

# Industrial Ethernet Switch - FL SWITCH 7005/FX-2FXSM-EIP



2701420

<https://www.phoenixcontact.com/us/products/2701420>

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Managed Switch 7000, 5 RJ45 ports 10/100 Mbps, 1 SC multi-mode 100 Mbps, 2 SC single mode 100 Mbps, PROFINET Conformance-Class A, EtherNet/IP™

## Your advantages

- VLANs
- Common Industrial Protocol (CIP)
- Device Level Ring (DLR)
- Ambient temperature -40 °C ... 70 °C
- RSTP with fast switch-over
- DHCP client, DHCP server (pool-based and port-based), DHCP option 82
- Web-based management, SNMP
- Slim design

## Commercial Data

Item number	2701420
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to Order (non-returnable)
Sales Key	C23
Product Key	DNN122
Catalog Page	Page 327 (C-6-2019)
GTIN	4046356749756
Weight per Piece (including packing)	1,167.2 g
Weight per Piece (excluding packing)	1,000 g
Customs tariff number	85176200
Country of origin	DE

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## Technical Data

### Dimensions

Width	60 mm
Height	130 mm
Depth	135.5 mm

### Mounting

Mounting type	DIN rail mounting
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### Interfaces

#### Ethernet (RJ45)

Connection method	RJ45
Note on the connection method	Auto negotiation and autocrossing
Transmission speed	10/100 Mbps
Transmission physics	Copper
Transmission length	100 m (per segment)
Signal LEDs	Data receive, link status
No. of channels	5 (RJ45 ports)

#### Ethernet FO

Connection method	SC
Transmission speed	100 Mbps (full duplex)
Transmission physics	multi-mode fiberglass
Transmission length	11000 m (fiberglass with F-G 62.5/125 0.7 dB/km F1000) 6400 m (fiberglass with F-G 50/125 0.7 dB/km F1200) 3000 m (fiberglass with F-G 62.5/125 2.6 dB/km F600) 2800 m (fiberglass with F-G 50/125 1.6 dB/km F800)
Wavelength	1300 nm
Signal LEDs	Data receive, link status
No. of channels	1 (SC multi-mode)

#### Ethernet FO

Connection method	SC
Transmission speed	100 Mbps (full duplex)
Transmission physics	Single-mode fiberglass
Transmission length	36000 m (fiberglass with F-G 9/125 0.36 dB/km) 32000 m (fiberglass with F-G 9/125 0.4 dB/km) 26000 m (fiberglass with F-G 9/125 0.5 dB/km)
Wavelength	1300 nm
No. of channels	2 (SC single mode)

### Product properties

Type	Book type
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Product type	Switch
MTTF	117.48 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)
	61.64 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%)
	8.89 Years (SN 29500 standard, temperature 70°C, operating cycle 100%)
Special properties	EtherNet/IP™

## Insulation characteristics

Protection class	III (VDE 0106, IEC 60536)
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## Switch functions

Diagnostic functions	Remanente Event-Table
	RMON History
	N:1-Portmirroring
	LLDP (Link Layer Discovery Protocol)
	SNMP-Traps
	ACD (Address Conflict Detection)
EtherNet/IP™ supported protocols	Common Industrial Protocol
Basic functions	Store-and-forward switch, complies with IEEE 802.3
Signal contact control voltage	24 V DC (typical)
Signal contact control current	1 A (maximum)
PROFINET conformance class	Conformance-Class A
PROFINET device function	Fast Startup
Filter functions	Quality of Service (8 priority classes)
	Port-Priorisierung
	VLAN (up to 32 VLANs)
	IGMP Snooping/Querier (v1/v2)
	Auto-Query-Port
	Extended Multicast Filtering
	Static Multicast Filtering (32 groups)
	Link Aggregation (up to 4 trunks)
IP parameterization	DHCP-Client
	DHCP Option 82 (Relay Agent)
	DHCP server (pool-based, port-based)
	BootP
MAC address table	16k
Management	Web-based management (HTTP/HTTPS)
	SNMPv1/v2/v3
Redundancy	DLR (Device Level Ring)
	RSTP (Rapid Spanning Tree Protocol)
	FRD (Fast Ring Detection)
	Large Tree Support
Status and diagnostic indicators	LEDs: US1, US2 (power supply), Fail (alarm contact), 2 LEDs per Ethernet port (Link and switchable Activity/Speed/Duplex)

