

PU1 – 3U 12HP PSU for 19" systems, 110 VDC nom.

- **19" rack mountable (VMEbus, CompactPCI®)**
- **3U, 12 HP**
- **Input 110 VDC nom. (77..137.5 V)**
- **Max. input voltage range 66..154 V (according to EN 50155)**
- **Output 5.1 V**
- **Power 75 W**
- **H15 DIN 41612 plug connector (front and rear)**
- **-40 to +85°C without derating, with qualified components**
- **Conformal coating**
- **Complies with EN 50155 (railways)**



The 3U 12HP power supply unit PU1 is a plug-in device for 19" systems (e.g. VMEbus, CompactPCI®) and is especially designed for railway computer systems, being fully compliant with EN 50155.

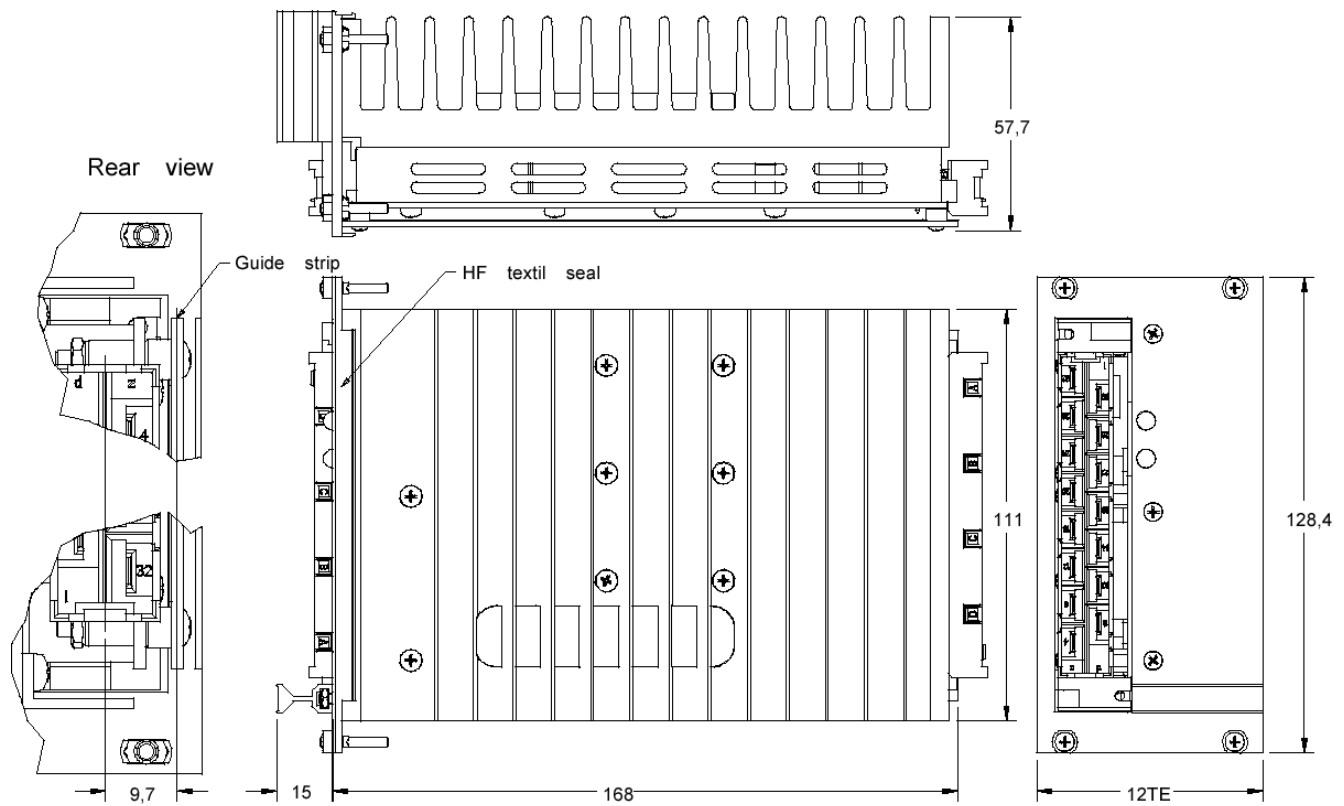
The 1.5 kV (effective) optically isolated PSU comes with a nominal input voltage of 110 VDC with a wide input range of 77..137.5 V (max. input voltage range 66..154 V according to EN50155) and a single output

of 5 V at 75 W. It works up to +85°C without derating, delivering a thermal warning at over-temperature and switching off at +95°C.

The PSU supports an error signal (5 ms hold-up time), reverse-connect protection, permanent short-circuit protection, voltage control, synchronization, voltage in fail (ViF) and voltage out fail (VoF) as well as remote on/off.

The subassembly is immersion-painted und partially cast, and components are secured against vibration. The thermal stress is extremely low due to integrated heat sinks and diversion of dissipated heat over the mounting surface.

