDMI local loop output
- HDMI 1.3 and HDCP 1.2 standards
- Support USB with keyboard and mouse control**
- Supporto analog stereo channel audio**
- High compatibility, automatic matching of signal sources and display devices
- Built-in automatic adjustment system for smooth, clear and stable image
- Built-in ESD electrostatic protection circuit, easy to install, plug and play
- Real-time Video / Audio Transmission from HDMI to Fiber based on IP
- OPTIONAL: support infrared (wide band) signal return control**



SPECIFICA	LOHD47N
Video	
Standards	HDMI 1.3, HDCP 1.2
Maximum pixel clock	148.5 MHz
Risoluzione	Up to 1920 x 1080P@60 Hz
Connettore	Femmina HDMI-A
USB	
Connettori	USB-A 1.1
Segnale	USB HID
Audio	
Tipo segnale	Stereo analogico
Interfaccia	jack standard 3.5 mm
Campionamento	24 bit
Dinamica / SNR	96 dB
Infrarosso	
Interfaccia	jack standard 3.5 mm
Tipo di segnale	Digitale
Trasmissione	Unidirezionale
Frequenza	20 ÷ 60 KHz
Fibra Ottica	
Interfaccia	1x HDMI / 1x conn. FC
Tipo fibra	Single Mode / Multi Mode
Lunghezza d'onda	1310 nm, 1510 nm
Distanza trasmissione	20 Km max
Varie	
Alimentazione / Consumo	5 Vdc - 1 A / Max 2.5 W
Temperatura d'esercizio	-20° ÷ +70° C
Dimensioni	104 x 104 x 28 mm

PRODOTTI CORRELATI



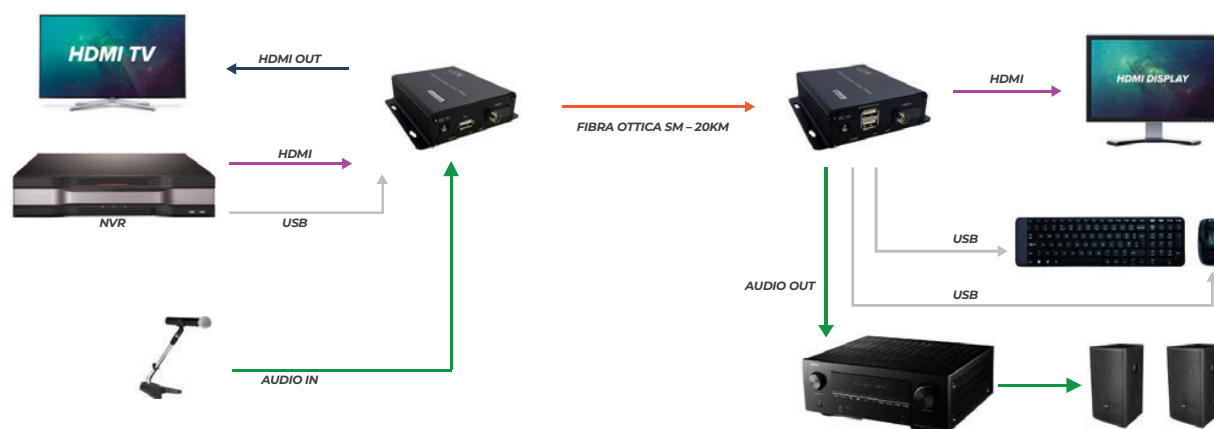
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FOFAL****

LOHD47N

SCHEMA COLLEGAMENTO



LO59xVTR1DFSW, LO9xVTR1DFSW



LO591VTR1DFSW

5 MP

2 MP

LO591VTR1DFSW: 5MP, TX+RX 1 canale
AHD/TVI/CVI 1080p, 960H + 1 RS 485 Data

LO592VTR1DFSW: 5MP, TX+RX 2 canali
AHD/TVI/CVI 1080p, 960H + 1 RS 485 Data

LO91VTR1DFSW: 1080p, TX+RX 1 canale
AHD/TVI/CVI 1080p, 960H + 1 RS 485 Data

LO92VTR1DFSW: 1080p, TX+RX 2 canali
AHD/TVI/CVI 1080p, 960H + 1 RS 485 Data

SPECIFICA	LO591VTR1DFSW / LO592VTR1DFSW		LO91VTR1DFSW / LO92VTR1DFSW	
Modello	TX	RX	TX	RX
Ingresso	1x / 2x BNC 1x RS-485	fibra FC/PC	1x / 2x BNC 1x RS-485	fibra FC/PC
Uscita	fibra FC/PC	1x / 2x BNC 1x RS-485	fibra FC/PC	1x / 2x BNC 1x RS-485
Video				
Interfaccia	BNC			
Impedenza	75 Ω			
Ampiezza video	1.0 Vpp typ.			
Risoluzione	5MP / 4MP / 3MP / 1080p / 720p / 960H		AHD / TVI / CVI / 1920x1080 / 960H	
Guadagno differenziale (10%-90% APL)	< ±1.5 %		< ±1 % typ.	
Guadagno di fase (10%-90% APL)	< ±1 % typ.			
SNR	> 60 dB (8Bit)			
Interfaccia Ottica				
Lunghezza d'onda	1310 / 1550 nm		1310 / 1470 / 1610 nm	
Tipo cavo fibra ottica	9/125 μ single mode			
Potenza in uscita tipica	-8 ÷ -3 dBm		-3 ÷ -9 dBm	
Sensibilità ricezione	-26 dBm			
Interfaccia	FC/PC			
Varie				
Alimentazione	110 ÷ 240 Vac / 5 Vdc - 2 A			
Temperatura d'esercizio	-15° ÷ +65° C		0° ÷ +60° C	

LO59xVTR1DFSW, LO9xVTR1DFSW



LO594VTR1DFSW

5 MP

2 MP

LO594VTR1DFSW: 5MP, TX+RX 4 canali AHD/
TVI/CVI 1080p, 960H + 1 RS 485 Data One Way

LO598VTR1DFSW: 5MP, TX+RX 8 canali AHD/TVI/
CVI 1080p, 960H + 1 RS 485 Data One Way

LO94VTR1DFSW: 1080p, TX+RX 4 canali AHD/
TVI/CVI 1080p, 960H + 1 RS 485 Data One Way

LO98VTR1DFSW: 1080p, TX+RX 8 canali AHD/TVI/
CVI 1080p, 960H + 1 RS 485 Data One Way

SPECIFICA		LO594VTR1DFSW / LO598VTR1DFSW		LO94VTR1DFSW / LO98VTR1DFSW	
Modello	TX	RX	TX	RX	
Ingresso	4x / 8x BNC 1x RS-485	fibra FC/PC	4x / 8x BNC 1x RS-485	fibra FC/PC	
Uscita	fibra FC/PC	4x / 8x BNC 1x RS-485	fibra FC/PC	4x / 8x BNC 1x RS-485	
Video					
Interfaccia	BNC				
Impedenza	75 Ω				
Ampiezza video	1.0 Vpp typ.				
Risoluzione	5MP / 4MP / 3MP / 1080p / 720p / 960H			AHD / TVI / CVI / 1920x1080 / 960H	
Guadagno differenziale (10%-90% APL)	< ±1.5 %			< ±1% typ.	
Guadagno di fase (10%-90% APL)	< ±1°			< ±1% typ.	
SNR	> 67 dB			> 60 dB (8 Bit)	
Interfaccia Ottica					
Lunghezza d'onda	1310 / 1550 nm			1310 / 1470 / 1610 nm	
Tipo cavo fibra ottica	9/125 μ single mode				
Potenza in uscita tipica	-8 ÷ -3 dBm			-3 ÷ -9 dBm	
Sensibilità ricezione	-26 dBm				
Interfaccia	FC/PC				
Varie					
Alimentazione	110 ÷ 240 Vac / 5Vdc - 2A				
Temperatura d'esercizio	-15° ÷ +65° C			0° ÷ +60° C	

LO7xVTR1DFSW



LO72VTR1DFSW



LO71VTR1DFSW: TX + RX 1 canale AHD / TVI / CVI 1080p, 960H + 1 RS 485 Data One Way, 1x Fibra Multi Mode con connettore ST/PC, portata fino a 500 m.

LO72/74VTR1DFSW: TX + RX 2/4 canali AHD / TVI / CVI 1080p, 960H + 1 RS 485 Data One Way, 1x Fibra Multi Mode con connettore ST/PC, portata fino a 300 m.

SPECIFICA	LO71VTR1DFSW / LO72VTR1DFSW		LO74VTR1DFSW	
Modello	TX	RX	TX	RX
Ingresso	1x/2x BNC 1x RS-485	1x/2x BNC 1x RS-485	4x BNC 1x RS-485	4x BNC 1x RS-485
Uscita	Fibra ST/PC			
Video				
Interfaccia	BNC			
Impedenza	75 Ω			
Ampiezza video	1.0 Vpp typ.			
Risoluzione	AHD / TVI / CVI / 1920x1080 / 960H			
Guadagno differenziale (10%-90% APL)	< ±1% typ.			
Guadagno di fase (10%-90% APL)	< ±1% typ.			
SNR	> 60 dB (8Bit)			
Interfaccia Ottica				
Lunghezza d'onda	1310 / 1470 / 1610 nm			
Tipo cavo fibra ottica	50 / 125 μ Multi Mode			
Potenza in uscita tipica	-3 ÷ -9 dBm			
Sensibilità ricezione	-26 dBm			
Varie				
Alimentazione	110 ÷ 240 Vac / 5 Vdc - 2 A			
Temperatura d'esercizio	0° ÷ +60° C			

LOUSB3SMFC, LOUSB3MMST



LOUSB3SMFC:
KIT trasmettitore + ricevitore estensore USB
Trasmettitore supporta:
2x USB tastiere, mouse o memorie USB
Ricevitore supporta:
1x USB PC NVR/DVR.
Connettore fibra FC/PC.

SPECIFICA	LOUSB3SMFC	LOUSB3MMST
Fibra Ottica		
Connettore	1x SM FC/FC	2x MM SC/ST
Lunghezza d'onda	1310 / 1550nm	
Portata	20 Km	
Alimentazione		
Voltaggio	5 Vdc	
TX / RX consumo	< 3.5 W	
Varie		
Case	Alluminio nero	
Dimensioni	104 x 104 x 28 mm	
Peso (netto)	0.75 Kg	
Temperatura d'esercizio	-20° ÷ +70° C	

LO121VTRDFSW, LO31VTRDFSW



LO121VTRDFSW: TX+RX 1 canale HD-SDI 4K UHD + 1 RS 485 Data one way + 1 Fibra Single mode
Connettore di uscita FC/PC. Portata 10 Km

LO31VTRDFSW: TX+RX 1 canale HD-SDI 1080p + 1 RS 485 Data one way + 1 Fibra Single mode .
Connettore di uscita FC/PC. Portata 10 Km

LO91VTR1D2A2KLFS, LO91VTR2B2A5KLFS



LO91VTR1D2A2KLFS: TX+RX Ottico 1 ch Video +1 ch Bi-Di Audio + 1 ch RS485 Data + 2 x Contatti Bi-Di NC/NA + Lan 10/100 Single Mode conn. FC/PC 20 Km

LO91VTR2B2A5KLFS: TX+RX Ottico 1 ch Video +1 ch Bi-Di Audio + 2 ch BI-DI RS485 Data + 4 x Contatti Bi-Di NC/NA + 1 x NC/NA Fibra loss + Lan 10/100 Single Mode. FC/PC 20 Km

LO11xT1DFSW, LO12xT1DFSW, LO14xT1DFSW



LO11xT1DFSW: Trasmettitore 1x Video 1080p + 1 Way RS485 Data Single mode Ottico Conn. Uscita FC/PC (fibra Single Mode)

LO12xT1DFSW: Trasmettitore 2x Video 1080p + 1 Way RS485 Data Single mode Ottico Conn. Uscita FC/PC (fibra Single Mode)

LO14xT1DFSW: Trasmettitore 4x Video 1080p + 1 Way RS485 Data Single mode Ottico Conn. Uscita FC/PC (fibra Single Mode)

SPECIFICHE		
Modello	TX	
Ingresso	1x/2x BNC / 1x RS-485	4x/8x BNC / 1x RS-485
Uscita	Fibra FC/PC	Fibra FC/PC
Video		
Interfaccia	BNC	
Impedenza	75 Ω	
Ampiezza video	1.0 Vpp typ.	
Risoluzione	1920 x 1080 px	
Guadagno differ. (10%-90% APL)	< ±1 % typ.	
Guadagno di fase (10%-90% APL)	< ±1 % typ.	
SNR	> 60 dB (8Bit)	
Interfaccia Ottica		
Lunghezza d'onda	1310 - 1470 - 1610 nm	
Tipo cavo fibra ottica	9/125 μ Single Mode	
Potenza in uscita tipica	-3 ÷ -9 dBm	
Sensibilità ricezione	-26 dBm	
Interfaccia	FC/PC	
Varie		
Alimentazione	110 ÷ 240 Vac, 5 Vdc - 2A	
Temperatura d'esercizio	0° ÷ +60° C	

LOFMTR9SC, LOIFC9SC, LOFMTR50SC



LOFMTR9SC: TX + RX ottico Single Mode adatto per trasporto BUS per centrali allarme RS-232/422/485 9/125 SC/PC 20 Km

LOIFC9SC: Stesse caratteristiche tecniche di **LOFMTR9SC**, ma con montaggio a barra DIN

LOFMTR50SC: TX + RX ottico MultiMode adatto per trasporto BUS per centrali allarme RS-232/422/485 50/125 SC/PC 1 Km

Fiber modem is a multi-function and economic RS-232/422/485 interface fiber optic product. Is the best choice to connect RTU to HOST or SCADA controller. It uses Optic fiber as transmission media, increasing the system transmitting function.

Function and characteristic:

- Support RS-232/422/485 interface
- Asynchronous, point to point, rate up 115 Kbps
- Support 5 Vdc power input, consumption 2 W
- 1500 W surge protection, 15 KV static protection
- RS-232/422 port support 32 node (can choose hand tailor 128 node)
- Working wavelength: 1310 nm (MultiMode and Single Mode)
- Auto test signal rate, zero delay, auto-transmit
- Transmit distance: RS-232 port 15 m, RS422/485 port 1500 m, optical port MultiMode 2 Km, Single Mode 20 Km
- Working temperature -25° to +70°C
- Dimensions: 110 x 104 x 28 mm

Fibra ottica / componenti attivi

2024 Q2

INDICE

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Media converter SC Single Mode

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Media converter SFP 100M/1G/10G

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Media converter 10G OEO

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Media converter industriali per fibra ottica

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Switch POE + SFP 1G (10G uplink) Managed L3

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Switch industriali POE + SFP 1G Managed L2

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Mini switch industriali 2/4/8 POE + SFP 1G L2

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Mini switch POE PD 1G L2

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Switch industriali SFP 1G/10G Managed L2

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Mini switch bypass fibra 4/8 POE + SFP 1G Managed L2

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Bypass fibra LC/SC - SM e MM

LOMCK1GSCS (KIT) - Mediaconverter su fibra ottica



LOMCK1GSCS

Kit composto di LOMCK1GSC53 e LOMCK1GSC35

- 1x 1000Base-SX to 1x 10/100/1000Base-T Port
- RJ45 support auto MDI/MDI-X function
- Auto-negotiation speed, half/full-duplex
- Each port has the complete LED Indicator light
- Support IEEE802.1d Spanning Tree
- Supports high performance QoS function on each port
- Flow control fully supported
- Support broadcast storm protection
- Wide-range redundant power design (5 ÷ 16 Vdc)
- 1x9 fixed fiber module or SFP slot optional
- Support max forwarding packet length 9K bytes option
- Requires no configuration and will instantly operate as soon as you power it up
- Small volume
- Low power consumption

SPECIFICA	LOMCK1GSCS
Protocol Standards	IEEE802.3 10Base-T / IEEE802.3u 100Base-TX/FX IEEE802.3ab 1000Base-T / IEEE802.3z 1000Base-SX LX / IEEE802.3x Flow control / IEEE802.1q VLAN / IEEE802.1pQoS / IEEE802.1d Spanning Tree
RJ45 Ports Parameters	
Connector	RJ45
Transmission Rate	10/100/1000 Mbps
UTP Type	UTP-5e or higher
Distance	0 ÷ 100 meters
Fiber Port Parameters	
Connector	SC Simplex Port
Data rate	1.25 Gbps
Optical wavelength	1310 / 1550 nm
Distance	10 Km
Performance	
Processing Type	Store and forward
MAC Table Size	2K
Buffer Space	1 Mb
Maximum Packet Length	9 Kb
Time Delay	<20 µs
Power	
Input voltage	100 ÷ 240 Vac - 50/60 Hz
Connector	DC socket
Working Voltage	5 ÷ 16 Vdc
Power Consumption	0.75 ÷ 3 W
Environment	
Storage temperature	-40° ÷ +70° C
Operating temperature	-10° ÷ +55° C
Relative humidity	5 ÷ 95% (no condensation)
Physical characteristics	
Dimension	62.3 x 42.3 x 22 mm
Weight	0.1 Kg
Color	Metal and black



LOMCK1GSCS (KIT)

SCHEMA COLLEGAMENTO



1 FIBRA OTTICA SINGLE MODE



LOMCXESFP, LOLXGxxx - Mediaconverter su fibra ottica



LOMCXESFP



LOLXGxxx

SPECIFICHE	
Velocità trasmissione	10Gbps
Protocolli	IEEE802.3an (10Gbase-T) IEEE802.3ae (10Gbase-SR/LR/ER/ZR)
Tipo di accesso	10G LAN
Tipo di interfaccia	RJ45 To/From SFP+ RJ45 To/From XFP
Distanza di trasmissione	XFP / SFP+ module: Up to 80 Km 10Gbase-T: 100 m Cat. 6a cable
Maximum Packet Forwarding Rate	14,880,950/S
Alimentazione	100 ÷ 240 Vac – 50 / 60 Hz 40 ÷ 50 Vdc – 50 / 60 Hz
Consumo	≤ 6W (senza modulo)
Dimensioni	90 x 60 x 22 mm

LOMCXESFP: Media converter, con porta RJ45 da 10G, auto-sensing per SFP slot, LC Duplex - SC Simplex.

