

Features

Mounting kits

- Mounting kits for space-saving mounting in racks and cubicles and on walls
- IP54 protected mounting capability in cubicles

Communication accessories

- Communication accessories for adaption of common electrical interfacing techniques

Testswitch module

- Fail-safe testing of terminals, using test switch RXP 24
- Time saving while
 - all connections for test are made from the front
 - easy to move between terminals of the same type

Locking switch

- Possibility to lock settings with key switch

Connectors

- Flexible connection of signals and voltages
 - Screw compression type or spring compression type

Software tools

- Software tools to
 - configure the terminal
 - set parameters
 - monitor the terminal and the system
 - visualize and evaluate disturbance recordings
- Supervision and control via high voltage terminals (HV/Control package)
- Provides on request information from REx 5xx terminals
- Collection of disturbances from high voltage terminals
- Consists of standard library functions for easy application engineering of a station HMI

Mounting kits

19" rack mounting

Use the 19" rack mounting kit to mount the terminal in a standard rack. Combine the rack mounting kit with the side-by-side mounting kit to mount terminals or terminal and test switch in the same rack position.

The 19" rack mounting kit is available in three designs, suitable for 1/2, 3/4 or full width terminals and consists of two rack flanges (1) with appropriate mounting details (2) for fastening to the terminal.

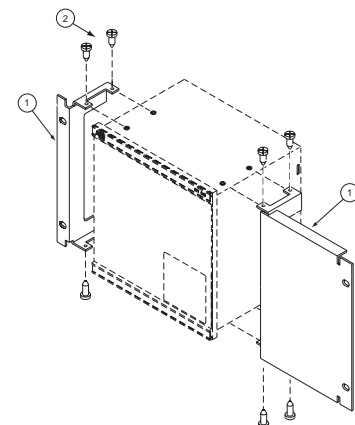


Figure 1: The rack mounting kit

Flush mounting

Use the flush- or semi-flush mount kit for installation in a panel cut out.

The flush mounting kits are available in three designs, suitable for 1/2, 3/4 or full width terminals and consists of four fasteners (4) with appropriate mounting details and a sealing strip (1) for fastening to the terminal (5).

The semiflush mounting kit adds a distance frame (2) and an additional sealing strip (3). To receive IP54 class protection, an additional sealing must be ordered with the terminal. This sealing is factory mounted.

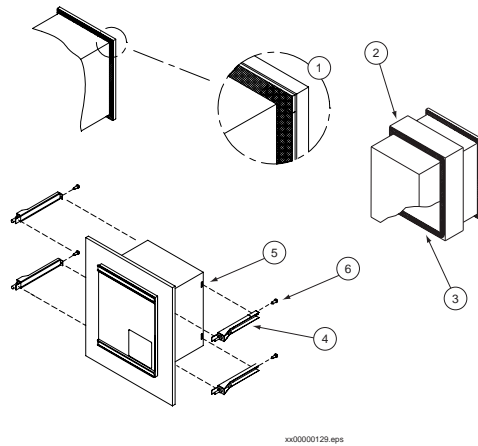


Figure 2: The flush mounting kit

Wall mounting

Use the wall mounting kit to projection mount the terminal on a wall.

The wall mounting kit consists of a mounting bar pair (1) and a terminal bracket pair (2). Screws for fastening of the terminal are included, but not wall fasteners.

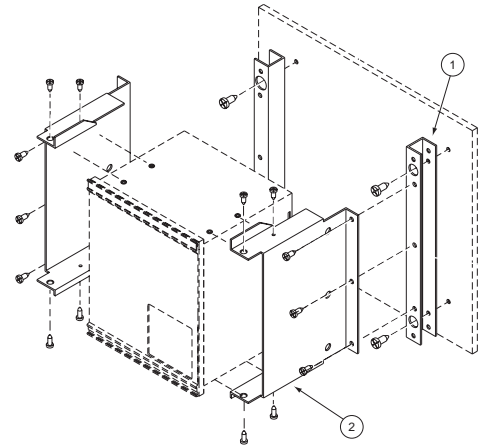


Figure 3: The wall mounting kit

Side-by-side mounting

Use the side-by-side mounting kit to mount two terminals or a terminal and its corresponding test switch next to each other.

The side-by-side mounting kit consists of two mounting plates (1)(3) and eight fasteners (2)(4). The side-by-side mounted units is mounted in a rack or cubicle using the appropriate kit, in this example the rack mounting kit (5).

