

## **Module PD**

Power Distribution Unit of the RUBIDIUM RPS System:  
Redundant Power Supply

Supplement to the "Installation & Systems Manual RUBIDIUM SERIES"



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## A1 Revision History

No.	Date	Subject
0.n	January 06, 2005	Preliminary documents, changes without notice.

## A2 Copyright

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## A3 General Remarks

This manual is a supplement to the "Installation & Systems Manual RUBIDIUM SERIES". Please read the below listed chapters of the "Installation & Systems Manual RUBIDIUM SERIES", as these chapters are necessary for the safe and proper use of the Rubidium module "PD".

- A3 Warranty,
- A4 Unpacking/Shipping/Repackaging Information,
- A5 Safety Instructions,
- A6 Certifications & Compliances,
- 1.5 Plug-In a Module,
- 1.6 Remove a Module.

## 1 Module PD

### 1.1 Description

This module distributes the DC power to any external units or to further RUBIDIUM SERIES 1 frames. It is especially used in the RUBIDIUM RPS system. It can be installed at any slot (location) of the frame just as any other module would. The PD module outputs the DC power of a Power Supply module which is plugged in this frame. External units can get its DC power using the terminal blocks, RUBIDIUM SERIES 1 frames can get their DC power using DSUB connector RLC 1 or RLC 2. The RLC pinning of a RUBIDIUM SERIES 1 frame combines DC, RS485 and FAIL signals. The RS485/FAIL connector at the rear of PD separates the RS485 and FAIL signals of the RLC1/RLC2 connectors.

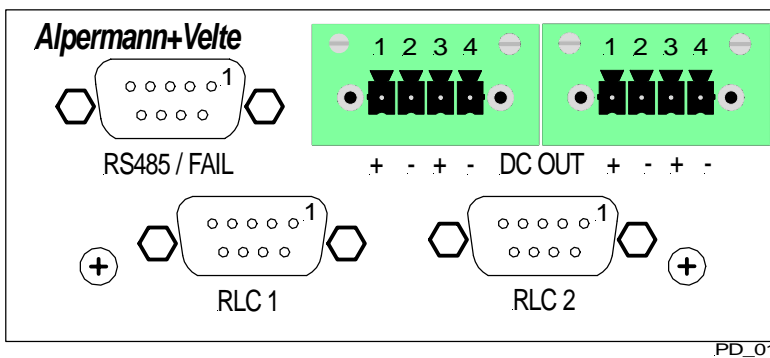


Figure 1: Rear panel of the PD module

- There is no initial set-up or configuration of this module possible, it is not addressable via the PC connector.
- The front panel label PD visibly identifies where this module is located.
- Red LED (OPER) at the front indicates that power is ok.


### 1.2 Signals and Specifications

RLC and RS485/FAIL:

RLC1	RLC2	RS485/FAIL
DSUB9 female	DSUB9F female	DSUB9F female
1: FAIL A -----	1: FAIL A -----	1: FAIL A
2: RS485, TR- -----	2: RS485, TR- -----	2: RS485, TR-
3: RS485, TR+ -----	3: RS485, TR+ -----	3: RS485, TR+
4: FAIL B -----	4: FAIL B -----	4: FAIL B
5, 6, 7: GND -----	5,6,7: GND -----	5: GND
8, 9: V+ -----	8, 9: V+ -----	6...9: not connected

V+ = DC output of the Power Supply module, see technical data of the Power Supply module.

Terminal blocks:

General	Detachable plugs with screw flange
	Plugs may only be actuated in the no-load condition
Connecting type	Spring cage
Stripping length	9 mm
Connection capacity, solid	Cross section: min. 0.14 mm <sup>2</sup> , max. 1.5 mm <sup>2</sup>
Connection capacity, stranded	Cross section: min. 0.14 mm <sup>2</sup> , max. 1.5 mm <sup>2</sup>
Connection capacity, AWG	min. 26, max. 16
Load current	max. 8 A

Others:

Weight	0.2 kg approximately
Dimensions	103 (W) x 44 (H) x 165 (D) mm 4.06 (W) x 1.73 (H) x 6.50 (D) inch
Environmental characteristics, operating	T <sub>Amb</sub> if plugged to RUBIDIUM SERIES 1 frame: +5°C to +40°C Relative humidity: 20 - 80%, non-condensing
Environmental characteristics, non-operating	Temperature: -30°C to +70°C Relative humidity: 5 - 95%, non-condensing

