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POWER PLANTS



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INDUSTRY
& MANUFACTURING

RPU

RADIATION PROCESSING UNIT



MAIN ADVANTAGES

- Modular system for controlling VF radiation monitors
- Display designed for non-stop operation
- Remote RDU-12 display option
- RPU functions can be classified according to EN 61226
- A wide range of detectors that can be connected to the unit
- Defense against unauthorized parameter changes
- User-friendly graphical interface
- Basic optical and acoustic alarm signaling as standard, possibility to connect external signaling unit
- Intelligent interface for connection to other systems
- Data can be transmitted to PAMS type safety systems using analog and relay digital outputs
- Data can be transferred from qualified to unqualified systems using a galvanically isolated serial communication interface

PURPOSE

The RPU data collection and processing units are modular devices that provide data collection and management of VF's radiation situation monitors and the transmission of data to superior radiation monitoring systems (also RMS).

There are 3 basic unit types available:

- RPU-04: Base unit without display,
- RPU-12: Enhanced display unit,
- RDU-12: External display unit.

The RPU includes a rack with slots for inserting plug-ins that allow you to build the RPU configuration according to the needs of a particular radiation monitor.

The basic modules are:

- control unit CU-01 providing collection and archiving of measured data,
- DU-01 display unit for communication with the operator
- PSM power modules, providing secure power to the RPU-12 with the ability to bridge short-term outages and two independent power supplies.

Optional modules are:

- DIM detector interface for supplying and collecting data from radiation protection detectors,
- PU processor modules providing connection of selected detectors, calculation and control of process and technological radiation monitors,
- electrometer PU-04 for data acquisition from ionization chamber detectors,
- ICIM digital and / or analog input and / or output modules,
- ICIM management and control system interface to control radiation monitor technology;
- CIM communication modules for data transfer to master systems.

This concept enables data collection and management of VF's comprehensive portfolio of detectors and radiation monitors.

OPTIONAL MODULES

Type	Description
CIM-03	Module of galvanic isolation RS-422 for superior system
CIM-04	Modbus TCP gateway (Ethernet) and Modbus RTU server (RS-422 / RS-485) with optional function
CIM-05	One-way communication module from "C" qualified to unqualified system
PU-04	Electrometer for connection of ionization chamber detectors
PU-06	Processor unit for evaluation of coincidence of 2 DIM-09 (MCA) and detection modules with UART interface, with inputs and outputs for controlling radiation monitors: <ul style="list-style-type: none"> • 3 × AI 4 - 20 mA • 1 × AO 4 - 20 mA • 1 × DI + 1 × DO
DIM-05	RS-485 communication module with radiation detectors (RTU modbus)
DIM-09	MCA 1024 channel module for connection of NaI(Tl), YAP scintillation detectors
DIM-10	Module 8 × pulse counter 2 – 20 V > 1μs
ICIM-01	Interface for data transmission to PAMS security systems: 2 × (1 × AO 4 - 20 mA + 4 × DO)
ICIM-02	Module 8 × DI, 8 × DO
ICIM-03	Module 4 × AO 0 – 20 mA
ICIM-04	4 × AI module with switchable range 0 - 0,1 mA / 0 - 1mA / 0 - 20 mA
PSM-02	RPU-12: 230 V AC redundant power control block
PSM-05	RPU-12: 230 V AC Power Management Block

RPU-12

The RPU-12 is suitable for use in frame-mounted radiation monitors along with air or liquid sample collection and processing technology.



SPECIFICATION

Display	Monochrome 320 × 240 pixels
Max. number of measuring channels	16
Number of modules per rack	max. 10
Data archive (per channel)	
• Type	FIFO
• Instantaneous values	60
• Minute averages	120
• Hourly averages	180
Events archive	1 000
Communication interface (depending on the used modules)	Ethernet RS-485, RS-422
Classification according to EN 61226	category B or C
Power supply	195 ~ 265 V / 47 ~ 63 Hz
Weight	approx. 30 kg
Protection class	IP 42
Operating conditions:	
• Temperature	0 - 55 °C
• Relative humidity	max. 98 % at 35 °C non-condensing

RADIATION PROCESSING UNIT

RPU-04

The RPU-04 is suitable for use in monitors where there is no need to control the sampling technology and where it is not necessary to directly present the measurement results.



SPECIFICATION

Max. number of measuring channels	16
Number of modules per rack	max. 4
Data archive (per channel)	
• Type	FIFO
• Instantaneous values	60
• Minute averages	120
• Hourly averages	180
Events archive	1 000
Communication interface (depending on the used modules)	Ethernet RS-485, RS-422
Classification according to EN 61226	category B or C
Power supply	24 V DC / max. 2 A
Dimensions	330 × 299 × 287 mm
Weight	approx. 8 kg
Protection class	IP 44
Operating conditions:	
• Temperature	0 - 55 °C
• Relative humidity	max. 98 % at 35 °C non-condensing

RDU-12

The external display unit RDU-12 is suitable for connection to RPU-12 and RPU-04 for data presentation or remote control of monitors.



SPECIFICATION

Display	Monochrome 320 × 240 pixels
Max. number of measuring channels	16
Communication interface	RS-422
Classification according to EN 61226	category B or C
Power supply	24 V DC / max. 2A 195 ~ 265 V / 47 ~ 63 Hz
Weight	approx. 45 kg
Protection class	IP 65
Operating conditions:	
• Temperature	0 - 55 °C
• Relative humidity	max. 98 % at 35 °C non-condensing