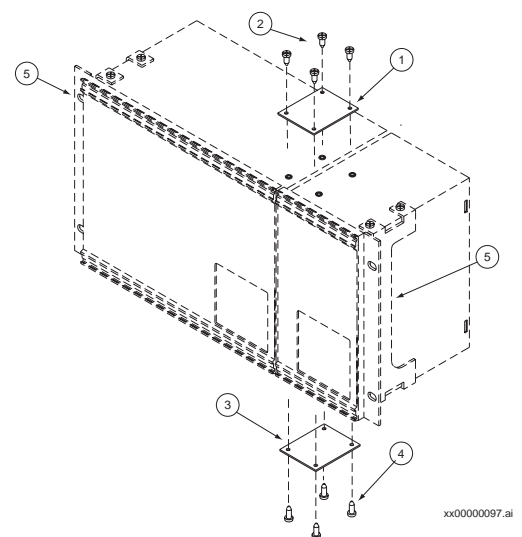
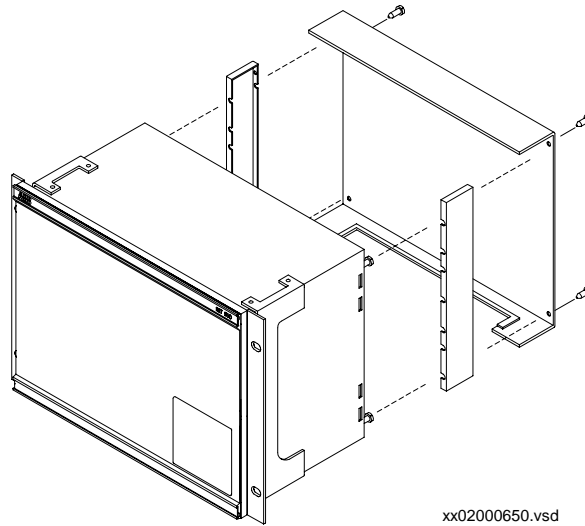


Figure 4: The side-by-side mounting kit

Protection cover for rear area

Protection cover for rear area consisting of a steel sheet with a slot for cable entrance at the bottom part.



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Figure 5: Protection cover for rear area

Communication accessories

Converters

When you have the...	and need to communicate with equipment using...	then select the...
Short range optical fiber modem	V.35 or V.36	V.35/V.36 opto-electrical interface converter
Short range optical fiber modem	X.21 or G.703	X.21/G.703 opto-electrical interface converter
V.35/V.36 co- or contradirectional galvanic interface	G.703	V.35/V.36/G.703 interface converter

Table 1: The V.35/V.36 to G.703 interface converter

Data	Value
Transfer rates	Synchronous; 64-2048 kbit/s, co- or contradirectional
Timing	Internal; controlled by the converter
	External; controlled by DTE signalling

Data		Value
Power supply	AC	110-230 VAC
		50/60 Hz
		+/-20%
	DC	48 VDC
		+/-20%
Connectors	G.703	Self locking push-in connector
	V.36	25 pin D-sub male
	AC supply voltage	Standard mains connector
	DC supply voltage	XLR male receptable

Table 2: The V.35/V.36 opto-electrical interface converter

Data		Value
Transfer rates		64 kbit/s
Timing		Internal; controlled by the converter
		External; controlled by DTE signalling
		Loop; derived from optical signal
Fiber type	Multimode	50/125 µm
		62.6/125 µm
Optical budget		15 db at 850 nm
Power supply	AC	110-230 VAC
		50/60 Hz
		+/-20%
	DC	43-250 VDC
Connectors	V.35	34 pin male D-sub
	V.36	37 pin male D-sub
	RS-232C	25 pin male D-sub
	Optical	ST type
	AC supply voltage	Standard mains connector
	DC supply voltage	XLR male receptable

