

INSTALLATION, OPERATIONS AND MAINTENANCE MANUAL

SmartRack™ MV

Remote racking device



Table of contents

04	Warranty and general information
05	Safety notices
06	Introduction
07 – 08	Receiving and storage
09 – 10	General description
11	Operation of device
16	Maintenance
17	Compatible devices
18	Specifications
19 – 20	Installation of SmartRack™ MV adapter plate
21	PLC controller error codes
22	Renewal parts reference

Warranty and general information

Read the following hazard classifications carefully, and fully inspect the equipment for any identifiable hazards prior to installation, operation, or maintenance. The following classifications listed below will appear throughout this document or on labels located on the equipment. These are standard symbols defined by ANSI Z535.4-2011 which were established for recognition of potential hazards which pose risk to life and property. The classification is based on the probability and severity of injury if the hazard is not avoided. Please follow instructions, warnings, labels, and codes for proper installation, operation, and maintenance of equipment and devices. Only Qualified Persons, as defined by NFPA 70, should provide installation, operation, and maintenance on this equipment and devices.



This is safety alert symbol. It is used to alert you to potential physical injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



Danger: Indicates a hazardous situation which, if not avoided, will result in death or serious injury.



Warning: Indicates a hazardous situation that, if not avoided, could result in death or serious injury.



Caution: Indicates that if the hazard is not avoided could result in minor or moderate injury.



Notice: Is used to notify of practices not related to personal injury.

Trademarks

Emax 2®

Emax 2 Ekip®

ReliaGear® LV SG

All third-party trademarks are the property of their respective owners.

Warranty

This document is based on information available at the time of publication. While efforts have been made to ensure accuracy, the information contained herein does not cover all details or variations in hardware and software, nor does it provide for every possible contingency in connection with installation, operation, and maintenance. Features may be described herein that are not present in all hardware and software systems.

ABB assumes no obligation of notice to holders of this document with respect to changes subsequently made. ABB makes no representation or warranty, expressed, implied, or statutory, with respect to, and assumes no responsibility for the accuracy, completeness, sufficiency, or usefulness of the information contained herein.

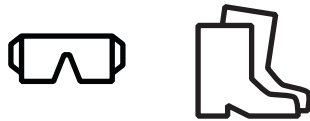
No warranties of merchantability or fitness for purpose shall apply. Contact your local sales office if further information is required concerning any aspect of ReliaGear LV SG switchgear and Emax 2 breaker operation or maintenance.

Safety notices

01 Personal Protective Equipment

General

Always follow your company's safety guidelines. Wear appropriate Personal Protective Equipment (PPE).



01

This product is intended to be operated and maintained by qualified persons thoroughly trained and knowledgeable of the hazards involved. This publication is written only for such qualified persons and is not intended to be a substitute for adequate training and experience in the safety procedures for this device.

Detailed descriptions of standard repair procedures, safety principles, and service operations are not fully elaborated in this instruction book. It is important to note that this document contains some warnings and cautions against some specific service methods that could cause personal injury to service personnel, or could damage equipment or render it unsafe. These warnings do not cover every conceivable method in which service (whether or not recommended by ABB) may be performed.

Secondly, ABB cannot predict or investigate all potential hazards resulting from all conceivable service methods. Anyone using service procedures or tools, whether or not recommended by ABB, must satisfy himself thoroughly that neither personal safety nor equipment safety will be jeopardized by the service method or tools selected.

All information contained in this manual is based on the latest product information available at the time of printing. ABB reserves the right to make changes at any time without notice.

Device specific



Warning: SmartRack™ MV remote racking device incorporates components, such as the DC power supplies, which could contain stored energy. Under no circumstances should the protective covers on any component of the device be removed.

Never tamper with, modify, or otherwise alter the mechanical components, electronics, or control software of the racking device. Failure to comply could cause the device to fail resulting in equipment damage or personal injury.

Never disconnect any of the cables from connected components while the device is powered. Always turn off the device and disconnect it from its power source before attempting to unplug the data cables.

Do not open a cabinet door with SmartRack™ MV attached. This could damage the racking device coupling or circuit breaker truck. Always properly remove the Motor Box using the rotary latch before attempting to open the cabinet door.

SmartRack™ MV remote racking device is only intended for use with switchgear breakers, auxiliary devices such as PT or CPT drawout truck and Model 2 MCC contactors listed in the Compatible Devices section of this instruction manual. ABB makes no claims to compatibility regarding unlisted devices.