LOLXG02D: Modulo SFP 10G BASE-LRM, 1310 nm FP, MM, 220 m, Duplex LC

LOLXG10D: Modulo SFP 10G BASE-LR 1310nm DFB, SM, 10km, Duplex LC

LOLXG20D-27: Modulo SFP 10G BASE-BX-U BiDi 1270nm TX / 1330nm RX, LC 20 km, with Digital Diagnostic Monitoring, 0° ÷ +70°C

LOLXG20D-33: Modulo SFP 10G BASE-BX-D BiDi 1330nm TX / 1270nm RX, LC 20 km, with Digital Diagnostic Monitoring, 0° ÷ +70°C

LOMCGESFP, LOMC2RGESFP, LOLGxxx



LOMCGESFP



LOLGxxx

SPECIFICHE	
Protocollo	IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX IEEE 802.3ab 1000Base-T IEEE802.3z 1000Base-SX/LX
Connessioni	
RJ45	10/100/1000 Mbps, Auto MDI/MDI-X UTP/STP Cat. 3, 4, 5 Cable EIA/TIA-568 100 Ω (100 m)
Connessione Fibra Ottica	
Fibra Ottica	1000 Mbps, 1000Base-SX/LX/ZX (SC/ST/FC connector) – Single Mode 0 ÷ 120 Km
Connettore	LC
Lunghezza d'onda	1310 nm
Potenza max trasmissione	≥ -10
Sensibilità	≤ -25
Varie	
Trasferimento dati	10 Mbps, 100 Mbps, 1000 Mbps
Voltaggio ingresso	100-240 Vac; 12 ÷ -48 Vdc
Voltaggio uscita	5 Vdc / 2 A
Consumo	1 ÷ 5 W
Temperatura operativa	0° ÷ 55° C
Dimensioni	90 x 60 x 22 mm
Peso (lordo)	0.4 Kg

LOMCGESFP: media converter, con porta RJ45 10/100/1000M auto-sensing per slot SFP LC Duplex - SC Simplex.

LOLGRJ45: Modulo RJ45 Rame su slot SFP 10/100/1000 BASE-T

LOLG1G04D: Modulo SFP 1000BASE, 850 nm, FP, MM, 0,5 Km, 10dB DDMI Duplex LC

LOLG1G06D: Modulo SFP 1000BASE, 1310 nm, FP, MM, 2 Km, 10 dB DDMI Duplex LC

LOLG1G06D-35: Modulo SFP 1000BASE-BX-U (TX 1310 RX1550) BIDI 1310 nm, MM, 2 Km, 10 dB FP Simplex LC

LOLG1G06D-53: Modulo SFP 1000BASE-BX-D (TX 1550 RX1310) BIDI 1550 nm, MM, 2 Km, 10 dB FP Simplex LC

LOLG1G20D: Modulo SFP 1000BASE-LX 1310 nm, FP, SM, 20 Km, 15 dB DDMI Duplex LC

LOLG1G20D-35: Modulo SFP 1000BASE-BX-U (TX 1310 RX1550) BIDI 1310 nm, FP, SM, 20 Km, 14 dB DDMI Simplex SC

LOLG1G20D-53: Modulo SFP 1000BASE-BX-D (TX 1550 RX1310) BIDI 1550 nm DFB, SM, 20 Km, 14 dB DDMI Simplex SC

LOLG1G20D-34: Modulo SFP 1000BASE-BX-U (TX 1310 RX1490) BIDI 1310 nm, FP, SM, 20 Km, 14 dB DDMI Simplex SC

LOLG1G20D-43: Modulo SFP 1000BASE-BX-D (TX 1490 RX1310) BIDI 1490 nm DFB, SM, 20 Km, 14 dB DDMI Simplex SC

LOMC2RGESFP: media converter con 2x RJ45 10/100/1000M auto-sensing per SFP slot LC Duplex - SC Simplex. Dimensioni 90 x 60 x 22 mm.

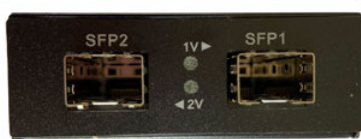


LOMC2RGESFP

LOMC2R2GESFP, LOLG1Gxxx - Mediaconverter su fibra ottica



LOMC2R2GESFP



1 GB

LOMC2R2GESFP

- 2x 10/100/1000Base-T Port (4x 1000)
- 2x RJ45 support auto MDI/MDI-X function
- Auto-negotiation speed, half/full-duplex
- Each port has the complete LED Indicator light
- Support IEEE802.1d VLAN tag, Spanning Tree
- Flow control fully supported
- Supports over-sized packets up to 1552 Bytes
- Requires no configuration and will instantly operate as soon as you power it up

SPECIFICA	LOMC2R2CGESFP
Protocol Standards	IEEE802.3 10Base-T / IEEE802.3u 100Base-TX/FX / IEEE802.3ab 1000Base-T / IEEE802.3z 1000Base-SX/LX / IEEE802.3x Flow control / IEEE802.1q VLAN / IEEE802.1pQoS / IEEE802.1d Spanning Tree
RJ45 Ports Parameters	
Connector	2x RJ45
Transmission Rate	10/100/1000 Mbps
UTP Type	UTP-5e or higher
Distance	0 ÷ 100 m
Fiber Port Parameters	
Connector	2x SFP slot
Data rate	1.25 Gbps
Optical wavelength	MM 850, 1300, 1310 nm / SM 1310, 1550 nm
Distance	MM up to 5 Km / SM up to 60 Km
Power	
Input voltage	100 ÷ 240 Vac - 50/60 Hz
Connector	DC socket
Working Voltage	5 Vdc - 2A
Power Consumption	10W max
Environment	
Storage temperature	-40° ÷ +105° C
Operating temperature	-10° ÷ +70° C
Relative humidity	5 to 90% (no condensation)
Physical characteristics	
Dimension	95 x 70 x 26 mm
Weight	0.15 Kg
Color	Metal and black



LOLG1Gxxx

LOLG1G04D: Module SFP 1000BASE, 850 nm FP, MM, 0,5 Km, 10 dB DDMI Duplex LC

LOLG1G06D: Module SFP 1000BASE, 1310 nm FP, MM, 2 Km, 10 dB DDMI Duplex LC

LOLG1G06D-35: Modulo SFP 1000BASE-BX-U (TX 1310 - RX1550) BIDI 1310 nm, MM, 2 Km, 10 dB FP Simplex LC

LOLG1G06D-53: Modulo SFP 1000BASE-BX-D (TX 1550 - RX1310) BIDI 1550 nm, MM, 2 Km, 10 dB FP Simplex LC

LOLG1G20D: Module SFP 1000BASE-LX 1310 nm FP, SM, 20 Km, 15 dB DDMI Duplex LC

LOLG1G20D-35: Module SFP 1000BASE-BX-U (TX 1310 - RX1550) BIDI 1310 nm FP, SM, 20 km, 14 dB DDMI Simplex SC

LOLG1G20D-53: Module SFP 1000BASE-BX-D (TX 1550 - RX1310) BIDI 1550 nm DFB, SM, 20 Km, 14 dB DDMI Simplex SC

LOMC2R2CGESFP

SCHEMA COLLEGAMENTO



LOMCFESFP, LOLF1xxx - Mediaconverter su fibra ottica



LOMCFESFP



LOLF1xxx

SPECIFICHE	
Protocollo	IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX/100Base-FX
Conessioni	
RJ45	1× 10/100BaseT(X), Auto-negotiation, Auto MDI/MDI-X UTP/STP Cat. 3, 4, 5 Cable EIA/TIA-568 100 Ω (100 m)
Connessione Fibra Ottica	
Fibra Ottica	1× 100Base-FX (SC/ST/FC connector) Single Mode 0 ÷ 120 Km
Connettore	LC
Lunghezza d'onda	1310 nm
Potenza max trasmissione	≥ -12
Sensibilità	≤ -36
Varie	
Trasferimento dati	10Mbps, 100Mbps
Voltaggio ingresso	100 ÷ 240 Vac; 12 / -48 Vdc
Voltaggio uscita	5 Vdc / 1 A
Consumo	1 ÷ 5W
Temperatura operativa	0° ÷ +55° C
Dimensioni	90 x 60 x 22 mm
Peso (lordo)	0.4 Kg

LOMCFESFP: Media converter, con porta RJ45 10/100M auto-sensing per slot SFP LC Duplex - SC Simplex.

LOLF1E06D: Modulo SFP 100BASE-FX 1310nm FP MM, 2 Km, 17 dB DDMI Duplex LC.

LOLF1E06D-35: Modulo SFP 100BASE-BX-U (TX 1310 RX1550) BIDI 1310 nm FP, MM, 2 Km, 13 dB DDMI Simplex SC.

LOLF1E06D-53: Modulo SFP 100BASE-BX-D (TX 1550 RX1310) BIDI 1550 nm FP, MM, 2 Km, 13 dB DDMI Simplex SC.

LOLF1E20D: Modulo SFP 100BASE-LX 1310 nm FP SM, 20 Km, 19 dB DDMI Duplex LC.

LOLF1E20D-35: Modulo SFP 100BASE-BX-U (TX 1310 RX1550) BIDI 1310 nm FP, SM, 20 Km, 14 dB DDMI Simplex SC.

LOLF1E20D-53: Modulo SFP 100BASE-BX-D (TX 1550 RX1310) BIDI 1550 nm DFB, SM, 20 Km, 14 dB DDMI Simplex SC.

LOM2SFP - Fiber to fiber converter



10 GB

LOM2SFP

- 125M÷11.7G OEO Converter (3R Repeater) is connection between fiber to fiber 10 Gbps equipment
- Function as fiber media converter, or as fiber repeater for long distance transmission.
- OEO for network backbone (SAN, LAN, MAN). Support SDH/SONET STM-64/OC-192 10G fiber channel 10G Ethernet etc.
- Can be applied in Telecommunication room, R&D laboratory, Data center, etc.
- 1310nm/1550nm/CWDM/DWDM Optical Wavelength Conversion. Support Loopback

SPECIFICHE	
Performance Data	Technical Indexes
Equipment function	3R Repeater
Transmission Speed	125 Mbps ÷ 11.7 Gbps
Protocols	Fast Ethernet / STS-3/STM-1 / ESCON/SBICON / STS-12/STM-4 / 1×Fiber Channel / Gigabit Ethernet 2×Fiber Channel / STS-48/STM-16 / 2.5 InfiniBand or PCI Express / 4×Fiber Channel / 8.5G Fiber Channel / SONET OC-192, SDH STM-64 (9.95Gbps) / 10G WAN (10Gbps) / 10G LAN (10.31Gbps) / OTN OTU-2 (G.709) (10.70Gbps) / 10G LAN with 255/237 FEC coding (11.09Gbps) / 10G Fiber Channel (11.32Gbps) / 10G POS
Interface Type	Type A : XFP to SFP+ / Type B : SFP+ to XFP
Transmission Distance	XFP / SFP+ module: up to 80 Km
Maximum Packet Forwarding Rate	14,880,950/S
Power requirement	Rack-mountable : 85 ÷ 220 Vac or -48 Vdc Standalone: 110 ÷ 220Vac or -48 to 5V - 2A Power consumption: ≤ 4W
Work Environment	Operating Temperature: 0 ÷ +50° C Humidity: 5 ÷ 90% (no condensation)
Dimension	Standalone: 60 x 20 x 90 mm

LSW1G2C2, LOLG1Gxxx - Mediaconverter industriale su fibra ottica



LSW1G2C2 receiver

LSW1G2C2

- 1x SFP 1G slot
- **2x monodirectional contacts, always open**
- 2x RJ45 10/100/1000Base-T Port, with the auto-negotiation speed, half/full-duplex
- Each port has the complete LED Indicator light
- Support IEEE802.3, IEEE802.3u e IEEE802.3z
- Dual power interface, over-current protection
- DIN rail installation
- Requires no configuration and will instantly operate as soon as you power it up

SPECIFICA	LSW1G2C2
RJ45 Ports Parameters	
Connector	2x RJ45
Transmission Rate	10/100/1000 Mbps
UTP Type	UTP-5e or higher
Distance	0 ÷ 100 m
Fiber Port Parameters	
Connector	1x SFP slot
Data rate	1.25 Gbps
Optical wavelength	MM 850, 1310 nm / SM 1310, 1550 nm
Distance	MM up to 2 Km / SM up to 20 Km
Contact parameters	
Type	2x monodirectional contacts, always open
Input power range	5 Vdc (dry node)
Physical interface	Industrial terminal blocks 3.81 mm
Contact Relay	240 Vac / 30 Vdc - 30W
Power	
Input voltage / Power	12 ÷ 52 Vdc - 125 mA max
Connector	6 pin industrial terminal blocks 5.08 mm
Environment	
Protection	IP40
Operating temperature	-20° ÷ +75° C
Relative humidity	5 to 95% (no condensation)
Physical characteristics	
Dimension	250 x 140 x 75 mm
Weight	0.35 Kg
Material	Aluminium alloy



LOLG1Gxxx

1 GB

LOLG1G04D: Module SFP 1000BASE, 850 nm FP, MM, 0,5 Km, 10 dB DDMI Duplex LC

LOLG1G06D: Module SFP 1000BASE, 1310 nm FP, MM, 2 Km, 10 dB DDMI Duplex LC

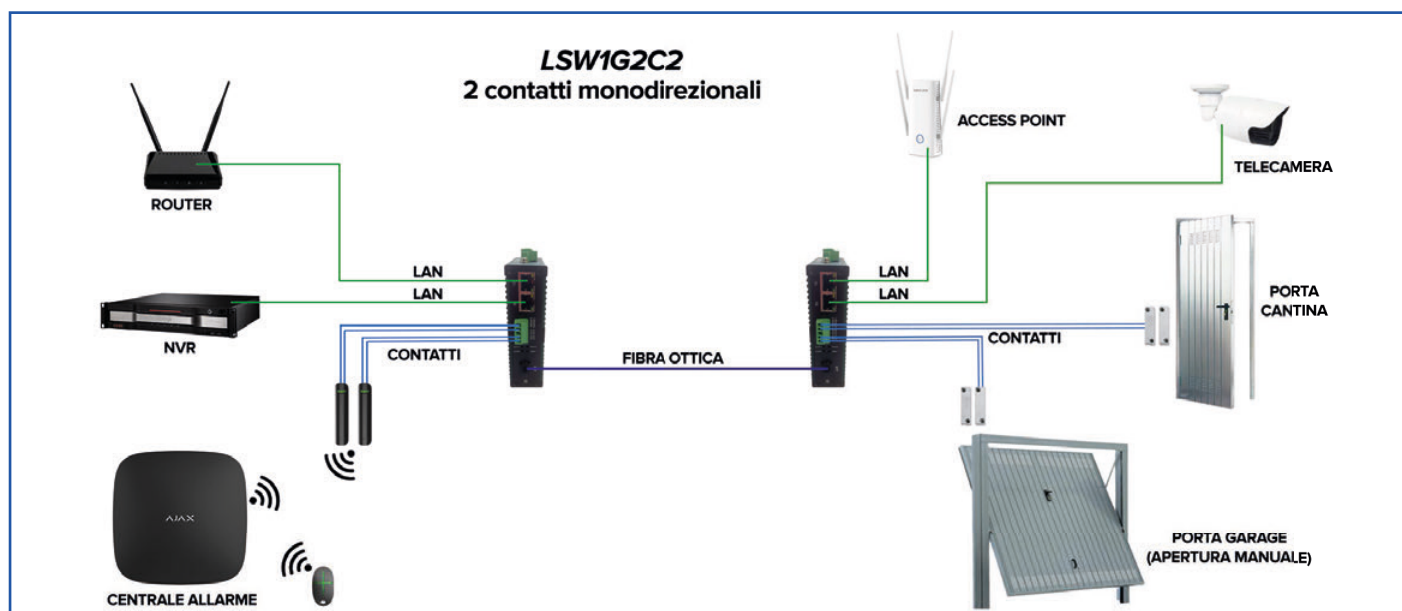
LOLG1G06D-35: Modulo SFP 1000BASE-BX-U (TX 1310 - RX1550) BIDI 1310 nm, MM, 2 Km, 10 dB FP Simplex LC

