

# INST-SFP-SS-20K-1



## iNS SFP Single Mode Fibre Optic Transceiver

### Features

- ▶ Operating data rates up to 1.25Gbps
- ▶ 1310nm FP laser transmitter
- ▶ 20km reach for 9/125µm fibre optic cable
- ▶ Single 3.3V power supply and TTL Logic Interface
- ▶ Hot-pluggable SFP footprint duplex LC connector interface.
- ▶ Class 1 FDA and IEC60825-1 laser safety compliant.
- ▶ Commercial temperature range: 0~+70°C
- ▶ Compliant with SFF-8472 MSA
- ▶ Built-in digital diagnostic functions, including optical power monitoring



### Description

INST-SFP-SS-20K-1 is a fibre optic transceiver for use with single mode fibre optic cable and operates at a nominal wavelength of 1310nm. This dongle is locked and pre-configured for use with the Kentec DNP-R-2F/FC-K Passive Dual Port Optic Fibre/RS485 Medium Converter.

INST-SFP-SS-20K-1 transceivers are hot-pluggable making it quick easy to replace and also swap between alternate fibre optic modes. Maximum range is 20Km based upon a 9/125µm fibre optic cable.

The transmitter section uses a multiple quantum well 1310nm laser and is class 1 laser compliant according to International Safety Standard IEC60825.

The receiver section uses an Integrated GaAs detector pre-amplifier (IDP) mounted in an optical header and a limiting post-amplifier IC.

INST-SFP-SS-20K-1 is designed to be compliant with SFF-8472 MSA.

Built in digital diagnostic functions allow monitoring of the transceiver by the DNP-R-2F/FC-K converter module and subsequently the IVIEW software tool. This allows performance monitoring along with early warning of a potential issue to enable preventative maintenance.

### iNS Product

INST-SFP-SS-20K-1	iNS SFP Single-mode fibre optic transceiver [20Km]
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### Specifications

#### General Product Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Bit Rate	BR			1.25	Gb/s
Max. Supported Link Length	L(max)			20	km

#### Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	T <sub>(case)</sub>	-40	+85	°C
Supply Voltage	V <sub>cc</sub>	-0.5	3.6	V
Storage Ambient Humidity	H <sub>A</sub>	5	95	%

Optical Characteristics					
Parameter	Symbol	Min.	Typ	Max.	Unit
9µm Diameter SMF	L		20		km
Power Supply Voltage	V <sub>cc</sub>	3.15	3.3	3.45	V
Power Supply Current	I <sub>cc</sub>			300	mA
Data Rate - GBE			1.25		Gb/s
Data Rate - FC			1.063		Gb/s
Transmitter					
Centre Wavelength	λ <sub>c</sub>	1260	1310	1360	nm
Spectral Width (RMS)	Δλ			4	nm
Average Output Power	P <sub>out</sub>	-9		-3	dBm
Extinction Ratio	ER	9			dB
Rise/Fall Time (20%~80%)	tr/tf			0.26	ns
Total Jitter	T <sub>j</sub>			0.43	UI
Output Optical Eye	IEEE802.3ah-2004 Compliant				
TX_Dissable Assert Time	T <sub>off</sub>			10	µs
P <sub>out</sub> @TX Disable Asserted	P <sub>out</sub>			-45	dBm
Receiver					
Centre Wavelength	λ <sub>c</sub>	1260		1600	nm
Receiver Sensitivity	P <sub>min</sub>			-21	dBm
Receiver Overload	P <sub>max</sub>	-3			dBm
Return Loss		12			dB
LOS De-assert	LOSD			-22	dB
LOS Assert	LOSA	-35			dBm
LOS Hysteresis		0.5			dB