Introduction

—
02
SmartRack™ MV

Overview

SmartRack™ MV remote racking device is intended to assist technicians with the process of racking medium voltage circuit breakers and associated equipment. The main function of the device is to perform the racking operation with minimal manual interaction. This allows the operator of the device to maintain a significant distance between themselves and the circuit breaker while racking is performed as compared to the traditional hand-crank method of racking. circuit breaker while racking is performed as compared to the traditional hand-crank method of racking.

Additional product support

For additional product support and details not covered in the content of this instruction manual, please contact your local sales representative.



—
02

The SmartRack™ MV remote racking device is able to perform this complex task through the use of a programmable logic controller and servomotor. Throughout operation, the controller and motor are in constant communication allowing the device to accurately position a circuit breaker or other device in the switchgear cell. The racking device incorporates an actuator to operate the interlock lever which eliminates need for an additional unit to perform this task or for additional manual interaction.

Receiving and storage

- 03 On switch and indicator lights
- 04 Start-up screen

Receiving inspection

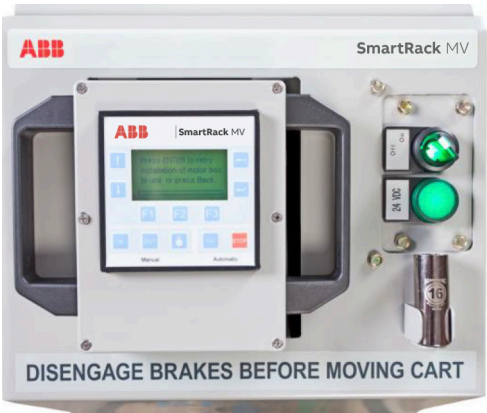
Upon receiving SmartRack™ MV, carefully unpack the device from its box and check for the following components which are fully furnished in the assembled unit:

Table 1: Receiving inspection

Component	Quantity
Cart	1
Motor Box	1
Control Box	1
25 or 50ft. Connection Cable	2
Power Cable	1
Fuse	2
Socket Extension	1

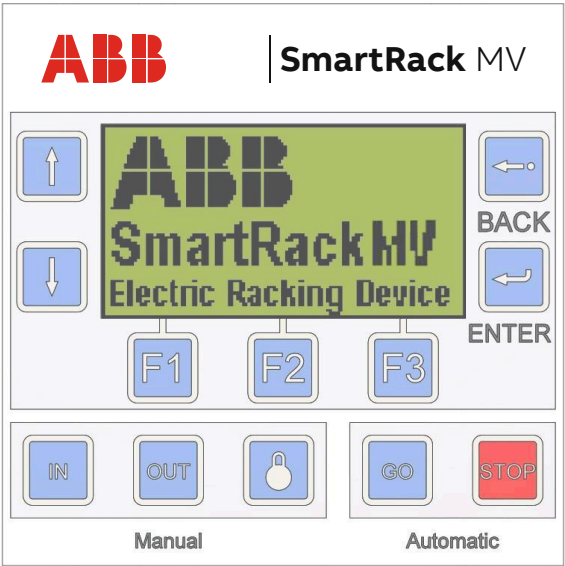
Should any parts be missing, please contact your ABB sales representative.

Next, plug the device into an appropriate source of power. See the Electrical Specifications section for power requirements. With the device plugged in, locate the On/Off switch on the top of the cart and turn it to the On position. Both the green indicator lights should illuminate. The lights show incoming power to the device and the status of the main power supply.



03

Locate the Remote Control Box and make sure the screen of the controller is properly displaying the start-up screen as shown in Figure 5 below. If the screen does not appear or does not look like Figure 5, check all cable connections. If the start-up screen does not appear after checking the connections, do not use SmartRack™ MV and contact ABB product support.



04

Handling the device

Plastic handles have been provided at multiple places on the device to facilitate handling. These should be used whenever possible to avoid damage.

The cart includes a swinging push/pull bar with plastic grip.

- 05
Cart handle
- 06
Control box handles
- 07
Motor box handles
- 08
Properly stored
SmartRack™ MV



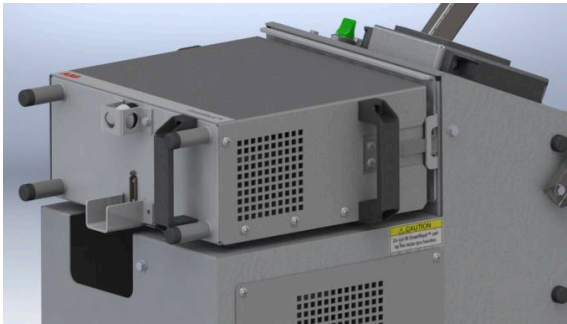
— 05

The Control Box incorporates two plastic handles for lifting and for use while operating the device. The control housing should never be picked up or held by the cord.