LOLG1G06D-53: Modulo SFP 1000BASE-BX-D (TX 1550 - RX1310) BIDI 1550 nm, MM, 2 Km, 10 dB FP Simplex LC

LOLG1G20D: Module SFP 1000BASE-LX 1310 nm FP, SM, 20 Km, 15 dB DDMI Duplex LC

LOLG1G20D-35: Module SFP 1000BASE-BX-U (TX 1310 - RX1550) BIDI 1310 nm FP, SM, 20 km, 14 dB DDMI Simplex SC

LOLG1G20D-53: Module SFP 1000BASE-BX-D (TX 1550 - RX1310) BIDI 1550 nm DFB, SM, 20 Km, 14 dB DDMI Simplex SC



LSW1G2CBD1, LOLG1Gxxx - Mediaconverter industriale su fibra ottica



LSW1G2CBD1 receiver

LSW1G2CBD1

- 1x SFP 1G slot
- **1x monodirectional contact, always open**
- **1x RS-485 bidirectional port**
- 2x RJ45 10/100/1000Base-T Port, with the auto-negotiation speed, half/full-duplex
- Each port has the complete LED Indicator light
- Support IEEE802.3, IEEE802.3u e IEEE802.3z
- Dual power interface, over-current protection
- DIN rail installation
- Requires no configuration and will instantly operate as soon as you power it up

SPECIFICA	LSW1G2CBD1
RJ45 Ports Parameters	
Connector	2x RJ45
Transmission Rate	10/100/1000 Mbps
UTP Type	UTP-5e or higher
Distance	0 ÷ 100 m
Fiber Port Parameters	
Connector	1x SFP slot
Data rate	1.25 Gbps
Optical wavelength	MM 850, 1310 nm / SM 1310, 1550 nm
Distance	MM up to 2 Km / SM up to 20 Km
RS485 Port parameters	
Standard	Complies with EIA RS-485
Transmission mode	Synchronous trasmission
Baud rate	50 ÷ 520 KBPS (supports non-standard baud rates)
Contact parameters	
Type / Input power range	1x contact monodirectional, always open / 5 Vdc
Contact Relay	240 Vac / 30 Vdc - 30W
Power	
Input voltage / Power	12 ÷ 52 Vdc - 125 mA max
Connector	6 pin industrial terminal blocks 5.08 mm
Environment	
Operating temperature	-20° ÷ +75° C
Relative humidity	5 to 95% (no condensation)
Protection	IP40
Physical characteristics	
Dimension / Weight	250 x 140 x 75 mm / 0.35 Kg



LOLG1Gxxx

1GB

LOLG1G04D: Module SFP 1000BASE, 850 nm FP, MM, 0,5 Km, 10 dB DDMI Duplex LC

LOLG1G06D: Module SFP 1000BASE, 1310 nm FP, MM, 2 Km, 10 dB DDMI Duplex LC

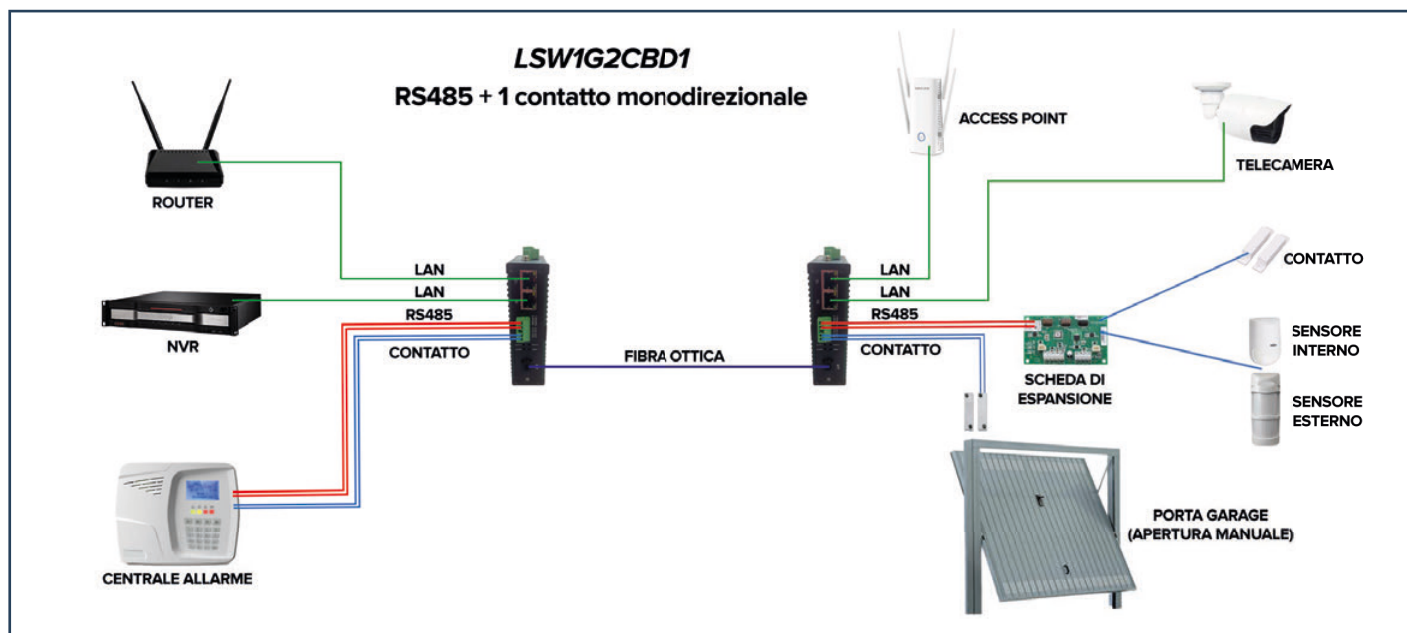
LOLG1G06D-35: Modulo SFP 1000BASE-BX-U (TX 1310 - RX1550) BIDI 1310 nm, MM, 2 Km, 10 dB FP Simplex LC

LOLG1G06D-53: Modulo SFP 1000BASE-BX-D (TX 1550 - RX1310) BIDI 1550 nm, MM, 2 Km, 10 dB FP Simplex LC

LOLG1G20D: Module SFP 1000BASE-LX 1310 nm FP, SM, 20 Km, 15 dB DDMI Duplex LC

LOLG1G20D-35: Module SFP 1000BASE-BX-U (TX 1310 - RX1550) BIDI 1310 nm FP, SM, 20 km, 14 dB DDMI Simplex SC

LOLG1G20D-53: Module SFP 1000BASE-BX-D (TX 1550 - RX1310) BIDI 1550 nm DFB, SM, 20 Km, 14 dB DDMI Simplex SC



LSW1G2C1DBD1, LOLG1Gxxx - Mediaconverter industriale su fibra ottica



LSW1G2C1DBD1 receiver

LSW1G2C1DBD1

- 1x SFP 1G slot
- **2x opposite contacts, always open**
- 2x RJ45 10/100/1000Base-T Port, with the auto-negotiation speed, half/full-duplex
- Each port has the complete LED Indicator light
- Support IEEE802.3, IEEE802.3u e IEEE802.3z
- Dual power interface, over-current protection
- DIN rail installation
- Requires no configuration and will instantly operate as soon as you power it up

SPECIFICA	LSW1G2C1DBD1
RJ45 Ports Parameters	
Connector	2x RJ45
Transmission Rate	10/100/1000 Mbps
UTP Type	UTP-5e or higher
Distance	0 ÷ 100 m
Fiber Port Parameters	
Connector	1x SFP slot
Data rate	1.25 Gbps
Optical wavelength	MM 850, 1310 nm / SM 1310, 1550 nm
Distance	MM up to 2 Km / SM up to 20 Km
Contact parameters	
Type	2x opposite contacts, always open
Input power range	5 Vdc (dry node)
Physical interface	Industrial terminal blocks 3.81 mm
Contact Relay	240 Vac / 30 Vdc - 30W
Power	
Input voltage / Power	12 ÷ 52 Vdc - 125 mA max
Connector	6 pin industrial terminal blocks 5.08 mm
Environment	
Protection	IP40
Operating temperature	-20° ÷ +75° C
Relative humidity	5 to 95% (no condensation)
Physical characteristics	
Dimension	250 x 140 x 75 mm
Weight	0.35 Kg
Material	Aluminium alloy



LOLG1Gxxx

1GB

LOLG1G04D: Module SFP 1000BASE, 850 nm FP, MM, 0,5 Km, 10 dB DDMI Duplex LC

LOLG1G06D: Module SFP 1000BASE, 1310 nm FP, MM, 2 Km, 10 dB DDMI Duplex LC

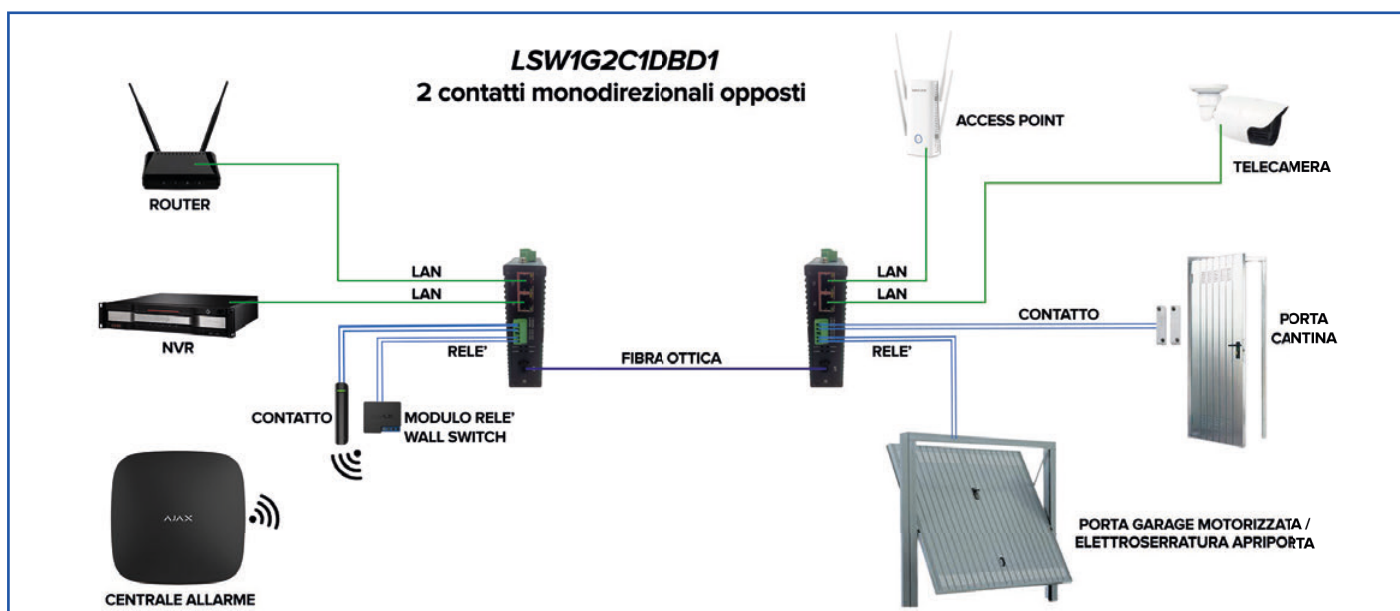
LOLG1G06D-35: Modulo SFP 1000BASE-BX-U (TX 1310 - RX1550) BIDI 1310 nm, MM, 2 Km, 10 dB FP Simplex LC

LOLG1G06D-53: Modulo SFP 1000BASE-BX-D (TX 1550 - RX1310) BIDI 1550 nm, MM, 2 Km, 10 dB FP Simplex LC

LOLG1G20D: Module SFP 1000BASE-LX 1310 nm FP, SM, 20 Km, 15 dB DDMI Duplex LC

LOLG1G20D-35: Module SFP 1000BASE-BX-U (TX 1310 - RX1550) BIDI 1310 nm FP, SM, 20 km, 14 dB DDMI Simplex SC

LOLG1G20D-53: Module SFP 1000BASE-BX-D (TX 1550 - RX1310) BIDI 1550 nm DFB, SM, 20 Km, 14 dB DDMI Simplex SC



LOHD4CT - Convertitore di contatti su fibra ottica



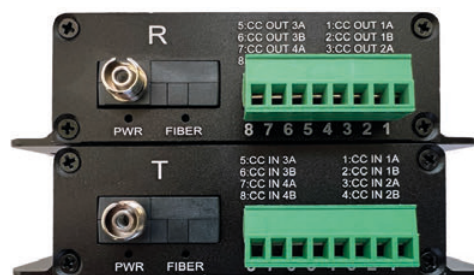
LOHD4CT trasmitter



SPECIFICA	LOHD4CT
Fiber Port Parameters	
Connector	1x FC/PC
Module rate	155 Mbps
Optical wavelength	Single Mode 1310, 1550 nm
Distance	Single Mode up to 20 Km
Contact parameters	
Type	4x monodirectional contacts, always open
Input power range	5 Vdc (dry node)
Physical interface	Industrial terminal blocks 3.81 mm
Contact Relay	240 Vac / 30 Vdc - 30W
Power	
Working voltage	5 Vdc - 2.0 A max
Connector	DC socket
Environment	
Operating temperature	-20° ÷ +75° C
Relative humidity	5 to 95% (no condensation)
Physical characteristics	
Dimension	104 x 104 x 28 mm
Weight	0.35 Kg (pairs)
Material	Aluminium alloy

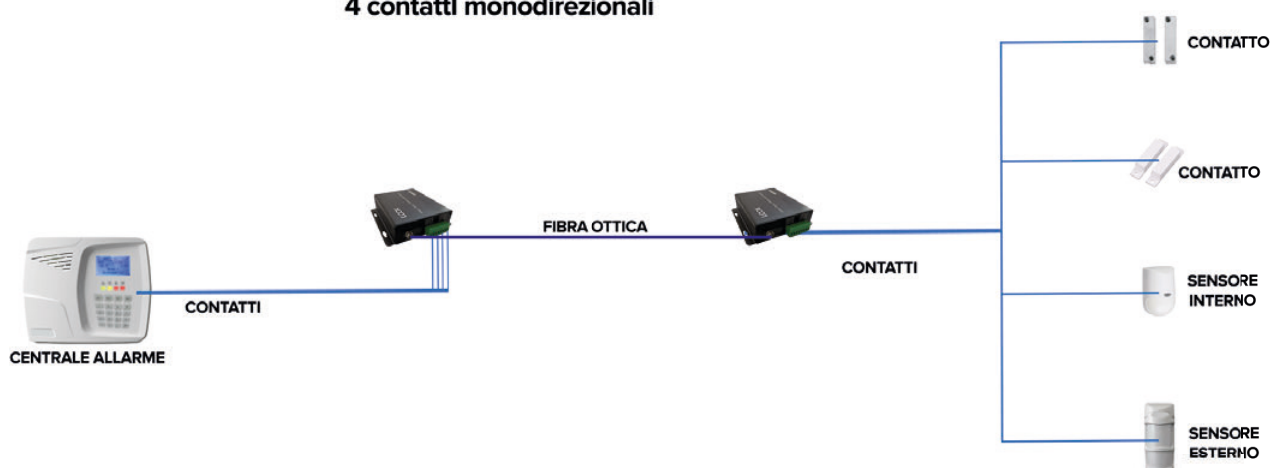
LOHD4CT

- 1x connector FC/PC for Single Mode fiber
- **4x monodirectional contacts, always open**
- Contact relay 240 Vac / 30 Vdc - 30W max
- DC socket for power supply
- Over-current protection build-in
- Bracket for installation
- Requires no configuration and will instantly operate as soon as you power it up