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	EtherNet/IP™ status LED: Net, Mod
Additional functions	MAC-based Port Security
Time synchronization	PTP 1588 (Transparent clock on the DLR ports)

## Security functions

Basic functions	Store-and-forward switch, complies with IEEE 802.3
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## Electrical properties

Power consumption	12.8 W
Local diagnostics	US1/2 Supply voltage US1, US2 Green LED
	FAIL Div. LED red
	LINK Link status Green LED
Maximum power dissipation for nominal condition	12.8 W
Test voltage	500 V DC
Test section	for one minute 500 V DC
Transmission medium	Copper
	FO

## Supply

Supply voltage	24 V DC (redundant)
Supply voltage range	12 V DC ... 58 V DC
Power supply connection	Via COMBICON, max. conductor cross section 2.5 mm <sup>2</sup>
Residual ripple	3.6 V <sub>PP</sub> (within the permitted voltage range)
Typical current consumption	445 mA (at U <sub>S</sub> = 24 V DC)

## Function

Signal contact control voltage	24 V DC (typical)
Signal contact control current	1 A (maximum)

## Connection data

Connection method	Screw connection
Conductor cross section, rigid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Stripping length	7 mm

## Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-40 °C ... 70 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	10 % ... 95 % (non-condensing)
Permissible humidity (storage/transport)	10 % ... 95 % (non-condensing)
Vibration (operation)	in acc. with IEC 60068-2-6: 5g, 150 Hz
Air pressure (operation)	86 kPa ... 108 kPa (1500 m above sea level)
Air pressure (storage/transport)	66 kPa ... 108 kPa (3500 m above sea level)

## Standards and regulations

Free from substances that could impair the application of coating	Yes
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# Industrial Ethernet Switch - FL SWITCH 7005/FX-2FXSM-EIP



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## Approval data

### Conformity/Approvals

Noxious gas test	ISA S71.04.2013 G3 Harsh Group A
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## EMC data

Conformance with EMC directives	IEC 61000-6-2 IEC 61000-4-2 (ESD) Criterion B
	IEC 61000-6-2 EN 61000-4-3 (electromagnetic fields) Criterion A
	IEC 61000-6-2 IEC 61000-4-4 (burst) Criterion A
	IEC 61000-6-2 IEC 61000-4-5 (surge) Criterion A
	IEC 61000-6-2 IEC 61000-4-6 (immunity to conducted interference) Criterion A
Electromagnetic compatibility	Conformance with EMC Directive 2004/108/EC
Noise emission	EN 61000-6-4
Noise immunity	EN 61000-6-2:2005

## LED signaling

Status display	LEDs: US1, US2 (power supply), Fail (alarm contact), 2 LEDs per Ethernet port (Link and switchable Activity/Speed/Duplex) EtherNet/IP™ status LED: Net, Mod
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## Approvals



**UL Listed**

Approval ID: FILE E 140324



**cUL Listed**

Approval ID: FILE E 140324

### EtherNet/IP CONFORMANCE TESTED TM

Approval ID: 11221.01

	Nominal Voltage $U_N$	Nominal Current $I_N$	Cross Section AWG	Cross Section $mm^2$
Declaration of conformity			-	-



**cUL Listed**

Approval ID: FILE E 199827



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Approval ID: FILE E 199827

**cULus Listed**

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# Industrial Ethernet Switch - FL SWITCH 7005/FX-2FXSM-EIP



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## Classifications

### ECLASS

ECLASS-9.0	19170106
ECLASS-10.0.1	19170401
ECLASS-11.0	19170401

### ETIM

ETIM 8.0	EC000734
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### UNSPSC

UNSPSC 21.0	43222600
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# Industrial Ethernet Switch - FL SWITCH 7005/FX-2FXSM-EIP



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## Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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## Accessories

### Program / configuration memory

Program / configuration memory - SD FLASH 512MB - 2988146

<https://www.phoenixcontact.com/us/products/2988146>

Program and configuration memory, plug-in, 512 Mbyte.



