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DK 7979.531 PDU metered plus

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ENCLOSURES

POWER DISTRIBUTION

CLIMATE CONTROL

IT INFRASTRUCTURE

SOFTWARE & SERVICES

FRIEDHELM LOH GROUP



DK 7979.531 - PDU metered plus

High-end IT rack power distribution: Smart PDU with energy measurement per slot, i.e. output requirement for each individual consumer.



Features

Model No.	DK 7979.531
Product description	High-end power distribution in a compact design for IT network and server racks. With power measurement per individual outgoing slot.
Benefits	<p>For vertical mounting, it may be attached in the zero-U space of the Rittal VX IT or TS IT rack with no need for tools</p> <p>Colour coding of phases and fuse circuits (L1=pink, L2=black, L3=white)</p> <p>Tool-free divider kit for VX IT</p> <p>PDU self-supplied, no external power supply required</p> <p>Measurement accuracy $\pm 1\%$ (kWh) to EN 62 053-21</p> <p>Integral real-time clock with battery buffering (max. 10 years, battery replaceable)</p> <p>Integral electromagnetic buzzer for acoustic alarms</p> <p>Adjustable limit values (warning/alarm) for current, voltage, output, individual settings for each output slot</p> <p>Power-saving design, minimal intrinsic power consumption</p>

Features

Technical specifications	<p>Display/controller unit in the PDU enclosure rotatable through 180° and replaceable</p> <p>Integral, fully-redundant power pack, power supply from all phases</p> <p>Error-tolerant PDU power supply redundant across all phases</p> <p>Voltage V, current A, frequency Hz</p> <p>Active power, active energy, apparent power, apparent energy</p> <p>Power factor (cosPhi) and phase angle</p> <p>Zero conductor current measurement/load imbalance detection</p> <p>Fuse monitoring for PDUs with integral fuse</p> <p>Bright TFT display, 128 x 128 pixels (RGB) with back-lighting and energy-saving mode to display output data and basic PDU configuration</p> <p>Position sensors for display rotation and correct PDU representation on the website</p> <p>Multi-colour LEDs (green/amber/red) to indicate switching states and limits per individual output slot</p> <p>Power LED to indicate voltage</p>
Material	<p>Aluminium section, black anodised</p> <p>Slots: Plastic</p>
Supply includes	Assembly parts
Options	<p>Type 3 overvoltage protection with interchangeable arresters while operational, with status monitoring, suitable for integration into PDU enclosure</p> <p>Residual current measurement (type B) per infeed/phase/fuse</p> <p>Monitoring of the optionally available overvoltage protection</p> <p>CMC III CAN bus sensors may be connected for ambient monitoring, max. 16 sensors</p> <p>Other enclosure colours are available</p>
Measurement functions, description	<p>Measurement per phase or infeed</p> <p>Plus measurement per output slot</p> <p>Powerful CPU (ARM Cortex A8)</p> <p>Digital input (floating contact)</p> <p>Additional alarm output/relay output (changeover contact)</p>
Dimensions	<p>Width: 44 mm</p> <p>Depth: 70 mm</p> <p>Length: 1,495 mm</p>
No. of sockets and type	12 x C19
Sockets	12 x C 19

Features

Rated operating voltage	400 V (AC)
Rated current (max.)	32 A
Power consumption	22 kW
Infeeds	Qty.: 1 Phases per infeed: 3~
Length of connection cable	3 m
Type of electrical connection	CEE
Interfaces	USB 2.0 port (USB-A) for mass configuration, firmware updates & data logging CAN bus interface (RJ 45) for a maximum of 16 ambient sensors Serial interface RS232 (RJ12) for LTE unit, scripting, CLI Use of own certificates/TLS 1.2 E-mail forwarding in case of alarm (SMTP) User administration including rights management LDAP(S)/Radius/Active Directory connection Syslog server connection (max. 2 servers) Fully redundant Ethernet interface 10/100/1000 Mbit/s
Number RJ45 ports for sensor units max	6
Directives	EMC Directive 2014/30/EU Low Voltage Directive 2014/35/EU
Standards	EN 62368-1 EN 61000-3 EN 61000-4 EN 61000-6 EN 62053-21
Protocols	Web server (HTTP, HTTPS, SSL) SSH, Telnet, NTP TCP/IP v4 & v6, DHCP, DNS SNMP v1, v2c & v3, Modbus/TCP, OPC-UA MIB for linking into 3rd party DCIM software FTP/SFTP (update/file transfer)
Operating temperature range	5 °C...50 °C
Ambient humidity (non-condensing)	10...95 %

Features

Storage temperature range	-20 °C...70 °C
To fit	Enclosure type: VX IT enclosure frame: ≥ 1,800 mm Enclosure type: VX IT 19" mounting angles: ≥ 1,800 mm
Packs of	1 pc(s).
Net weight	0.001
Gross weight	0.001
Customs tariff number	85369095
EAN	4028177948372
E-Number Sweden	E8439009
ETIM 9	EC002762
ETIM 8	EC002762
ECLASS 8.0	27142604

