16 K-Chief 700

16.24 FS Units

Ref:

DMS no:

Objectives

- Know the various modules used in a Field Station

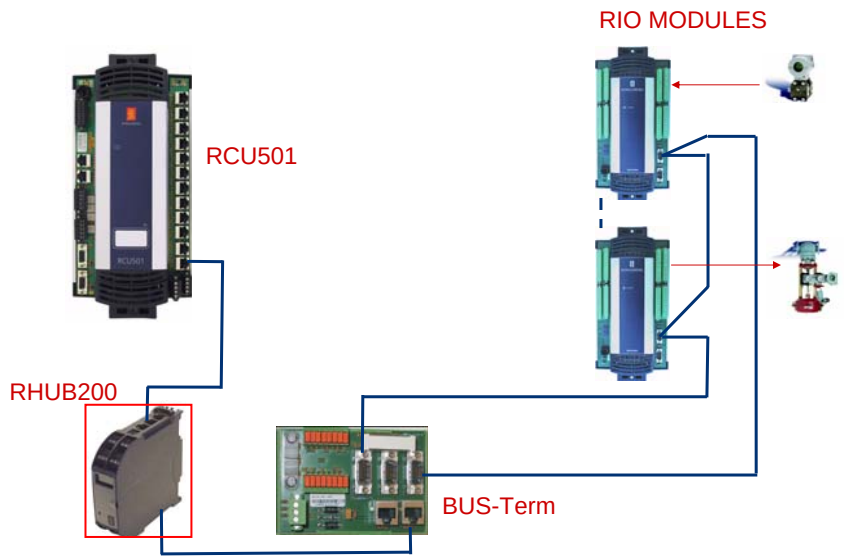
16 K-Chief 700

16.24.06 RHub200-5

Ref:
Document name: **RHub Hardware Module Description**
Document nr: **300994A**

DMS no:

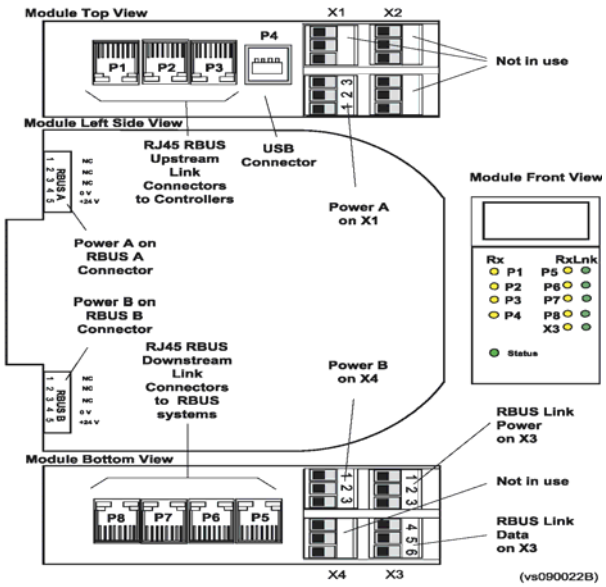
R-BUS



RHUB200-5

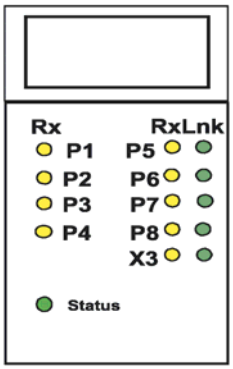
- Combined HUB and repeater
- HUB has three master and five client connections
- 24 Vdc supply voltage via X1, X4 or via rail
- Status indication LEDs for power and data traffic