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### Program / configuration memory

Program / configuration memory - SD FLASH 2GB - 2988162

<https://www.phoenixcontact.com/us/products/2988162>

Program and configuration memory, for extending the internal flash memory, pluggable, 2 GB.



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## Network management software

Network management software - FL NETWORK MANAGER BASIC - 2702889

<https://www.phoenixcontact.com/us/products/2702889>



FL Network Manager, SNMP-based configuration and firmware update software, for easy startup of Managed Switches

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## Driver and interface software

Driver and interface software - FL SNMP OPC SERVER V3 - 2701139

<https://www.phoenixcontact.com/us/products/2701139>



SNMP-OPC server, German and English, for monitoring and configuration of SNMP-capable equipment in HMI and SCADA systems

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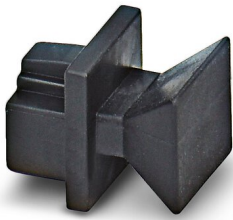
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## Dust protection

Dust protection - FL RJ45 PROTECT CAP - 2832991

<https://www.phoenixcontact.com/us/products/2832991>



Dust protection caps for RJ45 socket

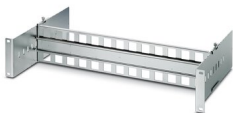
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## DIN rail adapter

DIN rail adapter - FL DIN RA - 2891053

<https://www.phoenixcontact.com/us/products/2891053>

The FL DIN RA is installed in a standard, 19-inch rack (EIA-310-D, IEC 60297-3-100) to allow DIN rail mounted equipment to be rack mounted.



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## Patch cable

Patch cable - FL CAT5 PATCH 0,5 - 2832263

<https://www.phoenixcontact.com/us/products/2832263>

Patch cable, CAT5, assembled, 0.5 m



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## Patch cable

Patch cable - FL CAT5 PATCH 1,0 - 2832276

<https://www.phoenixcontact.com/us/products/2832276>

Patch cable, CAT5, assembled, 1 m



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## Patch cable

Patch cable - FL CAT5 PATCH 2,0 - 2832289

<https://www.phoenixcontact.com/us/products/2832289>

Patch cable, CAT5, assembled, 2 m



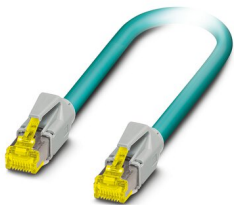
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## Patch cable

Patch cable - NBC-R4AC-R4AC-IE8A/.../... - 1411854

<https://www.phoenixcontact.com/us/products/1411854>

Patch cable, degree of protection: IP20, number of positions: 8, 10 Gbps, CAT6<sub>A</sub>, cable outlet: straight, Ethernet



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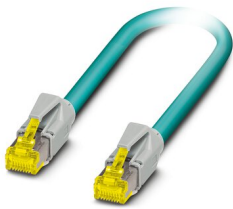
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<https://www.phoenixcontact.com/us/products/2701420>

## Patch cable

Patch cable - NBC-R4AC/10G-R4AC/10G-94F/2,0 - 1408360

<https://www.phoenixcontact.com/us/products/1408360>



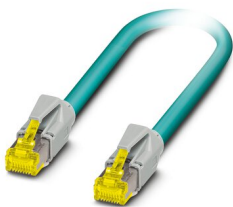
Patch cable, CAT6<sub>A</sub>, 4-pair, shielded, connection not crossed (line), assembled at both ends with RJ45/IP20 connectors, outer sheath material: PUR, length: 2.0 m

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## Patch cable

Patch cable - NBC-R4AC/10G-R4AC/10G-94F/3,0 - 1408365

<https://www.phoenixcontact.com/us/products/1408365>



Patch cable, CAT6<sub>A</sub>, 4-pair, shielded, connection not crossed (line), assembled at both ends with RJ45/IP20 connectors, outer sheath material: PUR, length: 3.0 m

