

PHORCE (standalone version)

PRODUCT BRIEF

The PHORCE product family is designed to extend the SuperSpeed USB3.1 Gen1 connections beyond the typical 3 meter reach of copper cables. The standalone version of PHORCE consists of two individual modules. A PC module directly connects to any USB3.1 Gen1 port on a host such as a PC. A separate RE module (remote module) connects to user's USB 3.1 Gen1 devices such as a camera, external hard drive, control panel, or any other USB3.1 Gen1 compatible devices. By placing an optical fiber between the PC and RE modules, the PHORCE system can achieve a 300m link distance with a choice of SM or MM fibers. By incorporating swappable optical transceivers, PHORCE can be deployed to any existing fiber networks without opening walls or digging trenches.

KEY FEATURES

- ❖ Provide 5Gb/s transmission bandwidth for up to two USB3.1 Gen1 devices
- ❖ Supports any USB3.1 Gen1 device connection but not backward compatible with USB2.0
- ❖ Compatible with MM, SM fibers and CWDM technologies
- ❖ Available for one fiber solution (LC simplex)
- ❖ Plug and Play, no drivers required
- ❖ LED indicators for system status
- ❖ Low power consumption ~2W while operating
- ❖ Provide USB bus power for USB devices
- ❖ Secure power connector with locking mechanism
- ❖ Secure USB connectors with thumbscrew locking mechanism
- ❖ Secure installation with mounting wings
- ❖ Provide optical isolation
- ❖ Compact size

APPLICATIONS

- ❖ Long distance USB3.1 Gen1 accessories connections
- ❖ USB3Vision applications
- ❖ Machine vision applications
- ❖ Intelligent traffic control systems
- ❖ Security surveillance systems
- ❖ Remote data storage systems
- ❖ Automation inspection systems
- ❖ High resolution images and real-time analysis for science, sports and automobile tests

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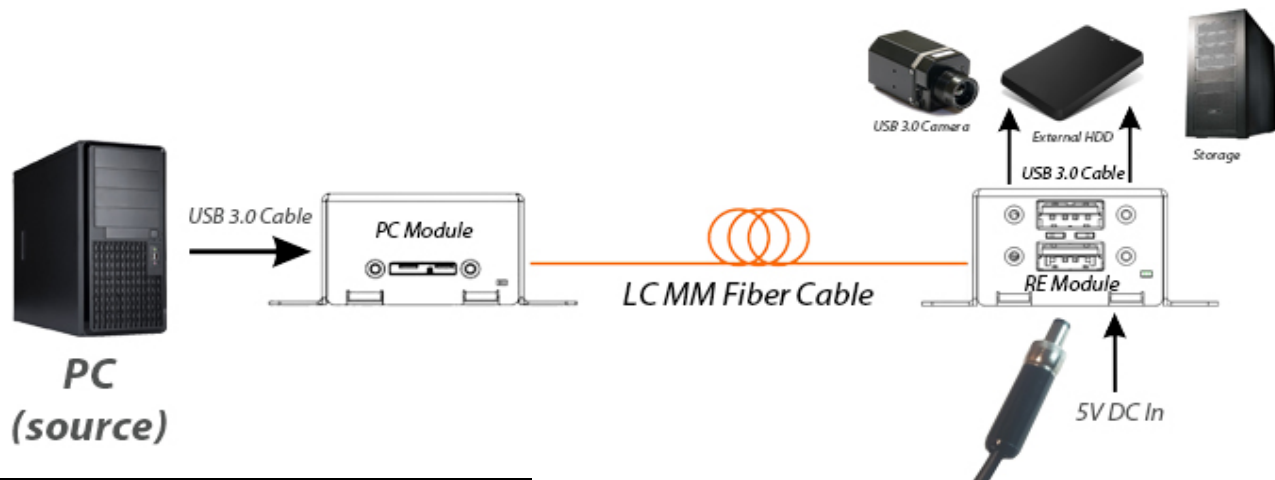
PHORCE