RHUB200-5 component layout



RHUB200-5

Module Front View



LED name	Colour, state	Function
Status	Green, fixed	Normal operation. The module is OK and it has communication with at least one RCU
	Red, fixed	Serious HW or SW error condition occurred, watchdog activated
	Red, flashing	During boot
RX P1	Yellow, flashing	Receiving data on RBUS Upstream Link interface A (P1)
RX P2		Receiving data on RBUS Upstream Link interface B (P2)
RX P3		Receiving data on RBUS Upstream Link interface C (P3)
RX P4		Receiving data on USB console connection (P4)
RX P5		Receiving data on RBUS Downstream Link interface P5
RX P6		Receiving data on RBUS Downstream Link interface P6
RX P7		Receiving data on RBUS Downstream Link interface P7
RX P8		Receiving data on RBUS Downstream Link interface P8
RX X3		Receiving data on RBUS Downstream Link interface X3
LNK P5	Green, fixed	RBUS Downstream Link interface P5 is powered
LNK P6		RBUS Downstream Link interface P6 is powered
LNK P7		RBUS Downstream Link interface P7 is powered
LNK P8		RBUS Downstream Link interface P8 is powered
LNK X3		RBUS Downstream Link interface X3 is powered

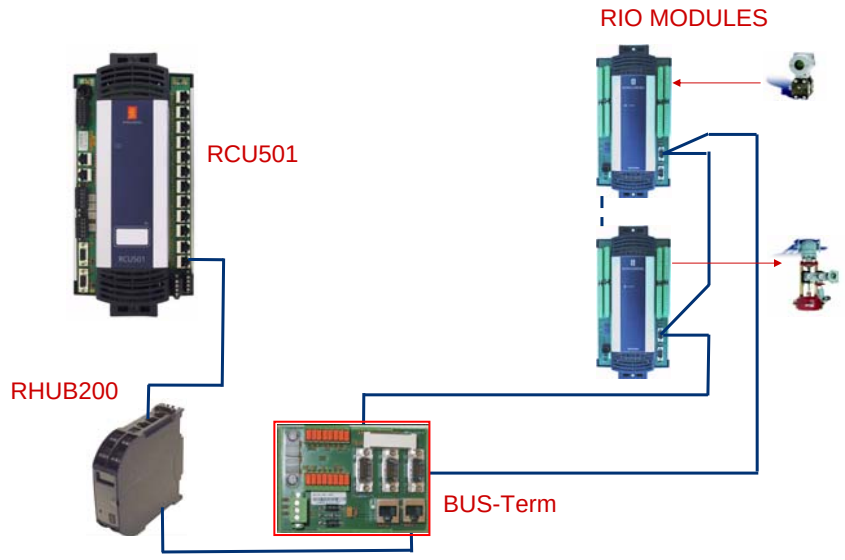
16 K-Chief 700

16.24.07 BUS Term

Ref:
Document name: **BUS-Term Hardware Module Description**
Document nr: **311167B**

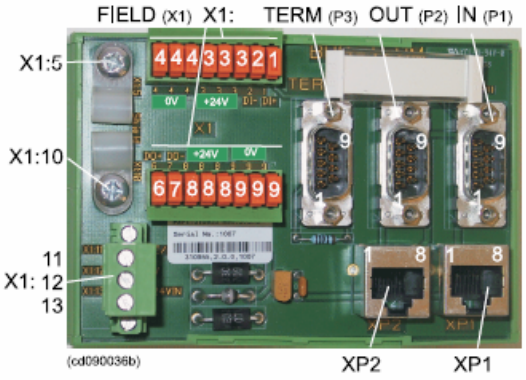
DMS no:

R-BUS



RBus Term (termination card for Rbus)

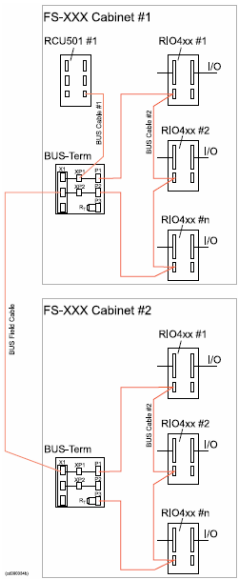
- X1:1-5 from other cabinet
- X1:6-10 (or XP2) to other cabinet if P2 is used
- X1:11-13 Power



- XP1: Typically from RBUS-HUB
- Rbus from P1 → RIOs → P3

RBus Term

- P2 and XP2 is used to extend the RBus to another location
- P3 is used to give the RBus a proper end termination



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16.24.03 Isolator

Ref:

Document name: **Stahl Fieldbus Isolating Repeater, Type 9185 Hardware Module Description**

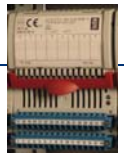
Document nr: 177758A

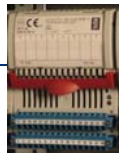
DMS no: 1088773A

RCU 501 connectors P14 and P15: Profibus

Isolator

CPM





Remote IS units

Stahl I.S.1 cabinet

Stahl Fieldbus Isolating Repeater 9185

Power input: 18-31,2 V

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16.24.05 Network Components

Ref:

Document name:	**Telesafe Mini Patch Boxes Hardware Module Description**
Document nr:	**177936A**
Document name:	**Moxa EtherDevicet Switch, EDS-308/305 Hardware Module Description**
Document nr:	**178001D**

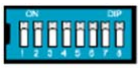
DMS no: 1088777A

Patch Box

- 4, 8 or 12 ports
- Junction box with no power

Switch EDS-305/308

- 4 - 12 RJ45 ports
- 0 - 2 fiber ports
- 12 -48 VDC input
- Redundant power



On:

Enables the corresponding PORT Alarm.
Fault LED will light up if the port's link fails.

Dipswitches located at the top of the module (Not used in KM systems)

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16.24.04 Power Supply

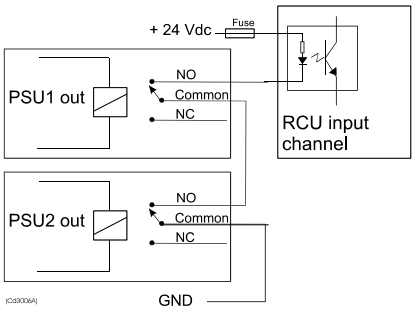
Ref:

Document name:	***Phoenix Quint-Power Supply, 100-240AC/24DC/40 HMD***
Document nr:	**329578/A**
Document name:	**Datasheet Flatpack 2**
Document no:	
Document name:	**Datasheet Smartpack**
Document no:	
DMS no:	

Power Quint 100-240AC/24DC/40

Status LED: Green, Power OK

85-264 Vac input
24 Vdc output



Flatpack 2 and Smartpack

- Typically used in F&G and ESD Cabinets
- Smartpack is the control and monitoring unit
- Flatpack 2 is the 24VDC Power Supply
- Mounted in a 19'' Power Rack that are mounted at the top inside the cabinet

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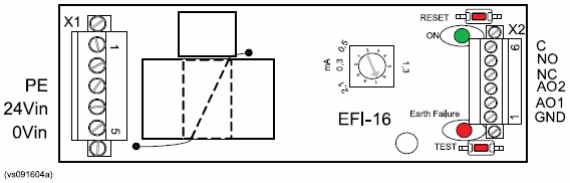
16.24.xx EFI-16

Ref:
Document name: **EFI-16 Hardware Module Description**
Document nr: **324876/A**
Document name: **EFI-16 CDD**
Document nr: **321497/B**