— 06

The Motor Box has three plastic handles that are located on either side and one in the rear to assist the operator in the installation and removal of the motor box to the mounting adapter plate. The Motor Box should never be lifted by the protruding hex socket or by the cord.



— 07

Storing the device

SmartRack™ MV must be stored indoors in a cool, dry, dust-free place away from sunlight. During periods of non-use SmartRack™ MV should be covered to protect from accumulation of dust and keep sunlight off the controller screen. The device should be stored in an environment that meets the temperature and humidity specifications shown in Section Environmental Specifications.

SmartRack™ MV cart is intended to store and transport all the components of the device. It is good practice to always return the power, control, and motor cables to their respective sections of the cart, replace the Control Box to its spot, and latch the Motor Box to the provided bracket.



— 08

General description

—
09
Wheels and brake lever

—
10
Indicator light
and connector

Using the cart

Upon arrival, motor box, and control box will be secured to the cart. All wiring and cables will be inside of the cart.

The cart brakes need to be locked whenever the cart is to be parked. Move the cart by disengaging the brakes, lifting the handle, and pulling the cart. Apply the brakes located behind the back wheels.



—
09

Connect the power cable, turn the power switch on, and then follow the prompts on the control box. After using the device, return the motor box and control box to the original locations and replace the cables to their original position within the cart. Be sure to store the cart in a safe place and engage the brakes when parking the cart.

Motor box

The motor box has a motor, gearhead, coupling, and interlock actuator inside. The box is secured on the door and cart using the rotary latches on the sides of the motor box. There is one connector on the back of the box, which is connected to the actuator and the motor. There is also a three-color indicator light on the back of the box, indicating an idle state (green), the device in operation (yellow), or an error (red).



—
10

The motor box has a socket protruding from the motor, which connects to the end of the racking screw. The socket can be removed and replaced if required.

—
11
Racking socket on
motor box

—
12
Control box

—
13a
Racking extended
socket for 63kA

13b
Extension socket
for ReliGear ND



—
11

The motor box has three handles to lift and position the box. The operator should not use any other method to mount the motor operator on the mounting plate.

Control box

The control box consists of aluminum housing with two handles on the sides, one handle on the rear and a connector on the back, enclosing a pre-programmed PLC/HMI controller. The controller is connected to the cart by a standard length 25 foot cable, allowing the operator to move to a safe distance before operating SmartTrack™ MV. The controller will give instructions and feedback to the operator throughout the process.



—
12

Optional equipment

Cable extension

SmartTrack™ MV can be equipped with a 25 foot long optional extension cable (2RGA015184A0001) connecting the standard controller cable to the controller. This provides additional distance between the operator and the racking operation as well as providing an extra measure of safety.

63kA socket

If racking 63kA switchgear, or if a custom door has been installed on the switchgear, the additional socket provided can be pinned to the drive. Remove the standard socket by removing the screw, replace the standard socket with the socket extension, and use the same screw to secure the longer socket in the hole on the drive closest to the face of the motor box. The 63kA socket is a 16mm with a 3/8 drive and is 2 1/4 inches long.



—
13a

ReliaGear ND socket

If racking ReliaGear ND switchgear, or if a custom door has been installed on the switchgear, the additional socket adapter provided can be attached to the drive. The ReliaGear ND adapter is approximately 4 inches long with a hex head on one side and a square drive on the other. To install, insert the socket adapter into the racking tube of the switchgear and align it with the racking screw of the breaker. The adapter is properly engaged when you can push the adapter and depress the racking interlock on the breaker truck. The adapter should return to its initial position when you remove pressure. Proceed with the installation process of the motor box in the Operation of device/Set-up section.