Diagram



Technical Data

General	■ Standard Euro rack size 19" ■ Integrated heat sink for extremely low thermal stress to temperature sensitive components ■ Glued parts for better vibration resistance ■ Overtemperature and overvoltage shutdown ■ Short circuit protection ■ Remote on/off ■ LEDs: green LED indicates correct input voltage, yellow LED indicates operating mode ■ Fixed switching frequency 200kHz ■ Reverse polarity protection by internal protector ■ Thermal Warning (TW) □ Operating criteria: Overtemperature shutdown -5K (Risk of overtemperature exists.) □ Output TW: Output with NPN transistor, emitter connected with V out-; max. current 30mA ■ Hold-up Time □ According to EN 50155 Class S2 for P out 75W ■ Supply Fail (FAL) □ Output FAL: Isolated optocoupler output with NPN transistor □ Current: 5mA □ Voltage max.: 5V □ Pins: Open collector FAL, emitter FAL connected to V out- □ Isolation: FAL-V in: 1.500 Vrms ■ Sense (S) □ Provides compensation of voltage drops (max. 0.2V each line) between power supply and load □ Pins S+ and S- of converter must be connected to load ■ Shutdown interrupt (SD-INT) □ SD-INT in: 24V □ SD-INT out current: 5mA □ SD-INT out voltage: 5V □ SD-INT out pins: Collector pull-up resistor 10K to V out+ □ SD-INT out isolation: SD-INT in to SD-INT out: 1.500 Vrms
Input Characteristics	■ Nominal voltage input: 110V DC ■ Wide input range: $0.7 \times \text{nominal voltage} < \text{nominal voltage} < 1.25 \times \text{nominal voltage}$ (according to EN50155) □ 77..137.5 VDC ■ Max. input voltage range: $0.6 \times \text{nominal voltage} < \text{nominal voltage} < 1.4 \times \text{nominal voltage}$ with full functionality for 0.1 s, no damage for 1 s (according to EN50155) □ 66..154 VDC ■ Voltage on threshold: 1.1V ■ No load input current: 15mA
Output Characteristics	■ Output: 5V/75W ■ Accuracy: $\pm 0.5\%$ ■ Voltage deviation: 12% ■ Rise time: 80ms ■ Overvoltage protection: 1.2V ■ Overcurrent protection: 1.08A min., 1.15A max. ■ Overtemperature shutdown: 101°C min., 105°C typ., 107°C max.
Connection	■ Input and output via DIN 41612 plug connector, type H15
Electrical Specifications	■ Isolation □ Input/output: 1500V eff □ Input/case: 1500V eff □ Output/case: 500V eff ■ MTBF: tbd. @ 50°C (derived from MIL-HDBK-217F)
Mechanical Specifications	■ Dimensions: 3U, 12HP, 128.4mm height ■ Weight: ca. 1395g

Technical Data

Environmental Specifications	■ Temperature range (operation): -40..+85°C ■ Temperature range (storage): -40..+105°C ■ Shock: according to IEC 68-2-27 ■ Continuous shock: according to IEC 68-2-29 ■ Vibration: according to IEC 68-2-6 ■ Protection □ Class of protection: Class I, EN 60950 □ Degree of protection: IP20 (inserted in rack), DIN 40050 (IEC 529) ■ Pollution degree: 2 (EN 60950)
Safety	■ Tbd.
EMC	■ Tbd.

Ordering Information

Standard PU1 Models	0712-0001	PU1 - 3U 12HP PSU, input 110VDC nominal (77..137.5), output 5V/75W, -40..+85°C qualified, conformal coating, no RoHS
----------------------------	------------------	--

Contact Information

Germany

MEN Mikro Elektronik GmbH
Neuwieder Straße 3-7
90411 Nuremberg
Phone +49-911-99 33 5-0
Fax +49-911-99 33 5-901

info@men.de
www.men.de

France

MEN Mikro Elektronik SA
18, rue René Cassin
ZA de la Châtelaine
74240 Gaillard
Phone +33 (0) 450-955-312
Fax +33 (0) 450-955-211

info@men-france.fr
www.men-france.fr

USA

MEN Micro, Inc.
24 North Main Street
Ambler, PA 19002
Phone (215) 542-9575
Fax (215) 542-9577

sales@menmicro.com
www.menmicro.com

The date of issue stated in this data sheet refers to the Technical Data only. Changes in ordering information given herein do not affect the date of issue. All brand or product names are trademarks or registered trademarks of their respective holders.

MEN is not responsible for the results of any actions taken on the basis of information in the publication, nor for any error in or omission from the publication.

MEN expressly disclaims all and any liability and responsibility to any person, whether a reader of the publication or not, in respect of anything, and of the consequences of anything, done or omitted to be done by any such person in reliance, whether wholly or partially, on the whole or any part of the contents of the publication.

The correct function of MEN products in mission-critical and life-critical applications is limited to the environmental specification given for each product in the technical user manual. The correct function of MEN products under extended environmental conditions is limited to the individual requirement specification and subsequent validation documents for each product for the applicable use case and has to be agreed upon in writing by MEN and the customer. Should the customer purchase or use MEN products for any unintended or unauthorized application, the customer shall indemnify and hold MEN and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim or personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that MEN was negligent regarding the design or manufacture of the part.

In no case is MEN liable for the correct function of the technical installation where MEN products are a part of.

Copyright © 2013 MEN Mikro Elektronik GmbH. All rights reserved.