Table 3: The X.21/G.703 opto-electrical interface converter

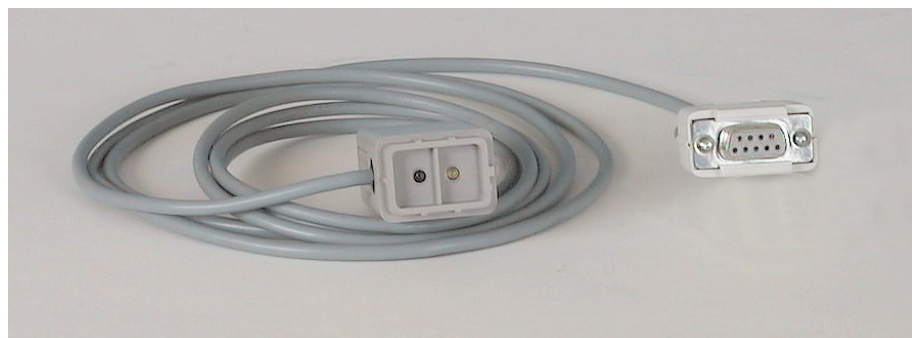
Data		Value
Transfer rates		Synchronous; 64 kbit/s, co- or contradirectional

Data		Value
Timing		Internal; controlled by the converter
		External; controlled by DTE signalling
		Loop; derived from optical signal
Fiber type	Multimode	50/125 μm
		62.6/125 μm
Optical budget		15 dB at 850 nm
Power supply	AC	110-230 VAC 50/60 Hz +/-20%
	DC	43-250 VDC
Connectors	X.21	15 pin male D-sub
	RS-530	25 pin male D-sub
	G.703	8 pin modular RJ-45 jack
		10 pin divisible screw connector
	Optical	ST type
	AC supply voltage	Standard mains connector
DC supply voltage	XLR male receptable	

Front communication

The special front connection cable is used to connect a PC COM-port to to the optical contact on the left side of the local HMI.

The cable includes an optical contact, an opto/electrical converter and an electrical cable with a standard 9-pole D-sub contact. This ensures a disturbance immune and safe communication with the terminal.



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Figure 6: Front connection cable

Table 4: Front connection cable

Function	Value
Communication speed for the cable	0.3-115 Kbaud

Test switch module

General

The test switch module consists of a RHGS case with a test switch, RTXP 24, and a two-seat Combiflex terminal base mounted. An optional DC-switch occupies one seat if selected.

All connections to the test switch module are made with Combiflex socket leads. Test con-

tacts 1-24 of the test switch have 20 A terminals. The signal contact of the test switch and the Combiflex terminal base have 10 A terminals.

For more details about the Combitec system and Combiflex system see related documents.

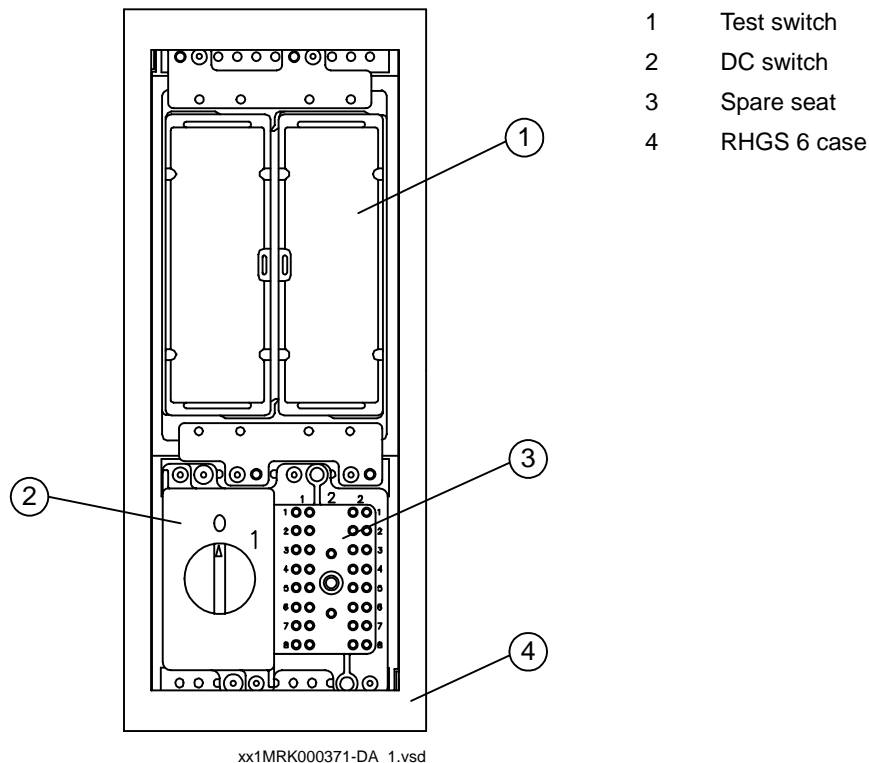


Figure 7: Example of a test switch module

Test switch

The test switch, RTXP 24, is used to make it possible to test a relay in a failsafe way. Inserting a test-plug handle into the test switch automatically makes all preparations for test in the proper sequence. Blocked trip circuits, shortcircuited CT's, opened voltage circuits makes the relay terminals available for secondary injection test.