—
13b

Operation of device

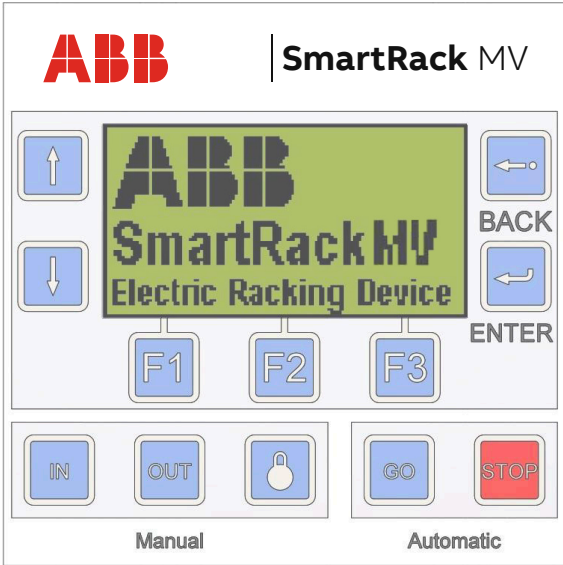
- 14
Controller start-up screen
- 15
Product warning screen
- 16
Info/Install selection screen

Inspection prior to use
Prior to using SmartRack™ MV, always inspect the device for damage or wear. Ensure that all the cable jackets are intact and all connectors are properly secured. Do not use the device if any component is damaged. Check for loose hardware, especially on the Motor Box.

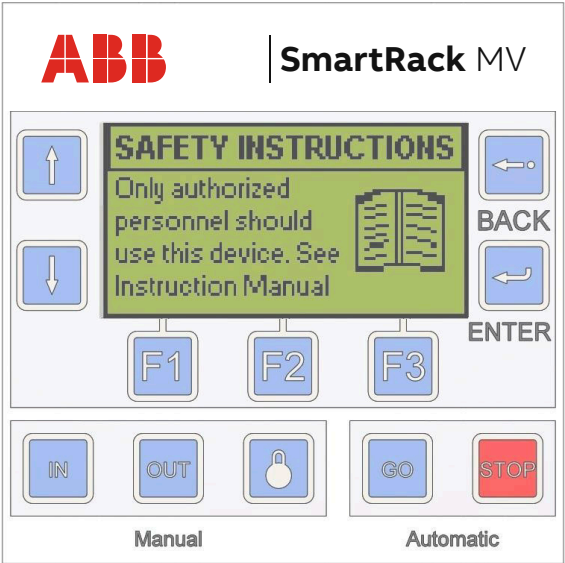
On the cell door, verify that the mounting adapter plate for attaching the Motor Box to the door is secure and the alignment pins are not bent. Confirm the area is clear and follow all procedures for working in the vicinity of power equipment including wearing the appropriate PPE.

Setup
Wheel SmartRack™ MV up to the area where racking is to be performed. The swivel wheels on the side of the cart with the handle have locks which should be engaged to keep the cart in position.

Locate an appropriate power source and plug in the power cord. Turn on the device using the switch and verify both green lights are illuminated. Switching on the device will power up the controller and it will run through a startup procedure (Figures 15 and 16).

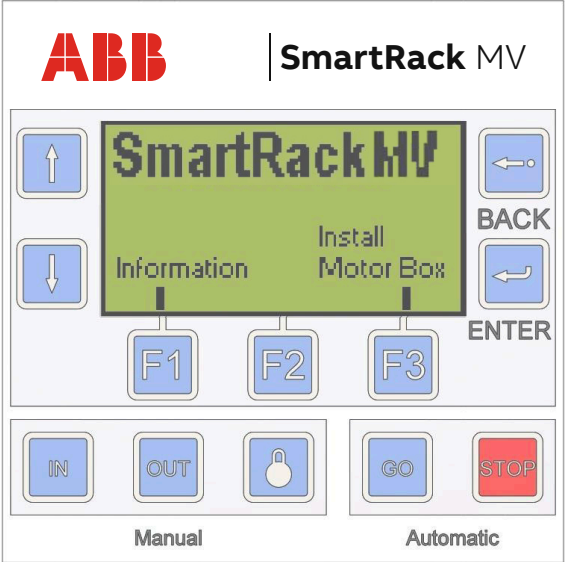


14



15

Read through the product warning (Figure 16) and if acceptable press enter to continue. Otherwise, turn off the device. Continuing from the warning screen will bring up the install/ information selection screen (Figure 17).