## 1.3 Using the Terminal Blocks

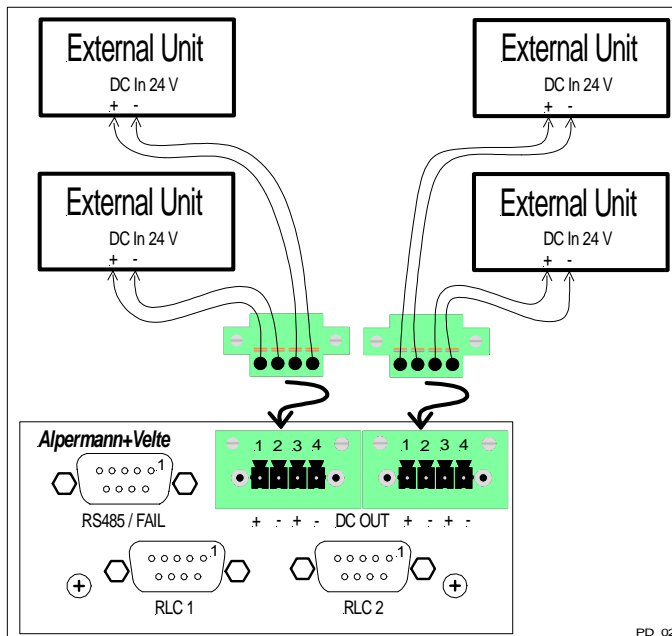
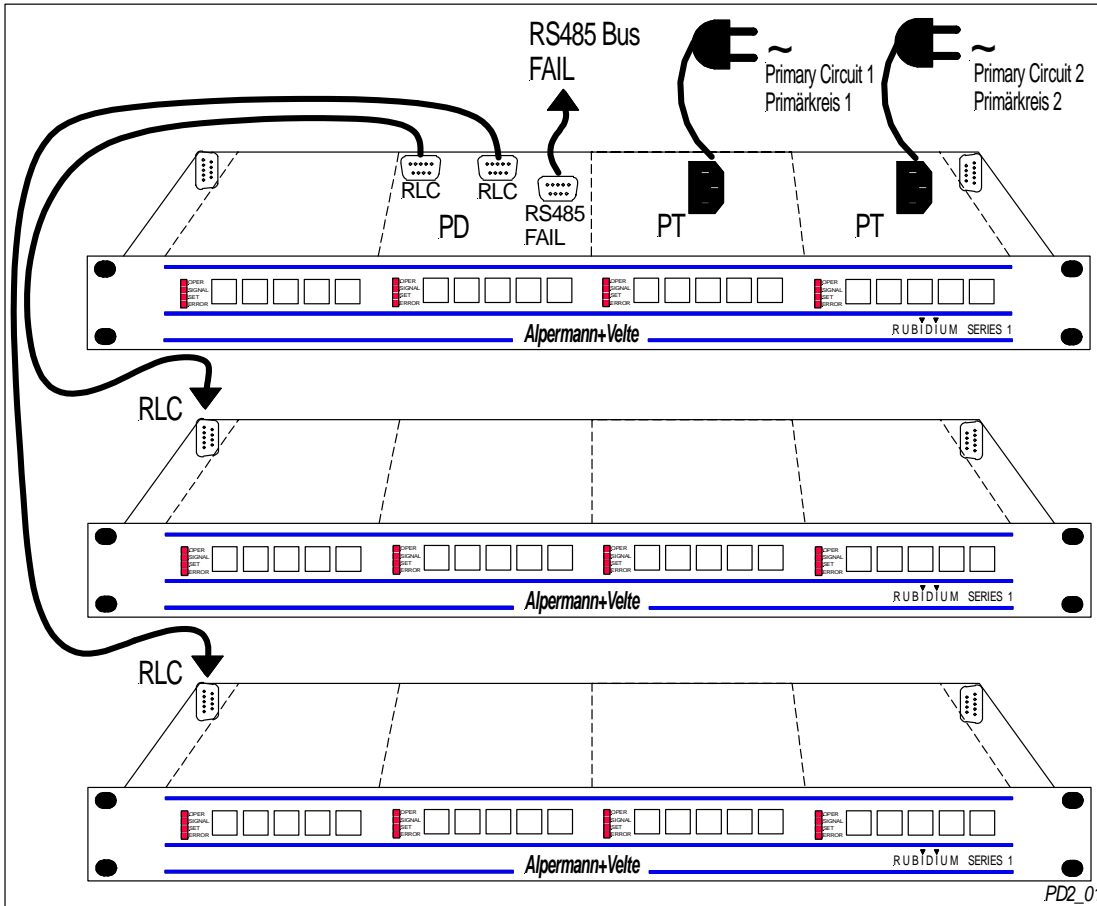


Figure 2: DC power supply of external units using the terminal blocks

1. Pull off the plug from the socket strip.
2. Remove the insulation from the cable ends, and then press the individual cables into the appropriate holes until they are tightly in place (as shown above). Solid cable can be directly pushed into the self clamping holes, multi-stranded wire requires that the orange button on the terminal block be pushed in first (this loosens the self clamping mechanism).
3. Attention: plugs may only be actuated in the no-load condition.
4. Attach the plug to the socket strip and screw it tight.

## 2 RUBIDIUM RPS: Redundant Power Supply

This is an example for a fail-safe operation of a RUBIDIUM SERIES 1 system using two power supply modules "PT" in parallel.



The fail-safe operation can be achieved with respect to the primary power supply circuit as well, if each power supply module "PT" receives the mains input from a different primary circuit.

The total output power (DC outputs at the "PD" module) should not exceed the power rating of the individual "PT" module.

The FAIL signal indicates a failure of a module, i.e. a relay closes the contacts FAIL A and FAIL B (pins 1 and 4 of the DSUB female connector RS485/FAIL). The failure relays of all modules within this system are in parallel through the RLC connection, so a failure will be indicated if one of the modules fails (one of the PT modules or one of the modules of another RUBIDIUM SERIES 1 frame).