DC-switch

The DC-switch is used to switch the DC-supply of the terminal ON/OFF.

The DC-switch is of Combiflex type and needs a separate case with a Combiflex terminal base to be mounted. One possibility is to mount it in the same case as the test switch.

Locking switch for settings

To prevent unwanted changes of settings, a key switch is used. The switch locks the settings via a binary input.

The key switch is of Combiflex type. To install it, a separate case including a Combiflex terminal base is needed. One possibility is to install the key switch in the same case as the test switch.

Connectors

The connectors are used for voltage signals and binary in- and output signals.

Use the ferrules to connect two wires to the same terminal point of a connector. Note that 1.5 mm² is the maximum dimension allowed

on these wires. A special crimping tool from Phoenix is needed to apply the ferrule to the wires.

Use the bridge connector to jumper terminal points in a connector.

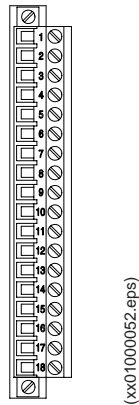
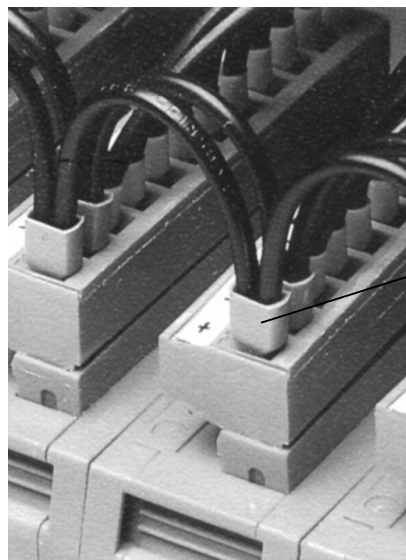
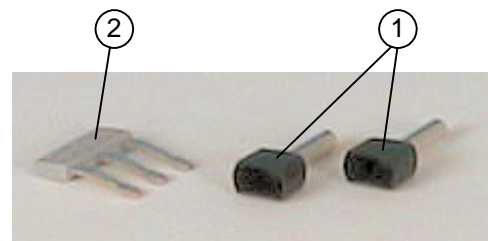


Figure 8: Voltage connector



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Figure 9: Connected cables with ferrules



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- 1 Ferrules
- 2 Bridge connector

Configuration and monitoring tools

CAP 540

Use CAP 540 through all stages of a project, from engineering, configuring, programming and parameter setting to testing, commissioning, documentation and maintenance. You can use it to adjust the default configuration, or to make a new configuration.

SMS 510

Use the SMS 510 Substation Monitoring as an overall substation monitoring system that gives essential information about your electrical transmission and distribution process. This information consists of all measured and calculated data, such as indications, settings

and diagnostic information available from ABB's protection and control terminals.

SMS 510 can be used either locally at the station or remotely via a modem. Using a public telephone network or a standard TCP/IP network for remote use, SMS 510 provides you

the most cost-efficient way to realise substation monitoring.

The SMS 510 Substation Monitoring System is the successor of the proven SMS 010 substation monitoring packages.

MicroScada tools

The LIB 520 package provides the following main functions:

- User interface for the interaction with the control system and the controlled process
- Automatic supervision and control
- Alarm and event handling
- Data acquisition, calculating and reporting
- Parameter setting
- Disturbance data upload

The high voltage software modules are a complement to the standard MicroSCADA software and provides an easy-to-build and easy-to-use HMI for supervision, control, disturbance collection and SMS functionality in MicroSCADA.

The software is made for high voltage terminals, and are providing the same user interface as the LIB 500/510 standard library functions.

See related documents for more details about the tool, PC requirements etc.