16

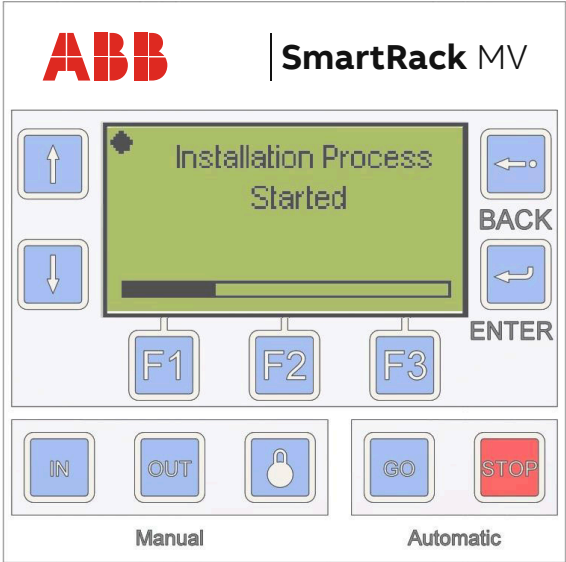
Figure 17
Installation process
started screen

Figure 18a
Installation of motor
box 1

Figure 18b
Installation of motor
box 2

Figure 19
Motor box installed
screen

5.3 Motor box installation



17

When “Install Motor Box” is selected and “enter” is pressed, the motor begins to rotate slightly back and forth to assist in the mating of the 16mm socket and the racking screw on the breaker, PT, CPT, contactor or G&T truck. This slight rotation will continue for 30 seconds or until the motor box socket has engaged the racking screw. If the motor box socket did not properly install, press enter to restart the slight rotation.

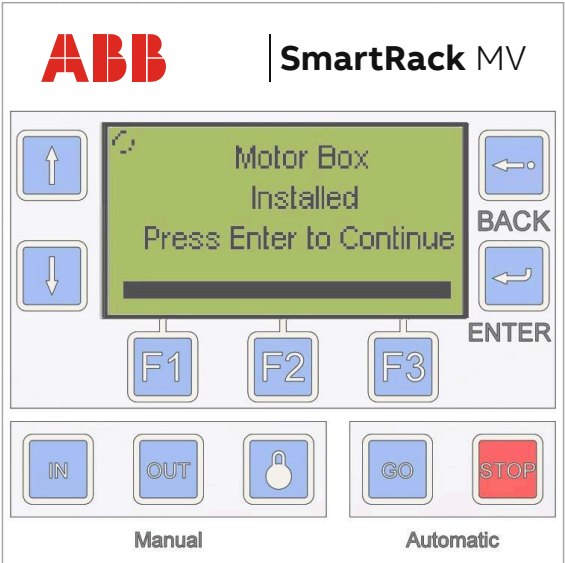
After the Motor Box is secured to the mounting plate on the door by rotating the two side latches, the operator should take the hand-held Remote Control Box and move a distance away as defined by local procedure. Once the motor box is installed, press enter to continue.



18a



18b



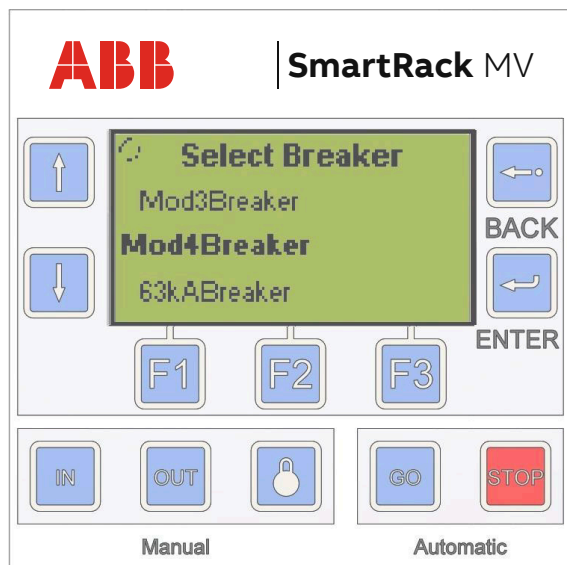
19

The Breaker, Auxiliary Unit, and MCC contactor selection screens (Figure 22) operate the same. Use the up and down arrows to highlight the correct unit and press enter. The unit type can be changed later from the main menu (Figure 23).

