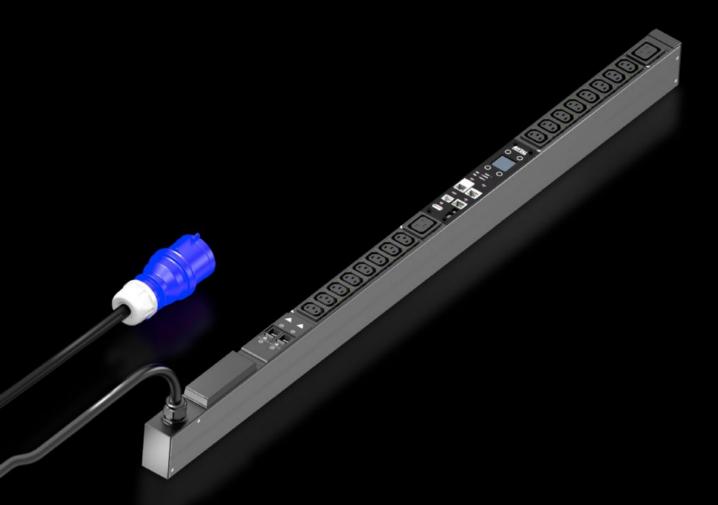
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# DK 7979.412 PDU managed

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POWER DISTRIBUTION >> CLIMATE CONTROL

IT INFRASTRUCTURE SOFTWARE & SERVICES

FRIEDHELM LOH GROUP

ENCLOSURES

# DK 7979.412 - PDU managed

High-end IT rack power distribution with energy measurement and monitoring functions for each individual output slot. Input with CEE connector (16 A/32 A) with C13 and C19 outputs.



Model No.	DK 7979.412
Product description	High-end power distribution in a compact design for IT network and server racks. Depending on the design, they come with an extensive range of management functions for energy measurement and monitoring.
Benefits	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
	Colour coding of phases and fuse circuits (L1=pink, L2=black, L3=white)
	Tool-free divider kit for VX IT
	PDU self-supplied, no external power supply required
	Measurement accuracy ± 1% (kWh) to EN 62 053-21
	Programmable startup behaviour following voltage recovery (on/ off/last status)
	Programmable switching behaviour (time/programmable logic)
	Integral real-time clock with battery buffering (max. 10 years, batter) replaceable)
	Integral electromagnetic buzzer for acoustic alarms
	Adjustable limit values (warning/alarm) for current, voltage, output, individual settings for each output slot

Technical specifications	Display/controller unit in the PDU enclosure rotatable through 180° and replaceable
	Integral, fully-redundant power pack, power supply from all phases
	Error-tolerant PDU power supply redundant across all phases
	Voltage V, current A, frequency Hz
	Active power, active energy, apparent power, apparent energy
	Power factor (cosPhi) and phase angle
	Zero conductor current measurement/load imbalance detection
	Fuse monitoring for PDUs with integral fuse
	Bright TFT display, 128 x 128 pixels (RGB) with back-lighting and
	energy-saving mode to display output data and basic PDU configuration
	Position sensors for display rotation and correct PDU representation
	on the website
	Multi-colour LEDs (green/amber/red) to indicate switching states
	and limits per individual output slot
	Power LED to indicate voltage
	Power-saving design, minimal intrinsic power consumption
Material	Aluminium section, black anodised
	Slots: Plastic
Supply includes	Assembly parts
Options	Type 3 overvoltage protection with interchangeable arresters while
	operational, with status monitoring, suitable for integration into PDU enclosure
	Residual current measurement (type B) per infeed/phase/fuse
	Monitoring of the optionally available overvoltage protection
	CMC III CAN bus sensors may be connected for ambient
	monitoring, max. 16 sensors
	Other enclosure colours are available