Approvals

Approvals	TÜV
Explanations	Declaration of conformity

Tender text

Compact power distributor for deployment in IT server and network enclosures. Vertical installation in the Zero-U space using the supplied universal brackets for common IT racks. Suitable for tool-free quick assembly in the Rittal VX IT and TS IT racks using the special supplied plug-%-play fastener. Robust aluminium housing with permanently mounted output slots, IEC 60320/C13 or IEC 60320/C19 as well as CEE 7/3 (earthing-pin) and BS 1363 (UK), depending on the type (see below for details). The IEC C13 / C19 output slots can be protected with a lock against unintentional removal of the connectors. Unused slots can be closed with slot covers available as accessories. This precludes an unintentional overloading of individual phases and circuits. The fuse circuits and phases are colour-coded for multiphase PDU variants. A fixed-mounted connection cable with IEC C20 or CEE connector appropriate for the variant makes the PDU available for immediate deployment. The PDU metered plus has extensive measurement functions for the current and power monitoring of each output slot. The integral TFT colour display enables the basic configuration setting and quick access to the electrical consumption data. Two Gigabit network interfaces and the integrated Web server allow remote access and data transmission using various protocols. The consumption parameter can be SNMP, OPC-UA, Modbus/TCP. For monitoring the ambient parameters, up to 16 sensors (for example temperature / humidity / smoke / leakage / access) as well as VX IT and TS IT handle systems from the CMC accessories program can be connected to the CAN sensor interface. Optionally, an overvoltage protection module (type3) can be placed on the PDU at the infeed; the overvoltage protection module is equipped with arrestors that can be replaced during operation. For intelligent PDUs, the status is monitored via the network interface, the PDU basic has a floating alarm contact for monitoring the overvoltage protection. As option, intelligent PDU

variants can be supplied with an AC/DC sensitive
 residual current measurement (RCM type B) with up to 6
 measurement points. This changes the PDU length and the
 number of installed slots for each standard length.
 The warranty for proper operation is 24 months.
 Technical specifications metered plus
 Input voltage range (L1-L2-L3/N/PE): 400 VAC, 50-60Hz
 input current: 32A
 No. of phases: 3
 Marking of phases (3-phase PDU only L1, L2, L3):
 Rittal Power Pink, black, white
 Number of slots type IEC 60320/C13 (total): -
 Number of slots type IEC 60320/C13
 (per phase/fuse): -
 Number of slots type IEC 60320/C19 (total): 12
 Number of slots type IEC 60320/C19
 (per phase/fuse): 4 / 2
 Number of slots type CEE 7/3 (total): -
 Number of slots type CEE 7/3:
 (per phase/fuse): -
 No. of circuit breakers: 6
 Hydraulic-magnetic protective circuit-breaker: 16 A
 Connector PDU input:
 EN 60309 / CEE (3L+N+PE,6h)
 Length of connection cable: 3m
 Connection cable type: H05- VV
 No. of wires: 5
 Cable cross-section: 4mm²
 PDU housing width: 44mm
 PDU housing depth: 70mm
 PDU housing height: 1495 mm
 PDU Material: Aluminium, eloxiert in RAL 9005 (schwarz)<(,>,<)>
 other colours available on request
 PDU mounting adaptor (VX IT / TS IT) –Mounting options:
 Frame + Zero-U space + cable route
 Measurement functions: Measurement per output slot
 Values recorded (per output slot): Voltage (V)
 current (A), frequency (HZ), active power (kW),+
 active energy (kWh), apparent energy (kVAh)<(,>,<)>
 apparent power (kVA), reactive power (var), power factor
 THD (voltage and current) for 3 phases,
 Crest factor for single-phase<(,>,<)>

Neutral conductor current measurement
fuse monitoring (at 32 A)
Optional: Residual current monitoring (RCM): RCM Typ B
max. 6 measurement points per PDU possible,
(input / per phase / per fuse)<(>,<)>
0 mA – 100 mA je RCM
Voltage measurement range: 90 – 255 V
Voltage resolution: 0.1 V
Current measuring range 0 - 16A/32A
Current resolution: 0.01 A
Measurement accuracy (measurement error, typ.): 1 %
Freely settable limit values per slot
Controllerboard: can be rotated
and replaced during operation
Display: TFT, RGB 128x128 pixels
Network interface: 2x RJ45, je 10/100/1000 MBit/s
Supported protocols: IPv4 / IPv6<(>,<)>
integral web server, HTTP, HTTPS,
SSL, SSH, NTP, Telnet, TCP/IP v4 und v6, DHCP, DNS<(>,<)>
NTP, Syslog, SNMP v1, v2c und v3, Traps, OPC-UA,
Modbus/TCP, FTP/SFTP (update/file transfer),
E-mail forwarding (SMTP)
User administration including rights management: Yes
LDAP(S)/Radius connection: Yes
USB port for firmware update
and data logging functions: Yes
Initial commissioning / mass configuration:
yes, with predefined CSV file
CAN bus interface: RJ45, for connecting 16 sensors
CAN sensor types: Temperature, temperature/humidity<(>,<)>
infrared access sensor, leakage, airflow
EFD, NH measurement module, smoke alarm, vandalism
differential pressure, VX IT / TS IT handle system
Plug & play drivers - Rittal RiZone DCIM software: Yes
Digital input: 1
Alarm relay: 48 V DC/2 A
Acoustic signal encoder
Serial interface:
RS232 (e.g. for LTE unit 7030.571)
Conformity: CE
Standards:
Safety: EN 62368

EMC: EN 55022 / B
EN 61000-4-2
EN 61000-4-3
EN 61000-6-2
EN 61000-6-3
Low Voltage Directive: 2014/35/EU
EMC Directive: 2014/30/EU
MTBF (bei 40°C): 100.000 hours
Protection category: IP20 (EN 60529)
Protection class: 1
Pollution degree: 2
Overvoltage category: II
Environmental properties: 2011/65/EU (RoHS 2), WEEE
Storage temperature: -20°C to +70°C
Ambient temperature: +5°C to +50°C
Ambient humidity: 10-95% rel. humidity, non-condensing
Operating altitude (max. above mean sea level): 3000 m
Connector lock for C14 and C20 connectors:
1x (further connector locks optional - DK 7979.020)
Covers C13 (optional accessory): DK 7955.010
Covers C19 (optional accessory): DK 7955.015
Warranty: 24 months
Type: Rittal PDU metered+ Model No.: DK 7979.531