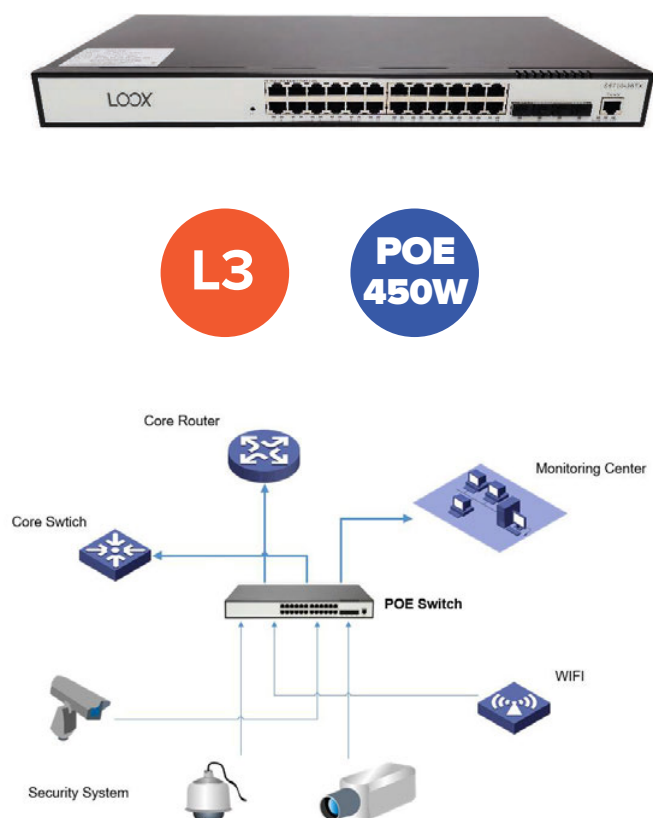


LOHD4CT transmitter+receiver

LOHD4CT 4 contatti monodirezionali



3FS5710-28TP, LOLXGxxx - Managed POE Layer 3 switch



SPECIFICA	3FS5710-28TP
Protocol Standards	IEEE 802.3, IEEE802.3U, IEEE802.3ab, IEEE802.3z, IEEE802.1d STP, IEEE802.1w RSTP, IEEE802.1s MSTP, ITU-T G.8023 EPR/Y.1344, IEEE802.1Q, IEEE802.1X, IEEE802.3ad, IEEE802.3x, IEEE802.3af, IEEE802.3at, IEEE802.1ad, IEEE802.1p, IEEE802.1ab, IEEE802.3az
Switch capacity	128 Gbps
MAC address table	16K
Packet forwarding rate	95 Mpps
Multicast / Route	1 K / 512
RJ45 Ports Parameters	
Connector	24x UTP RJ45 + 1x RJ45 (console)
Transmission Rate	10/100/1000 Mbps
UTP Type	UTP-5e or higher
Distance	0 ÷ 100 meters
Fiber Port Parameters	
Connector	4x 10 Gbps SFP+ (uplink)
Distance	Transmission up to 100 Km
Power	
Input voltage	100 ÷ 240 Vac - 50 / 60 Hz
Power Consumption	450 W max (POE load)
Environment	
Operating temperature	-10° ÷ +55° C
Relative humidity	10 to 90% (no condensation)
Physical characteristics	
Dimension	440 x 260 x 44 mm
Weight	5,0 Kg

The **3FS5710-28TP** switch is a carrier-grade weak Layer 3 POE switch, which is oriented to enterprise networks and operator customers of various scales, and can meet the needs of cost-effective Gigabit POE access and 10 Gigabit uplink. **3FS5710-28TP** supports 24 gigabit POE access ports, the device supports powerful QoS and ACL functions, supports IP+MAC+port binding and other security features, supports service flow classification and packet priority marking. Support static packet sampling, SFLOW function, support multi-port mirroring analysis function, support static and flexible QinQ function, support Ethernet OAM 802.3ag (CFM), 802.3ah (EFM), support policy-based IPV4/6 uni-cast routing, support Flexible forwarding strategy. Support 4K VLAN, dual tag VLAN and VLAN based on port, MAC and protocol.

Main features

- Support IPv4 / IPv6 dual protocol stack platform based on Linux operating system
- Support multiple link redundancy and network redundancy protocols such as STP / RSTP / MSTP / ERPS / LACP / PTP
- Support port speed and flow speed limit function, port based and service flow based mirroring functions
- Support classification based on service flow and Qos flow control function
- Support queue scheduling algorithms such as SP WRR / SP + WRR
- Support DHCP Server and DHCP Relay, DHCP attack automatic protection based on Mac Address and user blocking functions
- Support L2 Tunnel, remote loop detection function
- Support Ethernet OAM protocol such as CFM / EFM
- Support ARP attack automatic protection and user blocking functions, DDOS and virus attack protection
- Support DHCP snooping / IP source Guard / 802.1 and other security features
- Support link protection functions such as BFD, FlexLink, LACP and ERPP
- Support remote user authentication based on Tacacs+, Radius, and Local user authentication, remote upgrade through FTP and TFTP
- Support WEB based configure operation management, support SNMP V1/V2/V3



LOLXGxxx

10 GB

LOLXG02D: Module SFP 10G BASE-LRM, 1310 nm FP, MM, 220 m, Duplex LC

LOLXG10D: Modulo SFP 10G BASE-LR 1310nm DFB, SM, 10km, Duplex LC

LOLXG20D-27: Modulo SFP 10G BASE-BX-U BiDi 1270nm TX / 1330nm RX, LC 20 km, with Digital Diagnostic Monitoring, 0° ÷ +70°C

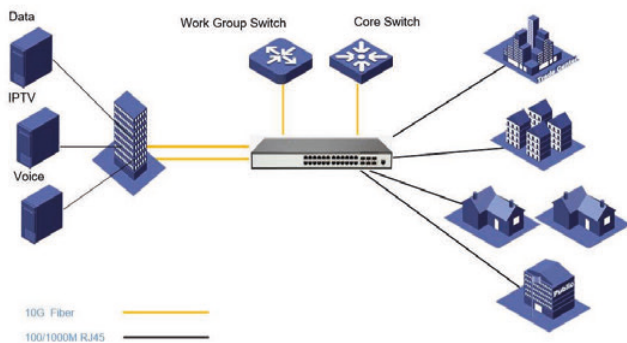
LOLXG20D-33: Modulo SFP 10G BASE-BX-D BiDi 1330nm TX / 1270nm RX, LC 20 km, with Digital Diagnostic Monitoring, 0° ÷ +70°C

3FS5710-28SX, LOLXGxxx - Managed Layer 3 fiber switch



L3

1GB



SPECIFICA	3FS5710-28SX
Protocol Standards	IEEE 802.3, IEEE802.3U, IEEE802.3ab, IEEE802.3z, IEEE802.1d STP, IEEE802.1w RSTP, IEEE802.1s MSTP, ITU-T G.8023 EPR/Y.1344, IEEE802.1Q, IEEE802.1X, IEEE802.3ad, IEEE802.3x, IEEE802.3af, IEEE802.3at, IEEE802.1ad, IEEE802.1p, IEEE802.1ab, IEEE802.3az
Switch capacity	128 Gbps
MAC address table	16K
Packet forwarding rate	95 Mpps
Multicast / Route	1 K / 512
RJ45 Ports Parameters	
Connector	4x UTP RJ45 (combo port) + 1x RJ45 (console)
Transmission Rate	10/100/1000 Mbps
UTP Type	UTP-5e or higher
Distance	0 ÷ 100 meters
Fiber Port Parameters	
Connector	24x 1 Gbps SFP (4x combo port) + 4x 10 Gbps SFP+ (uplink)
Distance	Transmission up to 100 Km
Power	
Input voltage	100 ÷ 240 Vac - 50 / 60 Hz
Power Consumption	38 W max
Environment	
Operating temperature	-10° ÷ +55° C
Relative humidity	10 to 90% (no condensation)
Physical characteristics	
Dimension	440 x 260 x 44 mm
Weight	5,0 Kg

The **3FS5710-28SX** switch is a carrier-grade weak Layer 3 switch, which is oriented to enterprise networks and operator customers of various scales, and can meet the needs of cost-effective Gigabit access and 10 Gigabit uplink. **3FS5710-28SX** supports 24 gigabit SFP ports, the device supports powerful QoS and ACL functions, supports IP+MAC+port binding and other security features, supports service flow classification and packet priority marking. Support static packet sampling, SFLOW function, support multi-port mirroring analysis function, support static and flexible QinQ function, support Ethernet OAM 802.3ag (CFM), 802.3ah (EFM), support policy-based IPV4/6 unicast routing, support Flexible forwarding strategy. Support 4K VLAN, dual tag VLAN and VLAN based on port, MAC and protocol.

Main features

- Support IPv4 / IPv6 dual protocol stack platform based on Linux operating system
- Support multiple link redundancy and network redundancy protocols such as STP / RSTP / MSTP / ERPS / LACP / PTP
- Support port speed and flow speed limit function, port based and service flow based mirroring functions
- Support classification based on service flow and Qos flow control function
- Support queue scheduling algorithms such as SP WRR / SP + WRR
- Support DHCP Server and DHCP Relay, DHCP attack automatic protection based on Mac Address and user blocking functions
- Support L2 Tunnel, remote loop detection function
- Support Ethernet OAM protocol such as CFM / EFM
- Support ARP attack automatic protection and user blocking functions, DDOS and virus attack protection
- Support DHCP snooping / IP source Guard / 802.1 and other security features
- Support link protection functions such as BFD, FlexLink, LACP and ERPP
- Support remote user authentication based on Tacacs+, Radius, and Local user authentication, remote upgrade through FTP and TFTP
- Support WEB based configure operation management, support SNMP V1/V2/V3



LOLG1Gxxx

1GB



LOLGRJ45

LOLG1G04D: Module SFP 1000BASE, 850 nm FP, MM, 0,5 Km, 10 dB DDMI Duplex LC

LOLG1G06D: Module SFP 1000BASE, 1310 nm FP, MM, 2 Km, 10 dB DDMI Duplex LC

LOLG1G06D-35: Modulo SFP 1000BASE-BX-U (TX 1310 - RX1550) BIDI 1310 nm, MM, 2 Km, 10 dB FP Simplex LC

LOLG1G06D-53: Modulo SFP 1000BASE-BX-D (TX 1550 - RX1310) BIDI 1550 nm, MM, 2 Km, 10 dB FP Simplex LC

LOLG1G20D: Module SFP 1000BASE-LX 1310 nm FP, SM, 20 Km, 15 dB DDMI Duplex LC

LOLG1G20D-35: Module SFP 1000BASE-BX-U (TX 1310 - RX1550) BIDI 1310 nm FP, SM, 20 km, 14 dB DDMI Simplex SC

LOLG1G20D-53: Module SFP 1000BASE-BX-D (TX 1550 - RX1310) BIDI 1550 nm DFB, SM, 20 Km, 14 dB DDMI Simplex SC

LOLGRJ45: Module RJ45 Copper on slot SFP 10/100/1000 BASE-T

LS021616GW, LOLG1Gxxx - Managed POE fiber switch



LS021616GW

LS021616GW

LS021616GW series is the 10/100/1000 Mbps managed industrial POE fiber switch, with operating temperature $-40^{\circ} \div +75^{\circ} \text{C}$, support wide voltage dual power input, meet IP30 protection degree and EMC industrial grade requirements, support many managed functions as cable diagnosis to locate the fault point, include RSTP IGMP, VLAN, Qos, IPV6, Loop protection, ERPS and so on. pass through dangerous environmental certification and comply with FCC and CE standards. Support software upgrade via TFTP and HTTP, firmware redundancy prevents upgrade failing The reliable industrial grade design could ensure continuous and stable operation of the automation system.



- LOLG1G04D:** Module SFP 1000BASE, 850 nm FP, MM, 0,5 Km, 10 dB DDMI Duplex LC
LOLG1G06D: Module SFP 1000BASE, 1310 nm FP, MM, 2 Km, 10 dB DDMI Duplex LC
LOLG1G06D-35: Modulo SFP 1000BASE-BX-U (TX 1310 - RX1550) BIDI 1310 nm, MM, 2 Km, 10 dB FP Simplex LC
LOLG1G06D-53: Modulo SFP 1000BASE-BX-D (TX 1550 - RX1310) BIDI 1550 nm, MM, 2 Km, 10 dB FP Simplex LC
LOLG1G20D: Module SFP 1000BASE-LX 1310 nm FP, SM, 20 Km, 15 dB DDMI Duplex LC
LOLG1G20D-35: Module SFP 1000BASE-BX-U (TX 1310 -RX1550) BIDI 1310 nm FP, SM, 20 Km, 14 dB DDMI Simplex SC
LOLG1G20D-53: Module SFP 1000BASE-BX-D (TX 1550 - RX1310) BIDI 1550 nm DFB, SM, 20 Km, 14 dB DDMI Simplex SC

SPECIFICA	LS021616GW
Protocol Standards	IEEE 802.3, IEEE802.3U, IEEE802.3ab, IEEE802.3z, IEEE802.1d STP, IEEE802.1w RSTP, IEEE802.1s MSTP, ITU-T G.8023 EPR/Y.1344, IEEE802.1Q, IEEE802.1X, IEEE802.3ad, IEEE802.3x, IEEE802.3af, IEEE802.3at, IEEE802.1ad, IEEE802.1p, IEEE802.1ab, IEEE802.3az
Switch capacity	56 Gbps
MAC address table	8K
VLAN ID	4096
Jumbo frame	9,6 KB
RJ45 Ports Parameters	
Connector	16x UTP RJ45 / 1x RJ45 console
Transmission Rate	10/100/1000 Mbps
UTP Type	UTP-5e or higher
Distance	0 ÷ 100 meters
Fiber Port Parameters	
Connector	2x 1/2,5 Gbps SFP slot
Distance	0 ÷ 100 meters
Power	
Input voltage	100 ÷ 240 Vac - 50 / 60 Hz
Power Consumption	500 W max (POE load)
Environment	
Operating temperature	$-40^{\circ} \div +75^{\circ} \text{C}$
Relative humidity	10 to 90% (no condensation)
Physical characteristics	
Dimension	483 x 275 x 44,5 mm
Safety Class	IP30

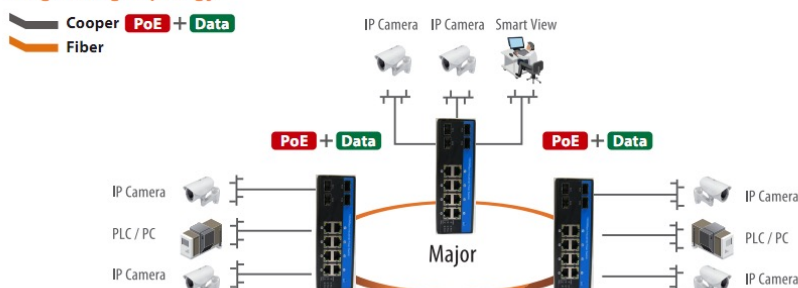


LOLG1Gxxx

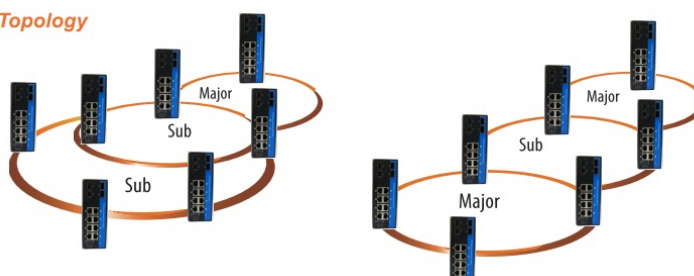


Application & ERPS (Ethernet Ring Protection Switching) topology

Single-Ring Topology



Multi-Ring Topology



LS042424GW, LOLG1Gxxx - Managed POE fiber switch

**LS042424GW**
POE
300W
LS042424GW

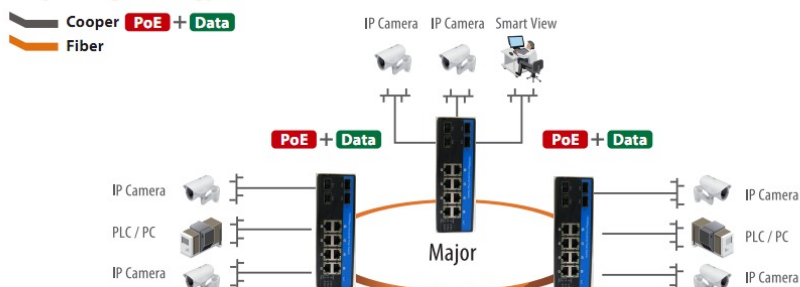
LS0042424GW series is the 10/100/1000 Mbps managed industrial POE fiber switch, comply with IEEE802.3af, power on POE IP cameras through the Ethernet cable, support wide voltage dual power input, meet IP30 protection degree and EMC industrial grade requirements, support many managed functions as cable diagnosis to locate the fault point, include RSTP IGMP, VLAN, Qos, IPV6, Loop protection, ERPS and so on. pass through dangerous environmental certification and comply with FCC and CE standards. Support IEEE802.1q VLAN, VLAN port, based Mac VLAN, IP subnet VLAN, Protocol VLAN, VLAN convert, MVR. Support software upgrade via TFTP and HTTP, firmware redundancy prevents upgrade failing, The reliable industrial grade design could ensure continuous and stable operation of the automation system.