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## Patch cable

Patch cable - NBC-R4AC/1,0-93B/R4AC - 1408968

<https://www.phoenixcontact.com/us/products/1408968>



Patch cable, degree of protection: IP20, cable length: 1 m, number of positions: 4, 100 Mbps, CAT5, material: PA 6.6, PROFINET

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## Patch cable

Patch cable - NBC-R4AC/2,0-93B/R4AC - 1408969

<https://www.phoenixcontact.com/us/products/1408969>



Patch cable, degree of protection: IP20, cable length: 2 m, number of positions: 4, 100 Mbps, CAT5, material: PA 6.6, PROFINET

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## Patch cable

Patch cable - NBC-R4AC/5,0-93B/R4AC - 1408970

<https://www.phoenixcontact.com/us/products/1408970>



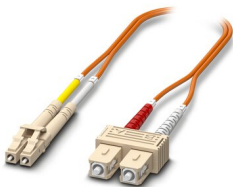
Patch cable, degree of protection: IP20, cable length: 5 m, number of positions: 4, 100 Mbps, CAT5, material: PA 6.6, PROFINET

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## FO patch cable

FO patch cable - FOC-LC:PA-SC:PA-OM2:D01/1 - 1115607

<https://www.phoenixcontact.com/us/products/1115607>



Multi-mode OM2 duplex jumper, LC-SC, UPC polishing, length 1 m

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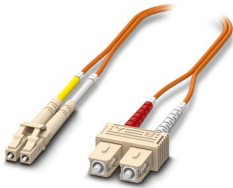
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## FO patch cable

FO patch cable - FOC-LC:PA-SC:PA-OM2:D01/2 - 1115605

<https://www.phoenixcontact.com/us/products/1115605>

Multi-mode OM2 duplex jumper, LC-SC, UPC polishing, length 2 m



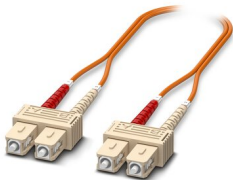
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## FO patch cable

FO patch cable - FOC-SC:PA-SC:PA-OM2:D01/1 - 1115536

<https://www.phoenixcontact.com/us/products/1115536>

Multi-mode OM2 duplex jumper, SC-SC, UPC polishing, length 1 m



# Industrial Ethernet Switch - FL SWITCH 7005/FX-2FXSM-EIP

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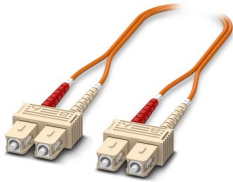
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## FO patch cable

FO patch cable - FOC-SC:PA-SC:PA-OM2:D01/2 - 1115535

<https://www.phoenixcontact.com/us/products/1115535>

Multi-mode OM2 duplex jumper, SC-SC, UPC polishing, length 2 m



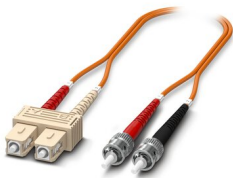
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## FO patch cable

FO patch cable - FOC-ST:PA-SC:PA-OM2:D01/1 - 1115574

<https://www.phoenixcontact.com/us/products/1115574>

Multi-mode OM2 duplex jumper, ST-SC, UPC polishing, length 1 m



# Industrial Ethernet Switch - FL SWITCH 7005/FX-2FXSM-EIP



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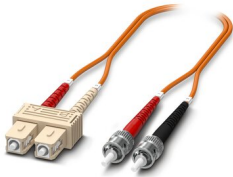
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## FO patch cable

FO patch cable - FOC-ST:PA-SC:PA-OM2:D01/2 - 1115573

<https://www.phoenixcontact.com/us/products/1115573>

Multi-mode OM2 duplex jumper, ST-SC, UPC polishing, length 2 m



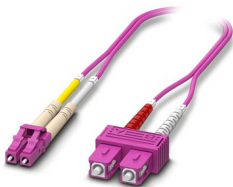
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## FO patch cable

FO patch cable - FOC-LC:PA-SC:PA-OM4:D01/1 - 1115601

<https://www.phoenixcontact.com/us/products/1115601>

Multi-mode OM4 duplex jumper, LC-SC, UPC polishing, length 1 m



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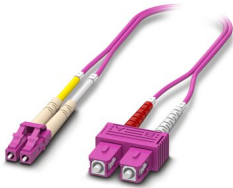
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## FO patch cable