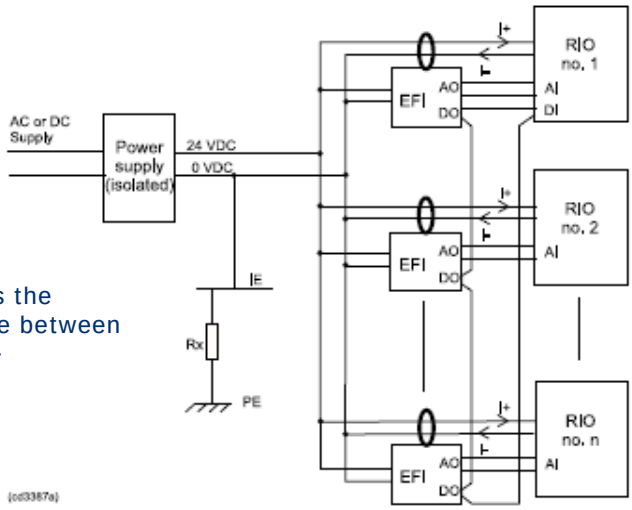
DMS no: xxxxxA

Earth Fault Indicator EFI-16

- Leakage-current sensor
- Connected to a RIO or a similar module

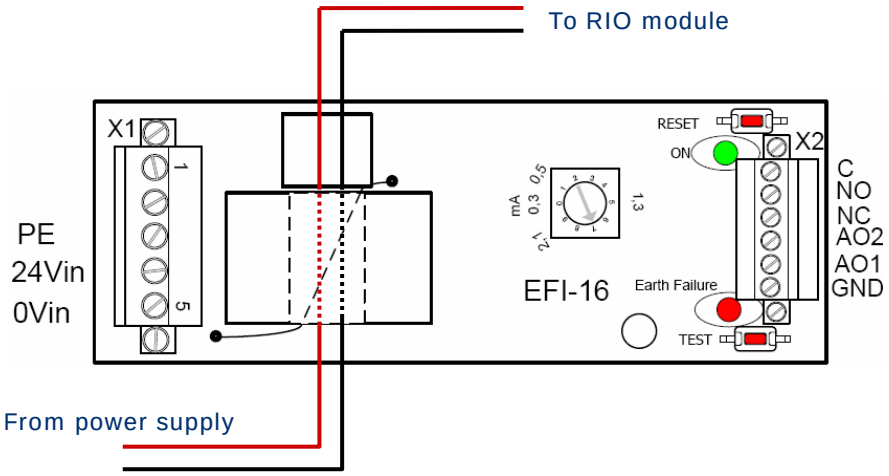


Typical installation

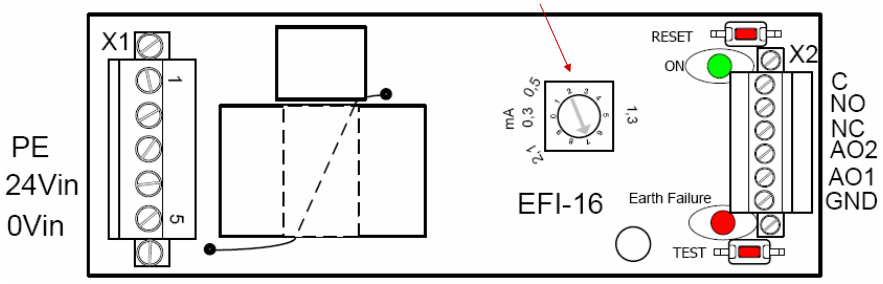


Measures the difference between I+ and I-

Connections



Indications and settings

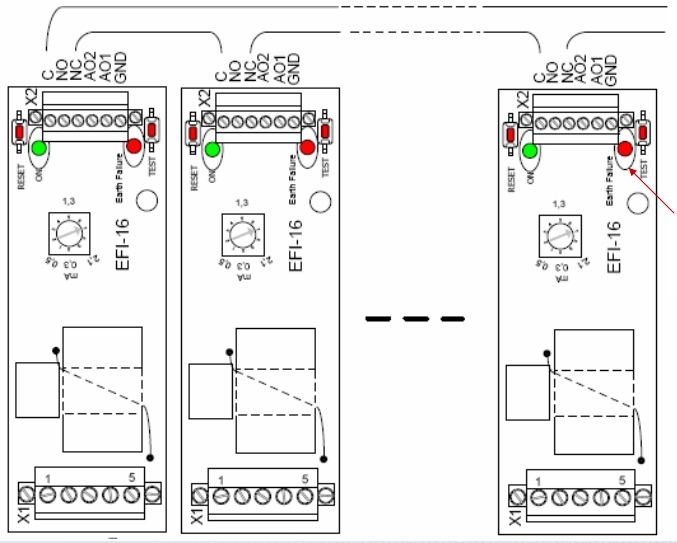


TEST button pressed >
- Earth Failure LED lit
- Alarm detected

DO Fault Trigger Level

Position	Trigger level at current difference [mA]
0	0.3
1	0.5
2	0.7
3	0.9
4	1.1
5	1.3
6	1.5
7	1.7
8	1.9
9	2.1