- LOLG1G04D:** Module SFP 1000BASE, 850 nm FP, MM, 0,5 Km, 10 dB DDMI Duplex LC
- LOLG1G06D:** Module SFP 1000BASE, 1310 nm FP, MM, 2 Km, 10 dB DDMI Duplex LC
- LOLG1G06D-35:** Modulo SFP 1000BASE-BX-U (TX 1310 - RX1550) BIDI 1310 nm, MM, 2 Km, 10 dB FP Simplex LC
- LOLG1G06D-53:** Modulo SFP 1000BASE-BX-D (TX 1550 - RX1310) BIDI 1550 nm, MM, 2 Km, 10 dB FP Simplex LC
- LOLG1G20D:** Module SFP 1000BASE-LX 1310 nm FP, SM, 20 Km, 15 dB DDMI Duplex LC
- LOLG1G20D-35:** Module SFP 1000BASE-BX-U (TX 1310 -RX1550) BIDI 1310 nm FP, SM, 20 Km, 14 dB DDMI Simplex SC
- LOLG1G20D-53:** Module SFP 1000BASE-BX-D (TX 1550 - RX1310) BIDI 1550 nm DFB, SM, 20 Km, 14 dB DDMI Simplex SC

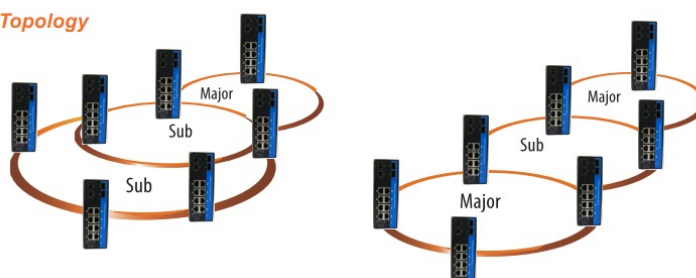
**LOLG1Gxxx**
1GB

Application & ERPS (Ethernet Ring Protection Switching) topology

Single-Ring Topology



Multi-Ring Topology



LS121200GW, LS121212GW, LOLG1Gxxx - Managed fiber switch



LS0121212GW

**POE
300W**

LS0121200GW

LS0042424GW series is the 10/100/1000 Mbps managed industrial fiber switch, support wide voltage dual power input, meet IP30 protection degree and EMC industrial grade requirements, support many managed functions as cable diagnosis to locate the fault point, include RSTP IGMP, VLAN, Qos, IPV6, Loop protection, ERPS and so on. pass through dangerous environmental certification and comply with FCC and CE standards. Support IEEE802.1q VLAN, VLAN port, based Mac VLAN, IP subnet VLAN, Protocol VLAN, VLAN convert, MVR. Support software upgrade via TFTP and HTTP, firmware redundancy prevents upgrade failing. The reliable industrial grade design could ensure continuous and stable operation of the automation system.

LS0121212GW

LS0121212GW series is a managed industrial POE fiber switch, comply with IEEE802.3af, power on POE IP cameras through the Ethernet cable, up to 300 W total.

LOLG1G04D: Module SFP 1000BASE, 850 nm FP, MM, 0,5 Km, 10 dB DDMI Duplex LC

LOLG1G06D: Module SFP 1000BASE, 1310 nm FP, MM, 2 Km, 10 dB DDMI Duplex LC

LOLG1G06D-35: Modulo SFP 1000BASE-BX-U (TX 1310 - RX1550) BIDI 1310 nm, MM, 2 Km, 10 dB FP Simplex LC

LOLG1G06D-53: Modulo SFP 1000BASE-BX-D (TX 1550 - RX1310) BIDI 1550 nm, MM, 2 Km, 10 dB FP Simplex LC

LOLG1G20D: Module SFP 1000BASE-LX 1310 nm FP, SM, 20 Km, 15 dB DDMI Duplex LC

LOLG1G20D-35: Module SFP 1000BASE-BX-U (TX 1310 - RX1550) BIDI 1310 nm FP, SM, 20 Km, 14 dB DDMI Simplex SC

LOLG1G20D-53: Module SFP 1000BASE-BX-D (TX 1550 - RX1310) BIDI 1550 nm DFB, SM, 20 Km, 14 dB DDMI Simplex SC



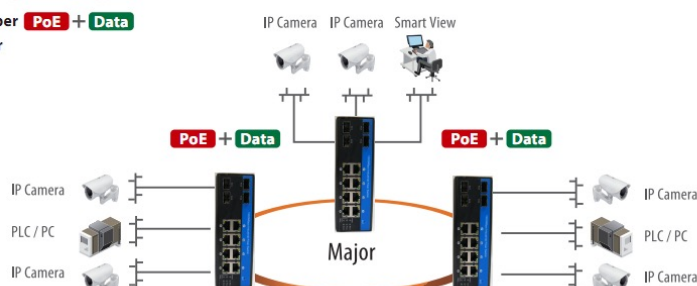
LOLG1Gxxx

1GB

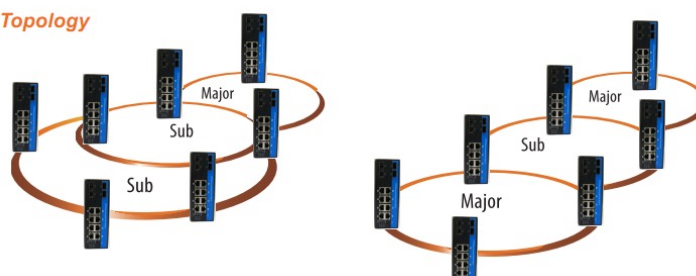
Application & ERPS (Ethernet Ring Protection Switching) topology

Single-Ring Topology

Cooper PoE + Data
Fiber



Multi-Ring Topology



LSP21000GW, LSP21008GW - Managed POE fiber switch



LSP21008GW

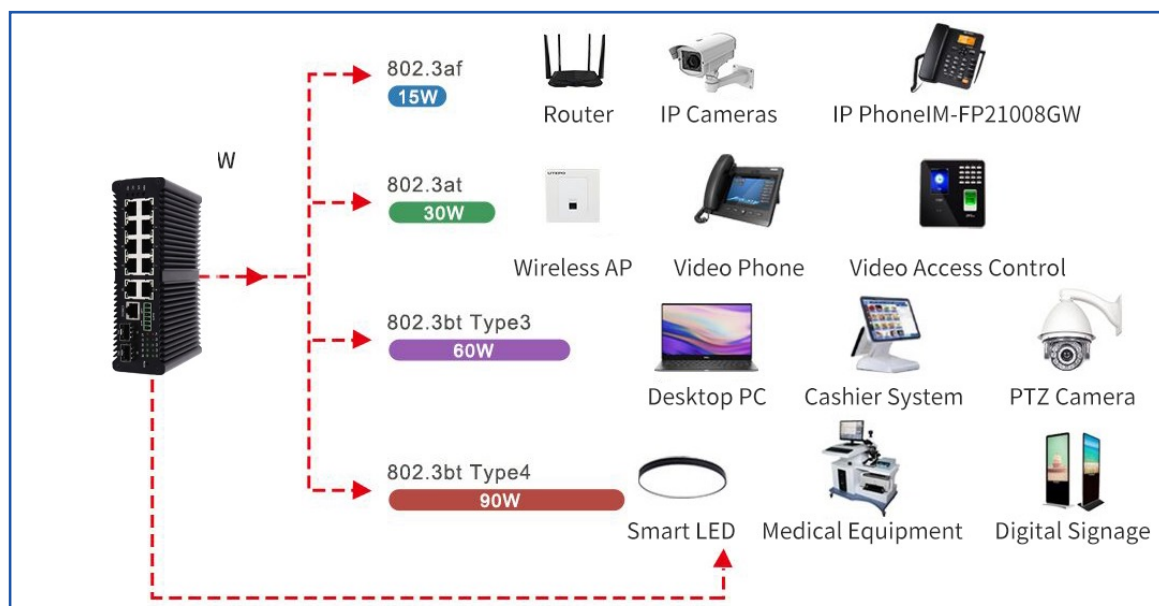

POE
360W
720W

Key Features

- IEEE 802.3af/at/bt (15.4W/30W/60W/90W) power on to 1 ÷ 8 RJ45 ports, 360W (**LSP21000GW**) - 720W (**LSP21008GW**) budget
- Support POE managed, enable/disable the POE ports, set the POE power-on delay and POE output power
- 6KV Ethernet surge protection, to harsh outdoor environment
- Support Auto MDI/MDIX
- Flow control mode: full duplex with IEEE 802.3x standar half-duplex with Back pressure standard
- IEEE 802.3 10Base-T and IEEE 802.3u 100Base-TX compliant
- Support IEEE802.3az EEE (Energy Efficient Ethernet) Management, optimize power consumption
- Support STP, RSTP, MSTP, ITU-T G.8032 Ethernet Protection Ring
- Support Qos, transport classification Qos, Cos, bandwidth control (input/output direction), storm suppression, differentiated services
- Support IEEE802.1q VLAN, VLAN port, based Mac VLAN, IP subnet VLAN, Protocol VLAN, VLAN convert, MVR
- Support dynamic IEEE802.3ad LACP link aggregation, static link aggregation
- Support IGMP/MLD snooping V1/V2/V3, IGMP filtrating/ modulating, IGMP searching
- Support DHCP client/Relay/Snooping/Snooping option 82/Relay option 82
- Support RMON, MIB II, mirror image, event log, DNS, NTP/SNTP, IEEE802.1ab LLDP
- Support IPV6 Telnet server /ICMP v6, SNMP, HTTP, SSH/SSL, NTP/SNTP, TFTP, QoS, ACL.

SPECIFICA	LSP212000GW / LSP21008GW
Protocol Standards	IEEE 802.3, IEEE802.3U, IEEE802.3ab, IEEE802.3z, IEEE802.1d STP, IEEE802.1w RSTP, IEEE802.1s MSTP, ITU-T G.8023 EPR/Y.1344, IEEE802.1Q, IEEE802.1X, IEEE802.3ad, IEEE802.3x, IEEE802.3af, IEEE802.3at, IEEE802.1ad, IEEE802.1p, IEEE802.1ab, IEEE802.3az
Switch capacity	56 Gbps
MAC address table	8K
VLAN ID	4096
Jumbo frame	9.6 Kb
RJ45 Ports Parameters	
Connector RJ45	4x (LSP21000GW) / 10x (LSP21008GW) + 2x combo port + 1x UTP console
Transmission Rate	10/100/1000 Mbps
UTP Type	UTP-5e or higher
Distance	0 ÷ 100 meters
Fiber Port Parameters	
Connector	2x 1/2.5 Gbps SFP slot
Distance	Transmission up to 100 Km
Power	
Input voltage	48 Vdc
Max POE load	360 W (LSP21000GW) / 720 W (LSP21008GW)
Environment	
Operating temperature	-40° ÷ +75° C
Relative humidity	10 to 90% (no condensation)
Physical characteristics	
Dimension	165 x 112 x 45,5 mm
Safety Class	IP40

- **Can power LSP054GE**
- **Support module SFP LOLG1Gxxx series 1 Gbps**
- Support software upgrade via TFTP and HTTP, support firmware redundancy prevents upgrade failing
- Support cable diagnosis and can locate the fault point
- A store-and-forward switching mechanism
- Web GUI management
- Support Cisco® like CLI, Web management, SNMP v1/2c/3, Telnet
- Real-time display of voltage, current, power and PD level
- Support relay alarm output and alarm status light display (2 way-from dry contact)
- Safety: based on port and Mac IEEE802.1X, RADIUS, ACL, TACACS+, HTTP/HTTPS, SSL/SSH v2.



LSP288GW, LSP444GW, LSP488GW, LSP888GW - Managed POE



LSP288GW



LSP888GW

**POE
300W**

Key Features

- Support power on POE IP cameras through the wireless access point (AP) of 5 categories of Ethernet cable.
- 6 KV Ethernet surge protection, adapt to a harsh outdoor environment
- RJ45 ports support Auto MDI/MDIX function
- Flow control mode: full duplex with IEEE 802.3x standard, half-duplex with Back pressure standard
- IEEE 802.3 10Base-T and IEEE 802.3u 100Base-TX compliant
- Support IEEE802.3az EEE (Energy Efficient Ethernet) Management, optimize power consumption
- Support STP, RSTP, MSTP, ITU-T G.8032 Ethernet Protection Ring (EPR)
- Support Qos, transport classification Qos, Cos, bandwidth control (input/output direction), storm suppression
- Support dynamic IEEE802.3ad LACP link aggregation, static link aggregation
- Support IGMP/MLD snooping V1/V2/V3, IGMP filtering/modulating, IGMP searching
- Support IGMP agent report, MLD snooping
- Support DHCP client/Relay/Snooping/ Snooping option 82/Relay option 82
- Support RMON, MIB II, mirror image, event log, DNS, NTP/SNTP, and IEEE802.1ab LLDP
- Support IPV6 Telnet server /ICMP v6, SNMP, HTTP, SSH/SSL, NTP/SNTP, TFTP, QoS, ACL.



LOLG1Gxxx

1GB

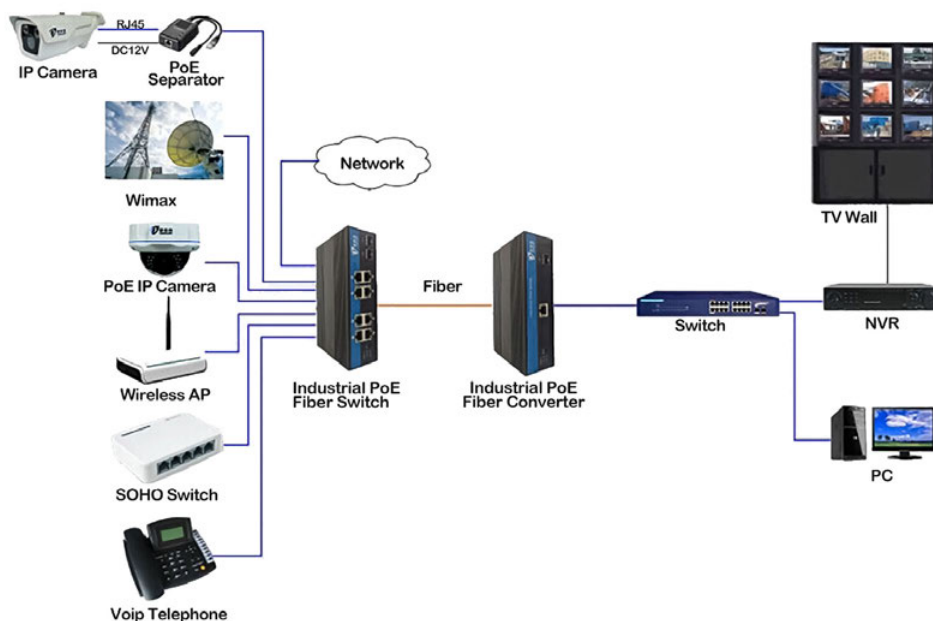


LSP288GW DIN-RAIL

SPECIFICA	LSP288GW / LSP444GW / LSP488GW / LSP888GW
Protocol Standards	IEEE 802.3, IEEE802.3U, IEEE802.3ab, IEEE802.3z, IEEE802.1d STP, IEEE802.1w RSTP, IEEE802.1s MSTP, ITU-T G.8023 EPR/Y.1344, IEEE802.1Q, IEEE802.1X, IEEE802.3ad, IEEE802.3x, IEEE802.3af, IEEE802.3at, IEEE802.1ad, IEEE802.1p, IEEE802.1ab, IEEE802.3az
Switch capacity	56 Gbps
MAC address table	8K
VLAN ID	4096
Jumbo frame	9.6 Kb
RJ45 Ports Parameters	
Connector RJ45	8x UTP ports + 1x UTP console
Transmission Rate	10/100/1000 Mbps
UTP Type	UTP-5e or higher
Distance	0 ÷ 100 meters
Fiber Port Parameters	
SFP slot 1/2.5 Gbps	2x LSP288GW/ 4x LSP444GW / 8x LSP488GW-LSP888GW
Distance	Transmission up to 100 Km
Power	
Input voltage	48 Vdc (max 57 Vdc)
Max POE load	300 W (30 W max for port)
Environment	
Operating temperature	-40° ÷ +75° C
Relative humidity	10 to 90% (no condensation)
Physical characteristics	
Dimension	158 x 115 x 60 mm
Safety Class	IP40

- **Support module SFP LOLG1Gxxx series**
- Support software upgrade via TFTP and HTTP, with the firmware redundancy prevents upgrade failing
- Support cable diagnosis and can locate the fault point
- A store-and-forward switching mechanism
- Web GUI management
- Support Cisco® like CLI, Web management, SNMP v1/v2c/v3, Telnet
- Safety: based on port and Mac IEEE802.1X, RADIUS, ACL, TACACS+, HTTP/HTTPS, SSL/SSH v2
- Support IEEE802.1q VLAN, VLAN port, based Mac VLAN, IP subnet VLAN, Protocol VLAN, VLAN convert, MVR.