USB 3.1 Gen1 (USB3.0) Optical Fiber Extender

PHU31-M
PHU31-S
PHU31-SL
PHU31-Cxx



TYPICAL SET UP DIAGRAM



TECHNICAL SPECIFICATIONS

Module Specifications

| Available Models | | PHU31-M | PHU31-S | PHU31-SL | PHU31-Cxx |
|----------------------------------------------------|-----------|---------------------------------------------|-------------|-------------|-----------|
| Max Link Distance ^{*1} | | 300 m (1000 ft) | | | |
| Wavelength | | 850nm | 1310nm | 1270/1330nm | CWDM grid |
| Required number of fibers | | 2 | 2 | 1 | 2 |
| Optical Connector Type | | LC Duplex | LC Duplex | LC Simplex | LC Duplex |
| Fiber Type | | OM2, OM3, OM4 | 9/125 um SM | | |
| Input Voltage | | 5 +/- 0.25 V DC | | | |
| USB connectors | PC module | Micro-AB receptacle | | | |
| | RE module | Type-A receptacle | | | |
| Power Consumption with 1 USB device ^{*2} | | 1.8W excluding USB bus powered devices | | | |
| Power Consumption with 2 USB devices ^{*2} | | 2.3W excluding USB bus powered devices | | | |
| Operating Temperature (standard version) | Case | 0 ~ 65 °C | | | |
| | Ambient | 0 ~ 50 °C | | | |
| Operating Temperature (industrial version) | Case | -40 ~ 80 °C | | -20 ~ 80 °C | |
| | Ambient | -40 ~ 65 °C | | -20 ~ 65 °C | |
| Operating Humidity | | 20~80% Non-condensing | | | |
| Storage Temperature | | -40 ~ 85°C | | | |
| Storage Humidity | | 10~90% Non-condensing | | | |
| Dimensions (L x W x H) excluding mounting wings | | 72 x 38 x 24 mm 2.83 x 1.5 x 0.94 inches | | | |
| Weight | | PC module: 56g ; RE module: 66g | | | |

*1 The link distances are estimated with 50/125um OM3 MM fiber and 9/125um SM fiber.

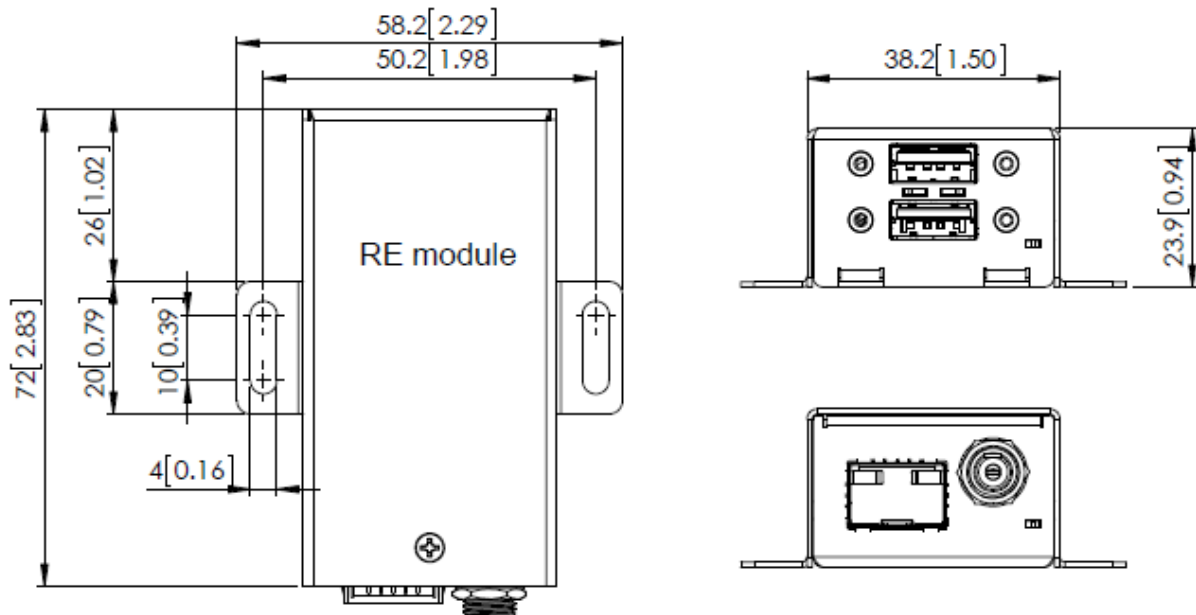
*2 The power consumption was measured with PHU31-M at 25C.

Power Supply Specifications (only apply to RE module)