Ordering

Mounting accessories

Name	For case size	Quantity	Article number
Protection cover for rear area: consisting of a steel sheet with a slot for cable entrance at the bottom part, fixing screws and assembly instruction.	6U x 1/1 6U x 3/4 6U x 1/2	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1MRK 000 020-AA 1MRK 000 020-AB 1MRK 000 020-AC
Mounting kit for 19" installation: consisting of two mounting angles, fixing screws and assembly instruction.	6U x 1/1 6U x 3/4 6U x 1/2	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1MRK 000 020-CA 1MRK 000 020-BA 1MRK 000 020-BB
Mounting kit for wall-mounting: consisting of 2 mounting angles, 2 mounting bars, fixing screws and assembly instruction.	All sizes 6U	<input type="checkbox"/>	1MRK 000 020-DA
Mounting kit for flush installation: consisting of 4 fastener, sealing strip, fixing screws and assembly instruction.	All sizes	<input type="checkbox"/>	1MRK 000 020-Y
Mounting kit for semi-flush installation: consisting of a distance frame, a sealing strip and the same parts as the flush installation kit.	6U x 1/1 6U x 3/4 6U x 1/2	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1MRK 000 020-AK 1MRK 000 020-AL 1MRK 000 020-AM
Mounting kit for side-by-side installation: consisting of 2 fixing plates, fixing screws and assembly instructions.	All sizes	<input type="checkbox"/>	1MRK 000 020-Z

Note: All kits are complete including screws.

Converters

21-15X: Optical/electrical converter for short range fibre optical module V.36 (supply 48-110 VDC) (21-15X)	<input type="checkbox"/>	1MRK 001 295-CA
21-16X: Optical/electrical converter for short range fibre optical module X.21/G 703 (supply 48-110 VDC) (21-16X)	<input type="checkbox"/>	1MRK 001 295-DA

Front communication

Front connection cable between LCD-HMI and PC for terminal handling (Opto/9-pole D-sub) (<i>Front connection cable</i>)	Quantity: <input type="checkbox"/>	1MKC 950 001-2
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Test switch module

Test switch module RTXP 24 in RHGS case	<input type="checkbox"/>	1MRK 000 371-CA
<i>Rule: If the Test switch module is selected, internal or external earthing must be selected</i>		
With internal earthing	<input type="checkbox"/>	RK 926 215-BB
With external earthing	<input type="checkbox"/>	RK 926 215-BC
On/off switch for the DC-supply	<input type="checkbox"/>	RK 795 017-AA

Test switch

Test switch RTXP 24 without RHGS case		
With internal earthing	<input type="checkbox"/>	RK 926 315-BB
With external earthing	<input type="checkbox"/>	RK 926 315-BC
Mounting kit for RTXP 24 in 4U rack assembly	<input type="checkbox"/>	1MRK 000 020-BT

Note: Leads with 20 A Combiflex socket on one end and insulation stripped on the other end must be used to connect the test switch to the terminal. To connect the signal contact of the test switch and the DC switch, leads with 10 A Combiflex socket on one end must be used.

Locking switch for settings

Key-switch (for locked settings)	Quantity: <input type="checkbox"/>	1MRK 000 611-A
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Note: To connect the locking switch, leads with 10 A Combiflex socket on one end must be used.

Connectors

Female connector	18 terminals of screw compression type, conductor area max 1 x 2.5 mm ² or 2 x 1.0 mm ²	Quantity: <input type="text"/>	1MKC 860 001-2
Female connector	18 terminals of spring compression type, conductor area max 1 x 1.5 mm ² or 2 x 0.5 mm ²	Quantity: <input type="text"/>	1MKC 860 005-2
Ferrule	For 2 x 1.5 mm ² conductors in screw compression terminal	Quantity: <input type="text"/>	1MKC 840 003-4
Bridge connector	For 2 terminals in the current circuit	Quantity: <input type="text"/>	1MKC 840 002-1
Bridge connector	For 3 terminals	Quantity: <input type="text"/>	1MKC 840 002-2
Bridge connector	For 4 terminals	Quantity: <input type="text"/>	1MKC 840 002-3

Configuration and monitoring tools

CAP 540*1.2, Configuration, programming and setting tool package See related documents

Substation monitoring system

SMS 510 Program for SMS applications See related documents

MicroScada tools

LIB 520 See related documents

Related documents

Technical overview brochure	
Platform	1MRK 580 063-BEN
Combiflex	1MRK 513 003-BEN
Combitest	1MRK 512 001-BEN
CAP 540 1.2	1MRK 511 112-BEN
SMS 510	1MRS751973-MBG
LIB 520	1MRK 511 057-BEN

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