Industrial PoE Fiber Switch Application



7IS024GPS-RJ, 7IS022GPS-RJ, LOLG1Gxxx - Industrial POE switch



7IS024GPS-RJ

POE
120W


7IS024GPS-RJ, 7IS022GPS-RJ

- Mini industrial switch, DIN-rail mounting method
- 4x 10/100/1000Base-T Port (2x 7IS022GPS-RJ)
- 2x 1000 Mbps SFP fiber ports
- RJ45 ports support auto MDI/MDI-X function
- Auto-negotiation speed, half/full-duplex
- Each port has LED Indicator light
- 4KV Ethernet surge protection
- Max power to 15.4 W under af standard and 30 W under at standard to each PoE port
- Support IEEE802.1d VLAN tag, Spanning Tree
- Flow control fully supported
- MAC address table 8K
- Supports for up to 9K long packet transmission
- Support dual input power supply 48 ÷ 52 Vdc, output power is determined by POE load
- IP40 grade protection, corrugated high strenght metal casing
- The reliable industrial grade design could ensure continuous and stable operation of the automation system.

SPECIFICA	7IS024GPS-RJ / 7IS022GPS-RJ
Protocol Standards	IEEE802.3i 10Base-T / IEEE802.3u 100Base-TX / IEEE802.3af POE IEEE802.1af DTE Power via MIDI / IEEE802.3x Flow control IEE- E802.3z 1000Base-SX/LX, IEEE802.1d Spanning tree, IEEE802.1p QoS, IEEE802.3az
RJ45 Ports Parameters	
Connector	4x RJ45 / 2x RJ45
Transmission Rate	10/100/1000 Mbps
UTP Type	UTP-5e or higher
Distance	0 ÷ 100 meters
Fiber Port Parameters	
Connector	2x SFP slot
Data rate	1.25 Gbps
Optical wavelength	MM 850, 1310 nm / SM 1310, 1490, 1550 nm
Distance	MM up to 2 Km / SM up to 120 Km
Power	
Input voltage	100 ÷ 240 Vac - 50 / 60 Hz
Connector	Flange terminal
Working Voltage	5 Vdc
Power Consumption	10 W max (no POE load)
Environment	
Operating temperature	-40° ÷ +85° C
Relative humidity	5 to 90% (no condensation)
Physical characteristics	
Dimension	114 x 93 x 35 mm
Weight	0.35 Kg
Color	Metal and black



LOLG1Gxxx

1GB

- LOLG1G04D:** Module SFP 1000BASE, 850 nm FP, MM, 0,5 Km, 10 dB DDMI Duplex LC
LOLG1G06D: Module SFP 1000BASE, 1310 nm FP, MM, 2 Km, 10 dB DDMI Duplex LC
LOLG1G06D-35: Modulo SFP 1000BASE-BX-U (TX 1310 - RX1550) BIDI 1310 nm, MM, 2 Km, 10 dB FP Simplex LC
LOLG1G06D-53: Modulo SFP 1000BASE-BX-D (TX 1550 - RX1310) BIDI 1550 nm, MM, 2 Km, 10 dB FP Simplex LC
LOLG1G20D: Module SFP 1000BASE-LX 1310 nm FP, SM, 20 Km, 15 dB DDMI Duplex LC
LOLG1G20D-35: Module SFP 1000BASE-BX-U (TX 1310 - RX1550) BIDI 1310 nm FP, SM, 20 Km, 14 dB DDMI Simplex SC
LOLG1G20D-53: Module SFP 1000BASE-BX-D (TX 1550 - RX1310) BIDI 1550 nm DFB, SM, 20 Km, 14 dB DDMI Simplex SC

PRODOTTI CORRELATI



7PS52V3A

SPECIFICHE	
Alimentazione	100 ÷ 240Vac – 50 / 60Hz
Uscita	52 Vdc - 3,15 A
Potenza	150 W
Montaggio	Barra DIN
Dimensioni	125 x 130 x 40 mm
Note	Adatto per serie POE > 4/8 porte

LSP244GE, LSP288GE - Industrial POE Fiber switch



LSP244GE

**POE
120W**



LSP288GE

**POE
240W**

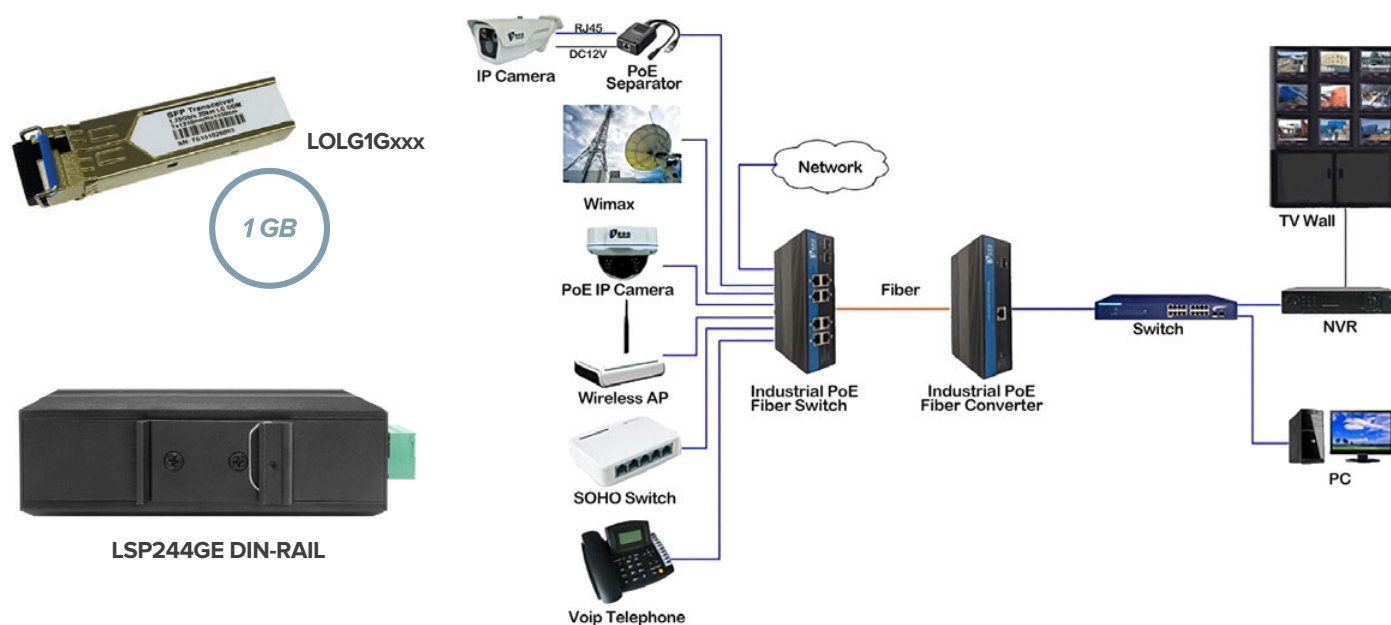
Key Features

- Support power on POE IP cameras through the wireless access point (AP) of 5 categories of Ethernet cable
- IEEE 802.3af/at/bt power on RJ45 ports
- 10/100/1000Mbps Auto-sensing RJ45 ports
- 2x 100/1000Mbps SFP fiber ports
- 6KV Ethernet surge protection, adapt to a harsh outdoor environment
- Support Auto MDI/MDIX
- Flow control mode: full duplex with IEEE 802.3x standard, half-duplex with Back pressure standard
- IEEE 802.3 10Base-T and IEEE 802.3u 100Base-TX compliant
- Max power to 15.4W under af standard, 30W under at standard to each PoE port, 90W under bt standard to each PoE port
- Detect the PoE models of electrical equipment.
- A store-and-forward switching mechanism
- Power on POE IP cameras through the Ethernet cable over range up to 100 meters.

SPECIFICA	LSP244GE / LSP288GE
Industry Standards	EMI: FCC Part 15 Subpart B Class A, EN 55022 Class A EMS: EN 61000-4-2 (ESD) Level 3, EN 61000-4-3 (RS) Level 3, EN 61000-4-4 (EFT) Level 3, EN 61000-4-5 (Surge) Level 3, EN 61000-4-6 (CS) Level 3, EN 61000-4-8 Traffic Control: NEMA-TS2 Vibration: IEC 60068-2-6 Freefall: IEC 60068-2-32 Shock: IEC 60068-2-27 Rail Traffic: EN 50121-4
Switch capacity	12 Gbps (LSP244GE) / 20 Gbps (LSP288GE)
MAC address table	4K
Queue buffer	1.75 Mb
Switching features	Transmission mode: storage and forward
RJ45 Ports Parameters	
Connector RJ45	4x UTP ports (LSP244GE) / 8x UTP ports (LSP288GE)
Transmission Rate	10/100/1000 Mbps
UTP Type	UTP-5 or higher
Distance	0 ÷ 100 meters
Fiber Port Parameters	
SFP slot	2x 1 Gbps
Distance	Transmission up to 100 Km
Power	
Input voltage	48 Vdc (max 57 Vdc)
Max POE load	300 W (30 W max for port)
Environment	
Operating temperature	-40° ÷ +75° C
Relative humidity	10 to 90% (no condensation)
Physical characteristics	
Dimension	114 x 93 x 35 mm (LSP244GE) / 158 x 115 x 60 mm (LSP288GE)
Safety Class	IP40

- Support module SFP LOLG1Gxxx series 1 Gbps
- DIN rail installation
- Pass through dangerous environmental certification
- Comply with FCC and CE standards
- The reliable industrial grade design could ensure continuous and stable operation of the automation system.

Industrial PoE Fiber Switch Application



LSP2F4GE - Industrial POE Fiber Switch



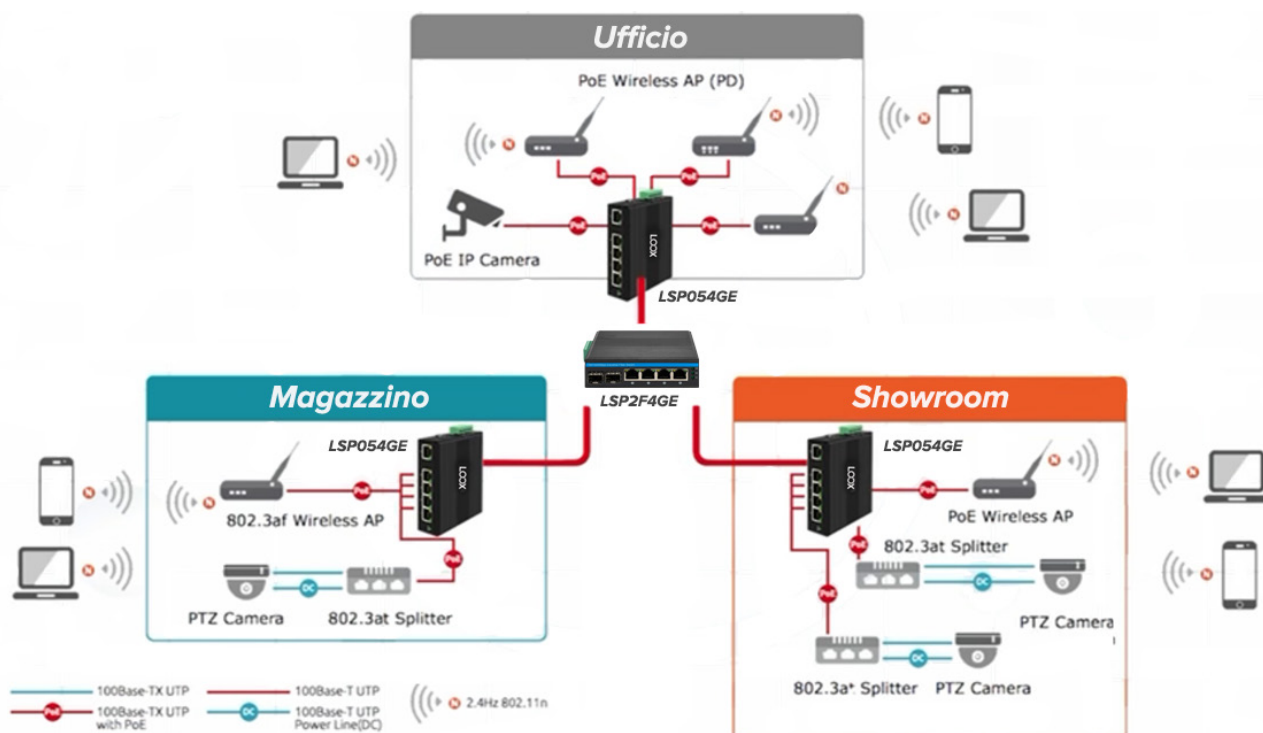
LSP2F4GE

**POE
360W**

Key Features

- Support power on POE IP cameras through the wireless access point (AP) of 5 categories of Ethernet cable
- IEEE 802.3af/at power on/to 1 ÷ 4 RJ45 ports
- 5x 10/100/1000Mbps Auto-sensing RJ45 ports
- 6KV Ethernet surge protection, adapt to a harsh outdoor environment
- **Can power LSP054GE**
- Support Auto MDI/MDIX
- Flow control mode: full duplex with IEEE 802.3x standard, half-duplex with Back pressure standard
- IEEE 802.3 10Base-T and IEEE 802.3u 100Base-TX compliant
- Max power to 15.4W under af standard, 30W under at standard to each PoE port
- Port 5 acts as PD power receiving port or Ethernet port
- A store-and-forward switching mechanism
- **Support module SFP LOLG1Gxxx series 1 Gbps**
- DIN rail installation
- Pass through dangerous environmental certification
- Comply with FCC and CE standards
- The reliable industrial grade design could ensure continuous and stable operation of the automation system.