Measurement functions,	Emergency power supply to PDU web server via PoE, sequential
description	disconnection of the outputs
	Switching function per output slot
	Avoids overload peaks: Sequential activation of the outputs
	following voltage recovery
	Relay states are saved even in the event of a power failure
	Bistable relays: Low current consumption and high switching
	capacity, also suitable for higher starting currents up to max. 300 A
	Grouping: Joint switching of multiple outputs
	Measurement per phase or infeed
	Plus measurement per output slot
	Powerful CPU (ARM Cortex A8)
	Digital input (floating contact)
	Additional alarm output/relay output (changeover contact)
Dimensions	Width: 44 mm
	Depth: 70 mm
	Length: 1,095 mm
No. of sockets and type	16 x C13 / 2 x C19
Sockets	16 x C 13
	2 x C 19
Rated operating voltage	230 V (AC)
Rated current (max.)	32 A
Power consumption	7,4 kW
Infeeds	Qty.: 1
	Phases per infeed: 1~
Length of connection cable	3 m
Type of electrical connection	CEE

Interfaces	Fully redundant Ethernet interface 10/100/1000 Mbit/s (2x RJ45, 1x with PoE)		
	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)
		Number RJ45 ports for sensor units max	2
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 °C50 °C		
Ambient humidity (non- condensing)	1095 %		
Storage temperature range	-20 °C70 °C		
To fit	Enclosure type: VX IT enclosure frame: ≥ 1,200 mm		
	Enclosure type: VX IT 19" mounting angles: ≥ 1,800 mm		
Packs of	1 pc(s).		
Net weight	4.5		
Gross weight	4.5		
Customs tariff number	85369095		

EAN	4028177948099
E-Number Sweden	E8407075
ETIM 9	EC002762
ETIM 8	EC002762
ECLASS 8.0	27142604

#### Approvals

Approvals	TÜV
Explanations	Declaration of conformity

#### Tender text

Rittal PDU managed Model No.: DK 7979.412

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 wicht slot covers available as accessories. This precludes an unintentional overloading of individual phases an 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 managed has extensive measurement and switching 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 parameters can be forwarded to a DCIM software via 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.

Optinally, 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 managed Input voltage range (L/N/PE): 230 VAC, 50-60Hz input current: 32A No. of phases: 1 Marking of phases (3-phase PDU only L1, L2, L3): Rittal Power Pink, black, white Number of slots type IEC 60320/C13 (total): 16 Number of slots type IEC 60320/C13 (per phase/fuse): 16 / 8 Number of slots type IEC 60320/C19 (total): 2 Number of slots type IEC 60320/C19 (per phase/fuse): 2 /1 Number of slots type CEE 7/3 (total): -Number of slots type CEE 7/3

(per phase/fuse): -No. of circuit brakers: 2 Hydraulic-magnetic protective circuit-breaker: 16 A Slots individually switchable: Yes **Connector PDU input:** IEC 60309 / CEE (L+N+PE, 6h) Length of connection cable: 3m Connection cable type: H05-VV No. of wires: 3 Cable cross-section: 4mm<sup>2</sup> PDU housing width: 44mm PDU housing depth: 70mm PDU housing height: 1095mm PDU material: Aluminium, anodised, in RAL 9005 (black)<(>,<)> 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 or slot Switching function: Switching per output slot Values recorded (per phase): Voltage (V), current (A)<(>,<)> frequency (Hz), Active power (kW), avtive energy (kWh) apparent power (kVA), apparent energy (kWAh) 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): AC + DC (RCM type 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 measurement range: 0 - 32 A Current resolution: 0.1 A Measurement accuracy: 1 % Freely settable limit values per slot for (warning/alarm): Voltage, current, power: yes Operating hours meter: Yes Controllerboard:can be rotated and replaced during operation Display: TFT, RGB 128x128 pixels

Network interface: 2x RJ45, per 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 (combined), infrared access sensor<(>,<)> leakage,ariflow,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 EMV: 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 (at 40°C) 100.000 hours Protection category: IP20 (EN 60529) Protection class: 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 Betriebshöhe (max.ü.NN.): 3000m 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 managed Model No.: DK 7979.412