Serial connection, DI



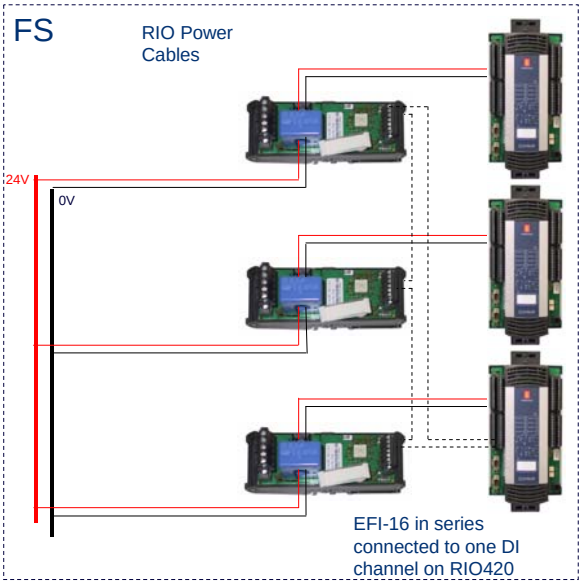
To monitoring DI

Earth Failure LED shows RIO with earth leakage

Example

FS

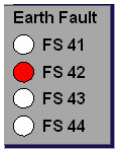
RIO Power Cables



EFI-16 in series connected to one DI channel on RIO420

OS

Earth Faults will be alarmed on OS



16 K-Chief 700
16.xx.xx RMC-ST

Ref:

Document name: RMC-ST Hardware Module Description

Document nr: 325472B

DMS no: xxxxxxxxx

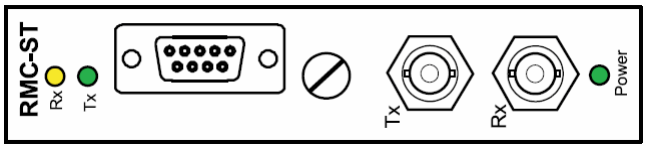
Overview

- RMC-ST is a media converter module that extend and galvanic isolate the Kongsberg RBUS or SPBUS using fibre optics.
  - Used in combination with RMC-TERM
  - Fibre length up to 1 km
  - Up to 3 fibre links can be inserted in series in one RBUS or SPBUS
  - Easy snap on mounting to DIN rail
  - Ex Zone 2 approved

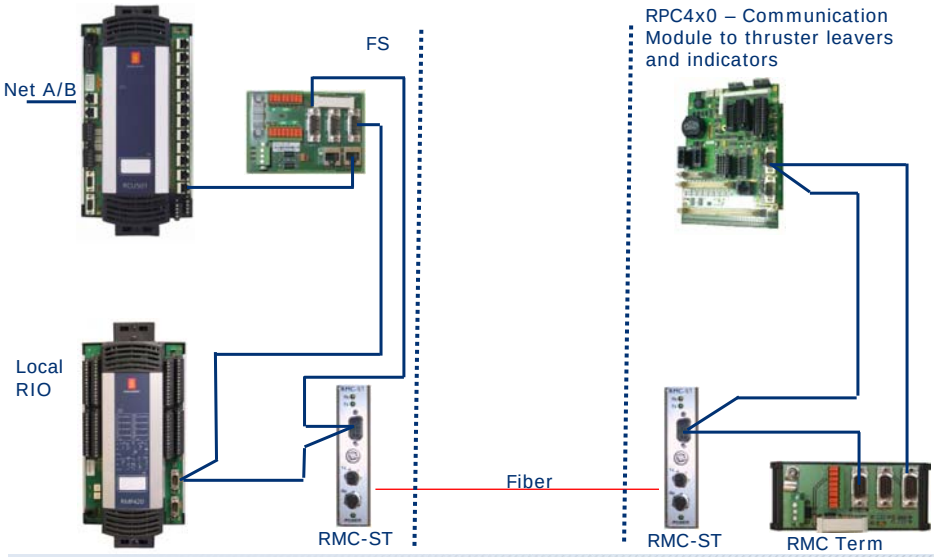
LED indicators

- There are three LED indicators on the front of the module

Signal name	Colour	Function
Power ON	Lit green	The module is powered via DSUB connector from RBUS' 24 VDC
Rx	Flashing yellow	RMC-ST is receiving data from the DSUB connector link.
Tx	Flashing green	RMC-ST is transmitting data to the DSUB connector link.