SPECIFICA	LSP2F4GE
Industry Standards	EMI: FCC Part 15 Subpart B Class A, EN 55022 Class A EMS: EN 61000-4-2 (ESD) Level 3, EN 61000-4-3 (RS) Level 3, EN 61000-4-4 (EFT) Level 3, EN 61000-4-5 (Surge) Level 3, EN 61000-4-6 (CS) Level 3, EN 61000-4-8 Traffic Control: NEMA-TS2 Vibration: IEC 60068-2-6 Freefall: IEC 60068-2-32 Shock: IEC 60068-2-27 Rail Traffic: EN 50121-4
Switch capacity	12 Gbps
MAC address table	4K
Queue buffer	1.75 Mb
Switching features	Trasmission mode: storage and forward
RJ45 Ports Parameters	
Connector RJ45	4x UTP ports
Transmission Rate	10/100/1000 Mbps
UTP Type	UTP-5 or higher
Distance	0 ÷ 100 meters
Fiber Port Parameters	
SFP slot	2x 1,25 Gbps
Distance	Transmission up to 100 Km
Power	
Input voltage	48 Vdc (max 57 Vdc)
Max POE load	360 W (90 W max for port)
Environment	
Operating temperature	-40° ÷ +75° C
Relative humidity	10 to 90% (no condensation)
Physical characteristics	
Dimension	114 x 93 x 35 mm
Safety Class	IP40



LSP054GE - Industrial POE PD Ethernet Switch



LSP054GE

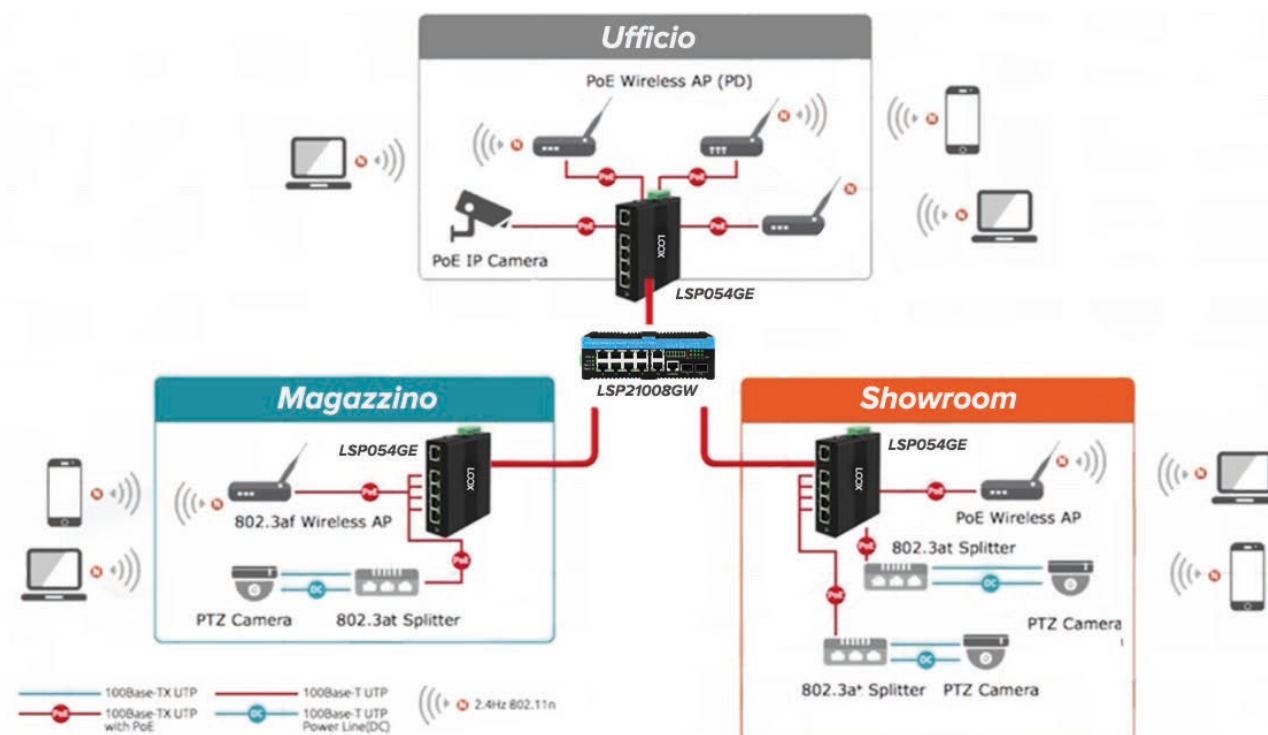
**POE
PD
90W**

Key Features

- Support power on POE IP cameras through the wireless access point (AP) of 5 categories of Ethernet cable
- IEEE 802.3af/at power on/to 1 ÷ 4 RJ45 ports
- IEEE 802.3af/at power on port 5
- **Port 5 acts as PD power receiving port or Ethernet port**
- 5x 10/100/1000Mbps Auto-sensing RJ45 ports
- 6KV Ethernet surge protection, adapt to a harsh outdoor environment
- Support Auto MDI/MDIX
- Flow control mode: full duplex with IEEE 802.3x standard, half-duplex with Back pressure standard
- IEEE 802.3 10Base-T and IEEE 802.3u 100Base-TX compliant
- Max power to 15.4W under af standard, 30W under at standard to each PoE port
- A store-and-forward switching mechanism
- DIN rail installation
- Comply with FCC and CE standards
- The reliable industrial grade design could ensure continuous and stable operation of the automation system.

SPECIFICA	LSP054GE
Industry Standards	EMI: FCC Part 15 Subpart B Class A, EN 55022 Class A EMS: EN 61000-4-2 (ESD) Level 3, EN 61000-4-3 (RS) Level 3, EN 61000-4-4 (EFT) Level 3, EN 61000-4-5 (Surge) Level 3, EN 61000-4-6 (CS) Level 3, EN 61000-4-8 Traffic Control: NEMA-TS2 Vibration: IEC 60068-2-6 Freefall: IEC 60068-2-32 Shock: IEC 60068-2-27 Rail Traffic: EN 50121-4
System bandwidth	10 Gbps
Switching features	Trasmission mode: storage and forward
RJ45 Ports Parameters	
Connector RJ45	5x UTP ports
Transmission Rate	10/100/1000 Mbps
UTP Type	UTP-5 or higher
Distance	0 ÷ 100 meters
Power	
Input voltage	48 Vdc (max 57 Vdc)
Max POE load	30 W max for ports 1 ÷ 4 - POE input 90 W max on port 5
Environment	
Operating temperature	-40° ÷ +75° C
Relative humidity	10 to 90% (no condensation)
Physical characteristics	
Dimension	114 x 93 x 35 mm
Safety Class	IP40

- **Support module SFP LOLG1Gxxx series 1 Gbps**
- Meet IP40 protection degree and EMC industrial grade requirements
- Pass through dangerous environmental certification
- Comply with FCC and CE standards



7IPS33012FM, LOLGxxx - Managed industrial fiber switch



7IPS33012FM

7IPS33012FM

- Industrial switch, DIN-rail mounting method
- Switch capacity: 256Gbps
- MAC address table 8K
- 2x 10/100/1000Base-T Port
- 12x 1000Mbps SFP fiber ports
- RJ45 ports support auto MDI/MDI-X function
- Auto-negotiation speed, half/full-duplex
- Each port has the complete LED Indicator light
- 4KV Ethernet surge protection
- Support IEEE802.1d VLAN tag, QinQ configuration
- Flow control fully supported
- L2+ full network management
- Web management, CLI command line (Console, Telnet), SNMP (V1/V2/V3)
- QoS, Priority mode based on 802.1P, Port & DSCP, the queue scheduling algorithm including EQU, SP, WRR & SP+WRR
- CPU/memory monitoring, Ping test, cable diagnose
- Low power consumption, fan-less design
- Support dual input power supply voltage: 12-48Vdc
- IP40 grade protection, corrugated high strength metal casing
- The reliable industrial grade design could ensure continuous and stable operation of the automation system.

SPECIFICA	7IPS33012FM
Protocol Standards	IEEE802.3 10BASE-T, IEEE802.3i 10Base-T IEEE802.3u 100Base-TX, IEEE802.3u 100Base-FX IEEE802.3ab 1000Base-T, IEEE802.3z 1000Base-X, IEEE802.3x
Switch capacity	256 Gbps
MAC address table	8K
RJ45 Ports Parameters	
Connector	2x RJ45 / 1x RS232 console
Transmission Rate	10/100/1000 Mbps
UTP Type	UTP-5e or higher
Distance	0 ÷ 100 meters
Fiber Port Parameters	
Connector	12x SFP slot
Data rate	1.25 G
Optical wavelength	MM 850 nm / SM 1310, 1550 nm
Distance	MM up to 0,5 Km / SM up to 120 Km
Power	
Input voltage	100 ÷ 240 Vac - 50/60 Hz
Connector	Flange terminal
Working Voltage	12 ÷ 48 Vdc
Power Consumption	15 W max
Environment	
Operating temperature	-40° ÷ +85° C
Relative humidity	5 to 90% (no condensation)
Physical characteristics	
Dimension	165 x 148 x 54 mm
Weight	0.8 Kg

1GB



LOLG1Gxxx

- LOLG1G04D:** Module SFP 1000BASE, 850 nm FP, MM, 0,5 Km, 10 dB DDMI Duplex LC
LOLG1G06D: Module SFP 1000BASE, 1310 nm FP, MM, 2 Km, 10 dB DDMI Duplex LC
LOLG1G06D-35: Module SFP 1000BASE-BX-U (TX 1310 - RX1550) BIDI 1310 nm, MM, 2 Km, 10 dB FP Simplex LC
LOLG1G06D-53: Module SFP 1000BASE-BX-D (TX 1550 - RX1310) BIDI 1550 nm, MM, 2 Km, 10 dB FP Simplex LC
LOLG1G20D: Module SFP 1000BASE-LX 1310 nm FP, SM, 20 Km, 15 dB DDMI Duplex LC
LOLG1G20D-35: Module SFP 1000BASE-BX-U (TX 1310 - RX1550) BIDI 1310 nm FP, SM, 20 Km, 14 dB DDMI Simplex SC
LOLG1G20D-53: Module SFP 1000BASE-BX-D (TX 1550 - RX1310) BIDI 1550 nm DFB, SM, 20 Km, 14 dB DDMI Simplex SC

1GB



LOLGRJ45

LOLGRJ45: Module RJ45 Copper on slot SFP 10/100/1000 BASE-T

7IPS33012FM is a full gigabit L2+ managed industrial Ethernet fiber switch: it has 2x 10/100/1000Base-T RJ45 ports and 12x 100/1000Base-X SFP fiber slot ports. Each port can support wire-speed forwarding. The **7IPS33012FM** has L2+ full network management function, IPV4/IPV6 management, software/static route forwarding, security protection mechanisms, complete ACL/QoS policies, and rich VLAN functions, and is easy to manage and maintain. Supports multiple network redundancy protocols STP/RSTP/MSTP (<50ms) and (ITU-TG.8032) ERPS (<20ms) to improve link backup and network reliability. Any port can be looped, supporting chain, star, Double star, ring, tangent ring, intersecting ring, coupling ring, self-healing within 20 ms of the ring network. When a one-way network fails, communication can be quickly resumed to ensure uninterrupted communication of important applications.

This model has high reliability, high security, and high manageability. The industrial products fully comply with industrial product design and materials. The shell is made of aluminum alloy to enhance heat dissipation performance, and has excellent industrial field environment adaptability (including mechanical stability, climatic environment adaptability, electromagnetic environment adaptability, etc.), protection class up to IP40, support dual redundant power supply, low power fanless cooling technology, MTBF average trouble-free working time up to 35 years.

7IPS36248FM, LOLGxxx - Managed industrial switch

**7IPS36248FM**

10 GB

7IPS36248FM

- Industrial switch, DIN-rail mounting method
- Switch capacity: 598 Gbps
- MAC address table 32K
- 12x 10/100/1000Base-T Port
- 8x 1 Gbps + 4x 10 Gbps SFP fiber ports
- RJ45 ports support auto MDI/MDI-X function
- Auto-negotiation speed, half/full-duplex
- Each port has the complete LED Indicator light
- 6KV Ethernet surge protection
- Support IEEE802.1d VLAN tag, QinQ configuration
- Flow control fully supported
- L2+ full network management
- Web management, CLI command line (Console, Telnet), SNMP (V1/V2/V3)
- QoS, Priority mode based on 802.1P, Port & DSCP, the queue scheduling algorithm including EQU, SP, WRR & SP+WRR
- CPU monitoring, memory monitoring, Ping test, and cable diagnose
- Low power consumption, fan-less design,
- Support dual power input power supply 12 ÷ 48 Vdc
- IP40 grade protection, corrugated high strength metal casing
- The reliable industrial grade design could ensure continuous and stable operation of the automation system.

SPECIFICA	7IPS36248FM
Protocol Standards	IEEE802.3 10BASE-T, IEEE802.3i 10Base-T IEEE802.3u 100Base-TX, IEEE802.3ab 1000Base-T IEEE802.3z 1000Base-X IEEE802.3ae 10GBase-LR/SR, IEEE802.3x
Switch capacity	598 Gbps
MAC address table	32K
RJ45 Ports Parameters	
Connector	12x RJ45 / 1x RS232 console
Transmission Rate	10/100/1000 Mbps
UTP Type	UTP-5e or higher
Distance	0 ÷ 100 meters
Fiber Port Parameters	
Connector	8x 1 Gbps SFP slot / 4x 10 Gbps SFP+ slot
Data rate	2.5 G
Optical wavelength	MM 850 nm / SM 1310, 1550 nm
Distance	MM up to 0,5 Km (0.3 Km 10 Gb) / SM up to 120 Km
Power	
Input voltage	100 ÷ 240 Vac - 50 / 60 Hz
Connector	Flange terminal
Working Voltage	12 ÷ 48 Vdc
Power Consumption	36 W max (no POE load)
Environment	
Operating temperature	-40° ÷ +80° C
Relative humidity	5 to 90% (no condensation)
Physical characteristics	
Dimension / Weight	166 x 149 x 89 mm / 2.2 Kg

1 GB

**LOLG1Gxxx**

- LOLG1G04D:** Module SFP 1000BASE, 850 nm FP, MM, 0,5 Km, 10 dB DDMI Duplex LC
LOLG1G06D: Module SFP 1000BASE, 1310 nm FP, MM, 2 Km, 10 dB DDMI Duplex LC
LOLG1G06D-35: Modulo SFP 1000BASE-BX-U (TX 1310 - RX1550) BIDI 1310 nm, MM, 2 Km, 10 dB FP Simplex LC
LOLG1G06D-53: Modulo SFP 1000BASE-BX-D (TX 1550 - RX1310) BIDI 1550 nm, MM, 2 Km, 10 dB FP Simplex LC
LOLG1G20D: Module SFP 1000BASE-LX 1310 nm FP, SM, 20 Km, 15 dB DDMI Duplex LC
LOLG1G20D-35: Module SFP 1000BASE-BX-U (TX 1310 -RX1550) BIDI 1310 nm FP, SM, 20 Km, 14 dB DDMI Simplex SC
LOLG1G20D-53: Module SFP 1000BASE-BX-D (TX 1550 - RX1310) BIDI 1550 nm DFB, SM, 20 Km, 14 dB DDMI Simplex SC

1 GB

**LOLGRJ45****LOLGRJ45:** Module RJ45 Copper on slot SFP 10/100/1000 BASE-T

The **7IPS36248FM** is a L2+ 10G uplink managed industrial Ethernet fiber switch: it has 12x 10/100/1000Base-T RJ45 ports, 8x 100/1000Base-X SFP fiber slot ports and 4x 1/10G SFP+ fiber slot ports. Each port can support wire-speed forwarding. The **7IPS36248FM** has the L2+ full network management function, IPV4/IPV6 management, software/static route forwarding, security protection mechanisms, complete ACL/ QoS policies, rich VLAN functions, and is easy to manage and maintain. Supports multiple network redundancy protocols STP/RSTP/MSTP (< 50 ms) and (ITU-TG.8032) ERPS (< 20 ms) to improve link backup and network reliability. Any port can be looped, supporting chain, star, Double star, ring, tangent ring, intersecting ring, coupling ring, self-healing within 20 ms of the ring network. When a one-way network fails, communication can be quickly resumed to ensure uninterrupted communication of important applications.

This model has high reliability, high security, and high manageability. It ensures reliable transmission of critical data, supports remote management, and can be clustered with the NMS network management platform of the optical network to achieve blind management.

The shell is made of aluminum alloy to enhance heat dissipation performance, and has excellent industrial field environment adaptability, protection class up to IP40, support dual redundant power supply, low power fanless cooling technology, MTBF average trouble-free working time up to 35 years.

