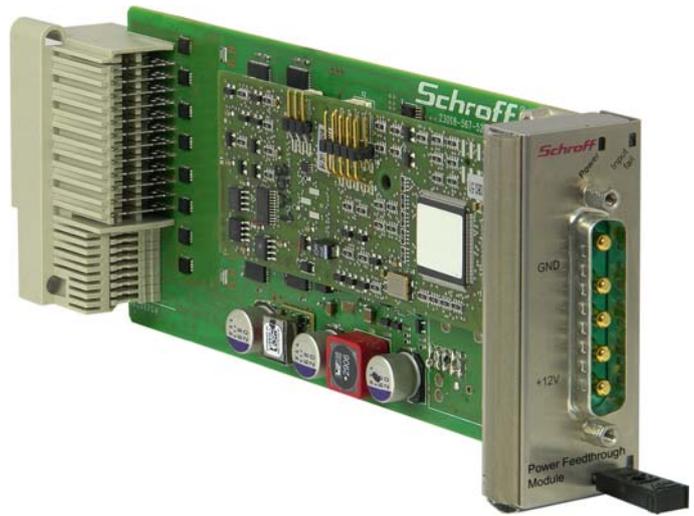


## General Information

The Schroff Power Feedthrough Module (PFM) 21596-571/-572 is a Single Full-size module.

The PFM can be plugged-in into the Power Module (PM) slot of a MicroTCA system and meets the PM requirements for power management.

The PFM distributes a 12 VDC voltage from an external power supply to 16 AMC, CU and MCH payload channels and generates the 3.3 V for 16 management power channels.



### Caution!

Redundant operation of two PFMs in a MicroTCA carrier/shelf is **not** possible!

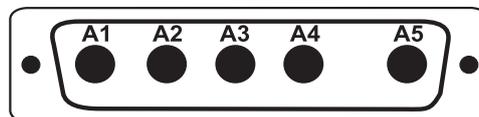
## Technical Data

	21596-571	21596-572
<b>Input voltage</b>	12 VDC	12 VDC
<b>Input current</b>	40 A	80 A
<b>Output (Payload power)</b>	16 channels, limited to 9,3 A per channel (20 A < 3 ms)	16 channels, limited to 9,3 A per channel (20 A < 3 ms)
<b>Output (Management power)</b>	16 channels, limited to 195 mA per channel (300 mA < 200 ms)	16 channels, limited to 195 mA per channel (300 mA < 200 ms)
<b>Overvoltage protection at input</b>	Input protected up to 70 VDC, PFM denies operation when: $10\text{ V} < U_{\text{input}} < 14\text{ V}$	No
<b>Reverse polarity protection at input</b>	Yes	No

## Power Input:

The PFM provides a D-Sub 5W5 male connector for power input at the front panel.

**Info:** The maximum current rating is 40 A per contact. In order to balance the load, it is mandatory to use both 12 V and both GND contacts of the connector.



D-Sub 5W5 male

A1 = 12 V  
A2 = 12 V  
A3 = n.c.  
A4 = GND  
A5 = GND

## Overcurrent Protection:

The management power is limited to 195 mA (300 mA,  $t < 200\text{ ms}$ ), the payload power to 9.3 A (20 A,  $t < 3\text{ ms}$ ) per channel. When the current exceeds one of these two limits, the PFM is powering down the respective channel and sends a Power Channel Notification Event. The PFM clears the over-current bit after 100 ms independently. During this period the MCH can not turn on the power channel again.

## Power Management

The PFM provides the management functionality according to PICMG specification MTCA.0, R1.0. It enables a central management instance like an MCH to individually control payload power supply to the AMC slots and the Cooling Unit.

The PFM provides the following functionality:

- Detection of insertion or removal of AMC modules
- Managed payload power switching
- Payload power fault detection
- 3.3 V Management power fault detection

The management part of the PFM acts as a MicroTCA conform power management module. The signals PS1#, PWR\_ON, PGOOD, EN\_PP are reflected in the respective bits of the Power Channel Status message [MTCA.0 R1.0, table 3-29] or Power Channel Notification Event message [MTCA.0 R1.0, table 3-30].

After power up, the PFM starts in autonomous mode and applies power to the MCH and CU slots. As soon as the MCH has taken over control of the PFM by applying the heartbeat signal, the PFM changes to normal mode and reacts to power commands from the MCH.

## IPMI Command Support

The PFM supports the standard MMC command set according to [AMC.0 V2.0] specification as far as applicable for power modules and the EMMC extensions for power modules. (See chapter 3.16 in the MicroTCA specification)

## IPMI Sensor Data Records

The PFM provides the following sensor data records:

- Device Locator Record (record type 0x12)
- Hot Swap Sensor (compact sensor type 0x02)
- IPMB Sensor
- Power Channel Notification Sensor
- Power Supply Status Sensor Record
- Temp. Sensor (2 x LM75)

**Note:** The hot swap sensor is implemented for compliance reasons only. It has no real function as the PFM is not hot swappable (redundant operation of two PFMs in a MicroTCA carrier/shelf is **not** possible!).

## IPMI FRU Information

The PFM FRU record contains the following information:

- Product Information
- Power Module Capability Record [MTCA.0 R1.0, table 3-27].

## Event messages generated by the PFM

The PFM generates Power Channel notification event messages (MTCA.0 R1.0, table 3-30) on any change of the status of the power channels, i.e:

- PS1# signal assertion /de-assertion
- PWR\_ON signal assertion/de-assertion, Payload on/off
- PGood signal change
- Over-current detection