Example of RMC-ST used in K-Thrust Communication Link



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16.xx.xx RMC-Term

Ref:

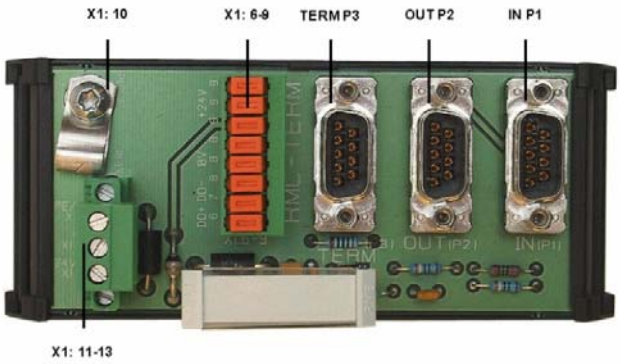
Document name: RMC-Term Hardware Module Description

Document nr: 346017A

DMS no: xxxxxxxxx

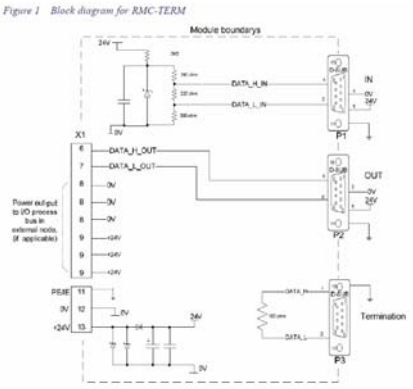
Overview

- RMC-Term is designed to terminate the IO bus on the remote side of the the RMC-ST module.
  - Used in combination with RMC-ST
  - May be utilized both in SPBUS and RBUS topologies

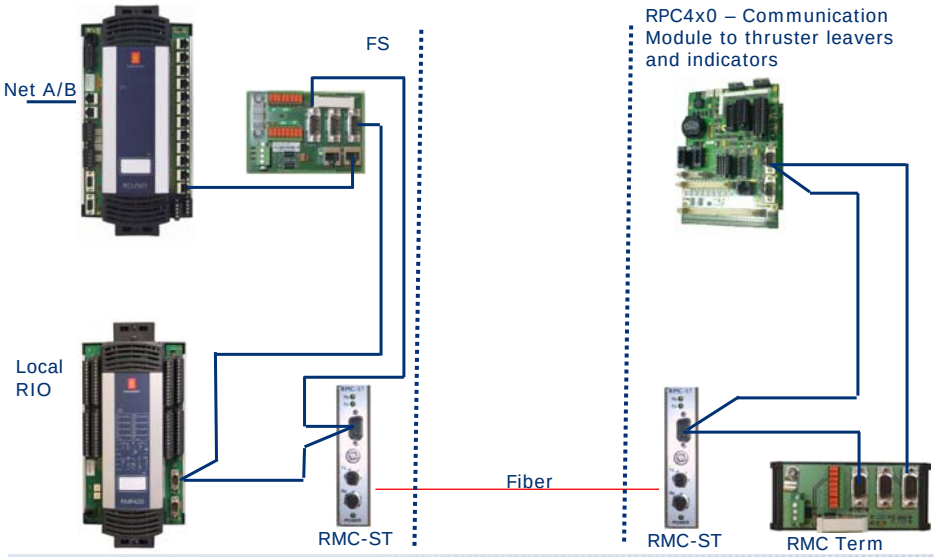


Function

- The prefabricated internal SPBUS/RBUS cables have approx. 100 ohm impedance, therfore the RMC-Term impedance termination resistor on P3 has the identical value.



Example of RMC-Term used in K-Thrust Communication Link



Exercises

- RHUB200-5
- RBUS-Term