FO patch cable - FOC-LC:PA-SC:PA-OM4:D01/2 - 1115600

<https://www.phoenixcontact.com/us/products/1115600>

Multi-mode OM4 duplex jumper, LC-SC, UPC polishing, length 2 m



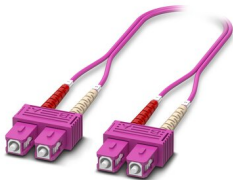
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## FO patch cable

FO patch cable - FOC-SC:PA-SC:PA-OM4:D01/1 - 1115424

<https://www.phoenixcontact.com/us/products/1115424>

Multi-mode OM4 duplex jumper, SC-SC, UPC polishing, length 1 m



# Industrial Ethernet Switch - FL SWITCH 7005/FX-2FXSM-EIP



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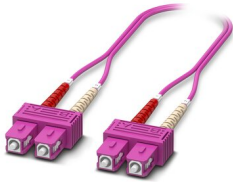
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## FO patch cable

FO patch cable - FOC-SC:PA-SC:PA-OM4:D01/2 - 1115423

<https://www.phoenixcontact.com/us/products/1115423>

Multi-mode OM4 duplex jumper, SC-SC, UPC polishing, length 2 m



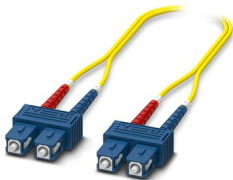
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## FO patch cable

FO patch cable - FOC-SC:PA-SC:PA-OS2:D01/1 - 1115550

<https://www.phoenixcontact.com/us/products/1115550>

Single-mode OS2 duplex jumper, SC-SC, UPC polishing, length 1 m



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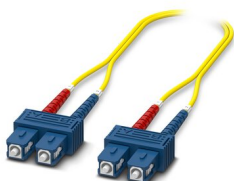
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## FO patch cable

FO patch cable - FOC-SC:PA-SC:PA-OS2:D01/2 - 1115548

<https://www.phoenixcontact.com/us/products/1115548>

Single-mode OS2 duplex jumper, SC-SC, UPC polishing, length 2 m



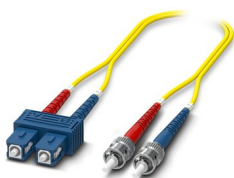
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## FO patch cable

FO patch cable - FOC-ST:PA-SC:PA-OS2:D01/1 - 1115582

<https://www.phoenixcontact.com/us/products/1115582>

Single-mode OS2 duplex jumper, ST-SC, UPC polishing, length 1 m



# Industrial Ethernet Switch - FL SWITCH 7005/FX-2FXSM-EIP



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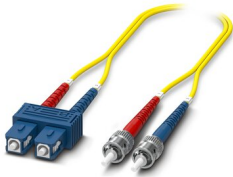
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## FO patch cable

FO patch cable - FOC-ST:PA-SC:PA-OS2:D01/2 - 1115581

<https://www.phoenixcontact.com/us/products/1115581>

Single-mode OS2 duplex jumper, ST-SC, UPC polishing, length 2 m



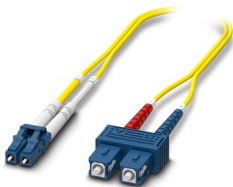
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## FO patch cable

FO patch cable - FOC-LC:PA-SC:PA-OS2:D01/1 - 1115618

<https://www.phoenixcontact.com/us/products/1115618>

Single-mode OS2 duplex jumper, LC-SC, UPC polishing, length 1 m



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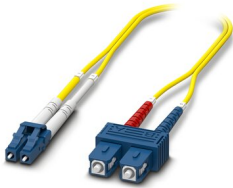
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## FO patch cable

FO patch cable - FOC-LC:PA-SC:PA-OS2:D01/2 - 1115617

<https://www.phoenixcontact.com/us/products/1115617>

Single-mode OS2 duplex jumper, LC-SC, UPC polishing, length 2 m



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