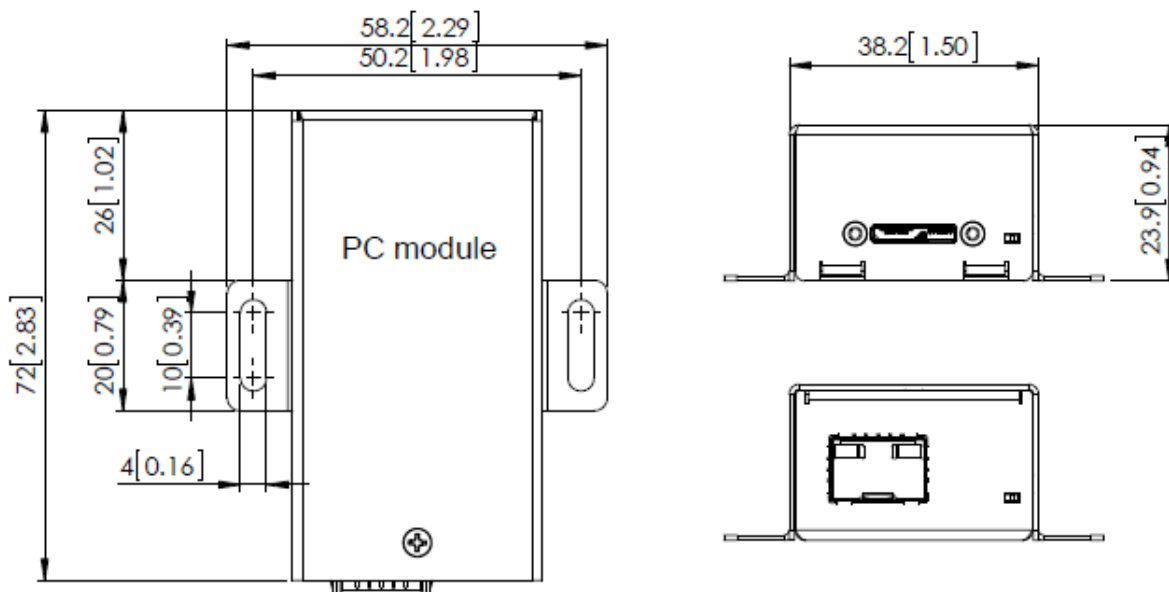
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|---------------------|-------------------|
| AC Input | 100 ~ 240V AC |
| DC Output | 3.0 A @ 5V DC |
| DC Jack Polarity | Center 5V |
| DC Jack Part Number | Switchcraft S760K |

MECHANICAL INFORMATION (mm)[inch]

RE Module



PC Module



ORDERING INFORMATION

Standard models

| Ordering Part # | Link Distance | Fiber type | Connector type | Items included |
|-----------------|-------------------|----------------------------------|----------------|----------------------------------------------------------------------------------|
| PHU31-M | 300m (1000 ft) | 2x OM2 or OM3 or OM4 fiber | LC duplex | 1x PHU31-M-PC module 1x PHU31-M-RE module 1x 15W wall mount power supply |
| PHU31-S | 300m (1000 ft) | 2x SM fiber | LC duplex | 1x PHU31-S-PC module 1x PHU31-S-RE module 1x 15W wall mount power supply |
| PHU31-SL | 300m (1000 ft) | 1x SM fiber | LC simplex | 1x PHU31-SL-PC module 1x PHU31-SL-RE module 1x 15W wall mount power supply |

Industrial models

Add "-T" at the end of the standard model part number.

CWDM models (user needs to specify wavelength for both -PC and -RE device)

| Ordering Part # | Tx Optical Wavelength | Rx Optical range | Connect or type | Items included |
|---------------------|-----------------------|-------------------|-----------------|------------------------------------------------------------------------------------|
| PHU31-C27-xx | 1270 nm | 1260 ~ 1620 nm | LC duplex | 1x PHU31-Cxx-PC module 1x PHU31-Cxx-RE module 1x 15W wall mount power supply |
| PHU31-C29-xx | 1290 nm | | | |
| PHU31-C31-xx | 1310 nm | | | |
| PHU31-C33-xx | 1330 nm | | | |
| PHU31-C35-xx | 1350 nm | | | |
| PHU31-C37-xx | 1370 nm | | | |
| PHU31-C39-xx | 1390 nm | | | |
| PHU31-C41-xx | 1410 nm | | | |
| PHU31-C43-xx | 1430 nm | | | |
| PHU31-C45-xx | 1450 nm | | | |
| PHU31-C47-xx | 1470 nm | | | |
| PHU31-C49-xx | 1490 nm | | | |
| PHU31-C51-xx | 1510 nm | | | |
| PHU31-C53-xx | 1530 nm | | | |
| PHU31-C55-xx | 1550 nm | | | |
| PHU31-C57-xx | 1570 nm | | | |

PHU31-M/S/SL/Cxx

| | | | | |
|--------------|---------|--|--|--|
| PHU31-C59-xx | 1590 nm | | | |
| PHU31-C61-xx | 1610 nm | | | |

Accessory

| Part # | Description |
|-------------------|------------------------------------------------------------------------------|
| 618-GE24I05-S760K | 15W AC/DC adapter with 5V DC output |
| LC-LC-M2-D-xxxM | LC to LC duplex 50/125 μ m OM2 MM fiber. xxx = desired length in meters. |
| LC-LC-M3-D-xxxM | LC to LC duplex 50/125 μ m OM3 MM fiber. xxx = desired length in meters. |
| LC-LC-S-D-xxxM | LC to LC duplex 9/125 SM fiber. xxx = desired length in meters. |

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