LSBP244GW, LSBP288GW - Managed POE Fiber Bypass switch



LSBP244GW

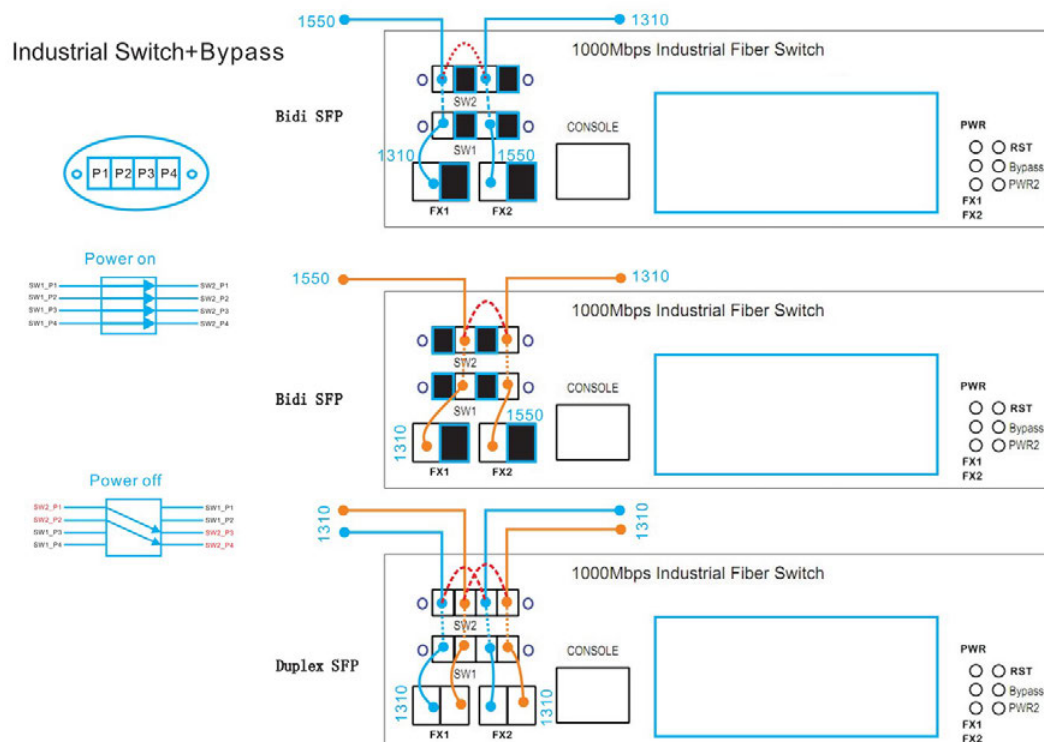


Key Features

- 4 KV Ethernet surge protection, adapt to a harsh outdoor environment
- Support Auto MDI/MDIX
- Flow control mode: full duplex with IEEE 802.3x standard, half-duplex with Back pressure standard
- IEEE 802.3 10Base-T and IEEE 802.3u 100Base-TX compliant
- Support IEEE802.3az EEE (Energy Efficient Ethernet) Management, optimize power consumption
- Support STP, RSTP, MSTP, ITU-T G.8032 Ethernet Protection Ring (EPR)
- Support Qos, transport classification Qos, Cos, bandwidth control (input/output direction), storm suppression, differentiated service
- Support IEEE802.1q VLAN, VLAN port, based Mac VLAN, IP subnet VLAN, Protocol VLAN, VLAN convert, MVR
- Support dynamic IEEE802.3ad LACP link aggregation, static link aggregation
- Support IGMP/MLD snooping V1/V2/V3, IGMP filtering/ modulating, IGMP searching
- Support IGMP agent report, MLD snooping
- Safety: based on port and Mac IEEE802.1X, RADIUS, ACL, TACACS+, HTTP/HTTPS, SSL/SSH v2
- Support DHCP client/Relay/Snooping/Snooping option 82/ Relay option 82
- Support RMON, MIB II, mirror image, event log, DNS, NTP/ SNTP, IEEE802.1ab LLDP
- Support IPV6 Telnet server /ICMP v6, SNMP, HTTP, SSH/SSL, NTP/SNTP,TFTP, QoS, ACL.

SPECIFICA	LSBP244GW / LSBP288GW
Protocol Standards	IEEE 802.3, IEEE802.3U, IEEE802.3ab, IEEE802.3z, IEEE802.1d STP, IEEE802.1w RSTP, IEEE802.1s MSTP, ITU-T G.8023 EPR/Y.1344, IEEE802.1Q, IEEE802.1X, IEEE802.3ad, IEEE802.3x, IEEE802.3af, IEEE802.3at, IEEE802.1ad, IEEE802.1p, IEEE802.1ab, IEEE802.3az
Switch capacity	56 Gbps
MAC address table	8K
VLAN ID	4096
Jumbo frame	9.6 Kb
RJ45 Ports Parameters	
Connector RJ45	4x (LSBP244GW) / 8x (LSBP288GW) + 1x UTP console
Transmission Rate	10/100/1000 Mbps
UTP Type	UTP-5e or higher
Distance	0 ÷ 100 meters
Fiber Port Parameters	
Connector	2x 1 Gbps SFP slot
Distance	Transmission up to 100 Km
Power	
Input voltage	9 ÷ 52 Vdc
Max POE load	120 W (LSBP244GW) / 240 W (LSBP288GW)
Environment	
Operating temperature	-40° ÷ +85° C
Relative humidity	10 to 90% (no condensation)
Physical characteristics	
Dimension	158 x 114,8 x 60 mm
Safety Class	IP40

- Support module SFP LOLG1Gxxx series 1 Gbps
- Support software upgrade via TFTP and HTTP, firmware redundancy prevents upgrade failing
- Support cable diagnosis and can locate the fault point
- A store-and-forward switching mechanism
- Web GUI management
- Support Cisco® like CLI, Web management, SNMP v1/v2c/v3, Telnet



LSBP244GW, LSBP288GW, LOLG1Gxxx - Industrial switch+bypass



LSBP288GW



Fiber Bypass switch are indispensable part of optical communication & protection system, and highly reliable and stable for different optical path needs such as:

- Metropolitan area network (MAN)
- Dynamic configuration of add/drop multiplexing
- System monitoring
- Laboratory research and development.

Meantime, the fiber pass switch characterizes:

- Low Insertion Loss
- Wide Wavelength Range
- Low Channel Crosstalk.

SPECIFICA	LSBP244GW, LSBP288GW
Fiber Bypass system	
Polarity protection	Support
Optical fiber interface	LC
Wavelength range	850 ±40nm / 1300 ±40nm - 1260 ÷ 1650 nm
Test wavelength	850/1300 nm - 1310/1550 nm
Insert loss	Typical: 0.6 dB Max: 1.0 dB
Return loss	MM ≥30 dB / SM ≥50 dB
Channel crosstalk	MM ≥35 dB / SM ≥55 dB
Polarization loss	≤0.05 dB
Wavelength loss	≤0.05 dB
Temperature loss	≤0.05 dB
Repeatability	≤0.05 dB
Operating voltage	3,3 ÷ 5,0 Vdc
Service life	≥100000000 times
Switching time	≤10 Ms
Transmission optical power	≤500 mW
Operating temperature	-20° ÷ +70° C

LOLG1G04D: Module SFP 1000BASE, 850 nm FP, MM, 0,5 Km, 10 dB DDMI Duplex LC

LOLG1G06D: Module SFP 1000BASE, 1310 nm FP, MM, 2 Km, 10 dB DDMI Duplex LC

LOLG1G06D-35: Modulo SFP 1000BASE-BX-U (TX 1310 - RX1550) BIDI 1310 nm, MM, 2 Km, 10 dB FP Simplex LC

LOLG1G06D-53: Modulo SFP 1000BASE-BX-D (TX 1550 - RX1310) BIDI 1550 nm, MM, 2 Km, 10 dB FP Simplex LC

LOLG1G20D: Module SFP 1000BASE-LX 1310 nm FP, SM, 20 Km, 15 dB DDMI Duplex LC

LOLG1G20D-35: Module SFP 1000BASE-BX-U (TX 1310 - RX1550) BIDI 1310 nm FP, SM, 20 Km, 14 dB DDMI Simplex SC

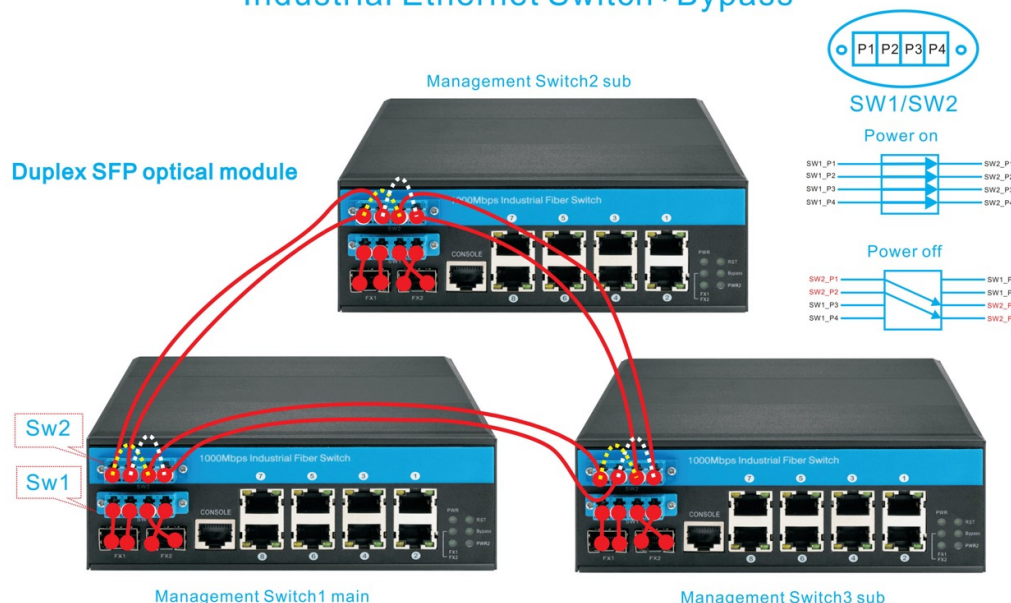
LOLG1G20D-53: Module SFP 1000BASE-BX-D (TX 1550 - RX1310) BIDI 1550 nm DFB, SM, 20 Km, 14 dB DDMI Simplex SC



LOLG1Gxxx

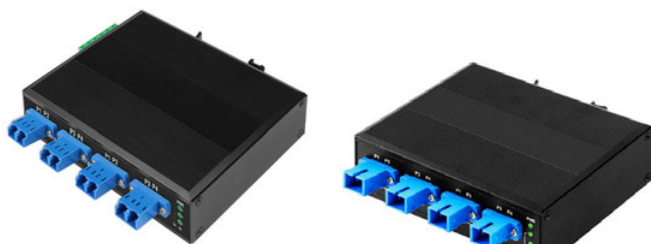
1 GB

Industrial Ethernet Switch+Bypass



Ring process

LBS22MLC, LBS22SLC, LBS22SSC - Fiber Bypass

**LBS22SLC****LBS22SSC**

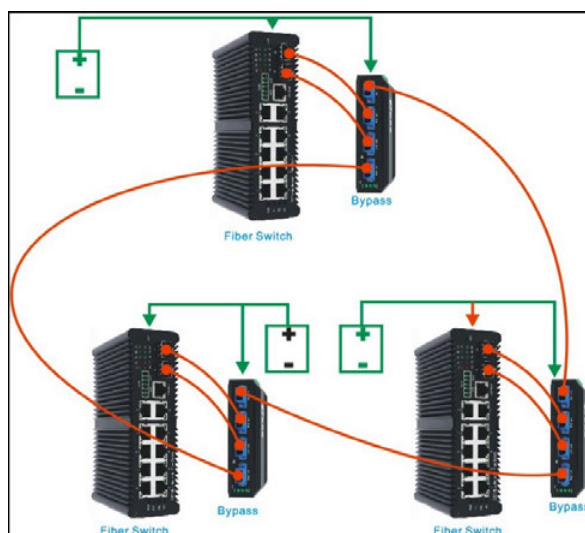
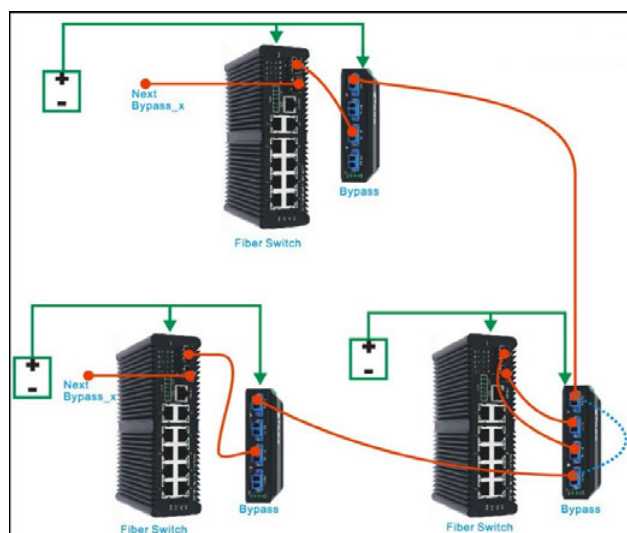
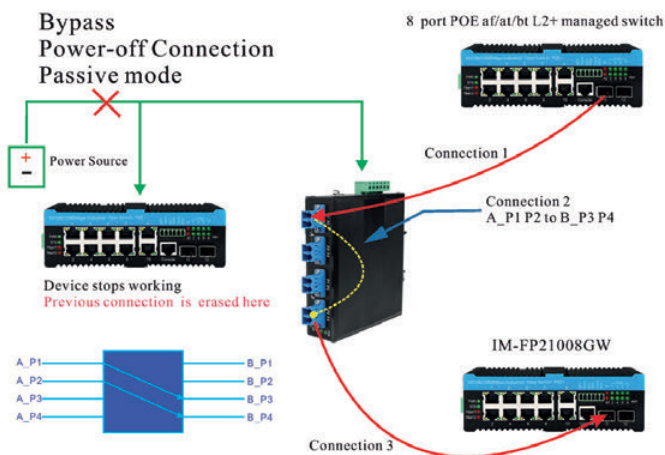
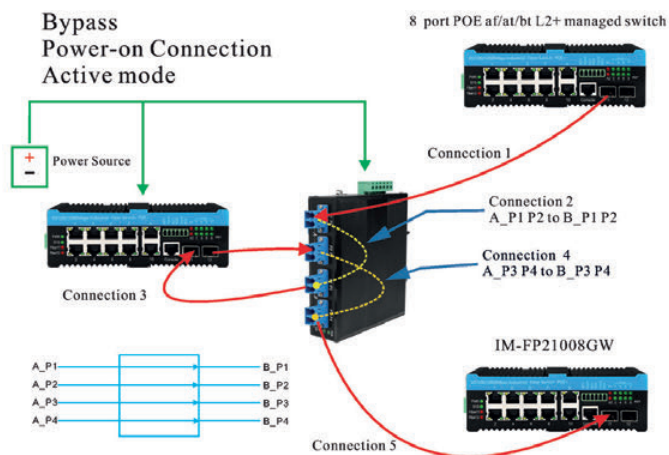
LBS22MLC (Multi mode), LBS22SLC (Single Mode) LBS22SSC (Single Mode)

The Fiber Bypass has the characteristics of low loss, high stability and high reliability. For different optical path needs, optical switch modules can be customized to meet the optical path needs of complex test systems and improve product test efficiency. It is an indispensable core product for the monitoring and protection of optical communication system, which can be connected to high-density optical communication systems.

Key features

- Low Insertion Loss
- Wide Wavelength Range
- Low Channel Crosstalk
- Operating environment temperature: $-20^{\circ} \div +70^{\circ} \text{C}$

SPECIFICA	LBS22MLC, LBS22SLC / LBS22SSC
Product name	Fiber Bypass
Power Interface	Standard industrial terminal block
Polarity protection	Support
Optical fiber interface	LC / SC
Wavelength range	$850 \pm 40 \text{ nm}$ / $1300 \pm 40 \text{ nm}$; $1260 \div 1650 \text{ nm}$
Test wavelength	$850/1300 \text{ nm}$; $1310/1550 \text{ nm}$
Insert loss	Typ: 0.6 dB Max: 1.0 dB ; Typ: 0.6dB Max: 1.0 dB
Return loss	MM $\geq 30 \text{ dB}$ / SM $\geq 50 \text{ dB}$
Channel crosstalk	MM $\geq 35 \text{ dB}$ / SM $\geq 55 \text{ dB}$
Polarization loss	$\leq 0.05 \text{ dB}$
Wavelength loss	$\leq 0.05 \text{ dB}$
Temperature loss	$\leq 0.05 \text{ dB}$
Repeatability	$\leq 0.05 \text{ dB}$
Operating voltage	$3,3 \div 5,0 \text{ Vdc}$
Service life	≥ 100000000 times
Switching time	$\leq 10 \text{ Ms}$
Transmission optical power	$\leq 500 \text{ mW}$
Operating temperature	$-20^{\circ} \div +70^{\circ} \text{C}$





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