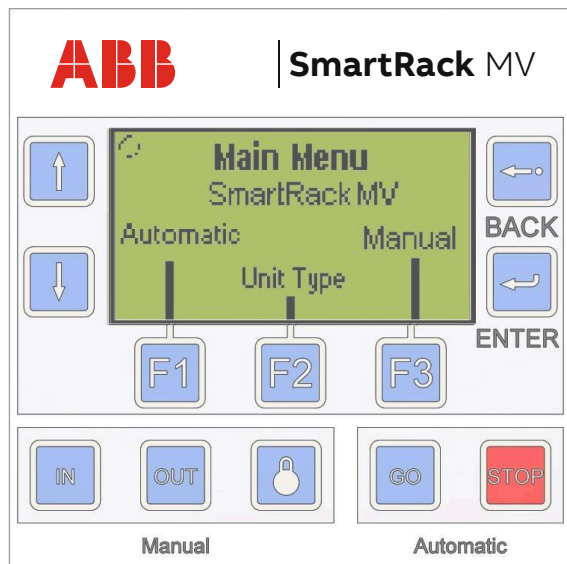
—
20
Unit type
selection screen

—
21
Main menu screen

—
22
Select initial
position screen



—
20

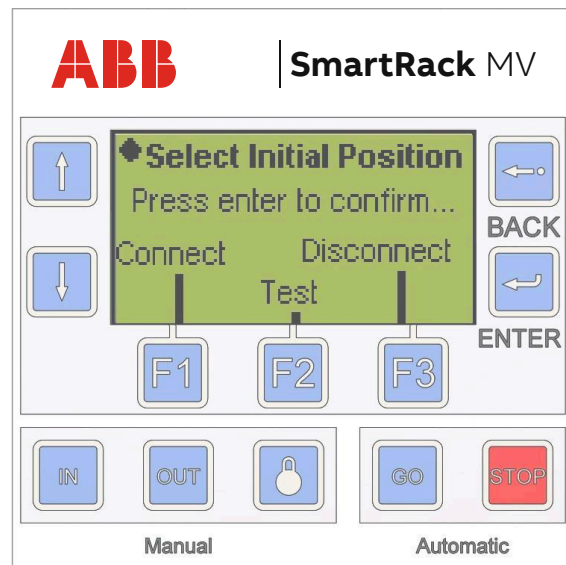


—
21

In the main menu screen, (Figure 23) the operator can select either F1 for automatic racking, F2 to change the unit type or F3 for manual racking. Automatic racking should be used whenever possible since it is intended to move devices between positions. Manual Racking gives the user greater control over the operation of the racking device; however, should only be used in exceptional circumstances, such as when a breaker failed to completely rack to a position. Refer to Section Automatic Racking or Section Manual Racking for more detail on the racking process.

Automatic racking

Automatic Racking is the device's standard operating mode. It allows the operator to specify a starting position and an end position. The device processes this information and then performs the complete racking procedure.



—
22

Once Automatic Racking has been selected, the select initial position screen (Figure 24) will request the current position. Connect is when the unit is all the way forward into the frame and both primary and secondary connections are made. Disconnect is when the unit is all the way backward where neither the primary nor secondary connections are made. Test is between disconnect and connect where only the secondary connections are made. Connect, Test, and Disconnect may be selected by pressing function buttons F1, F2, and F3, respectively. The ReliaGear ND platform will only have Disconnect and Connect positions for the circuit breaker.

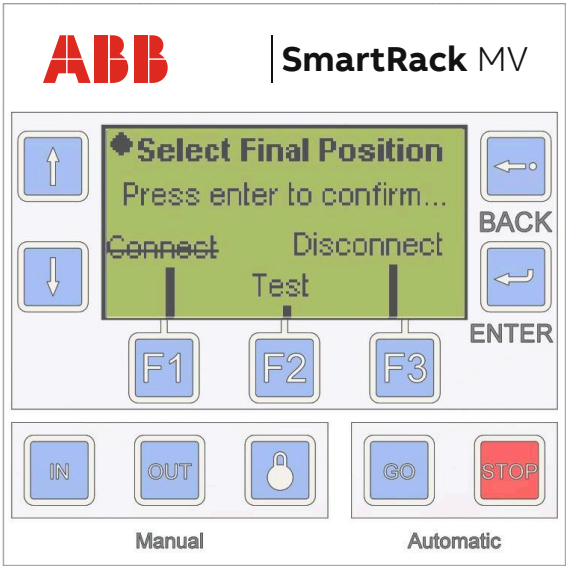
Note that the Test option may not be available for some devices, like potential transformers which have no test position on the racking screw.

Once a start position has been selected, the text for that position will be highlighted. Confirm the selection by pressing the ENTER button. Always be sure to double check the entered initial position matches the actual position of the unit.

—
23
Select final
position menu

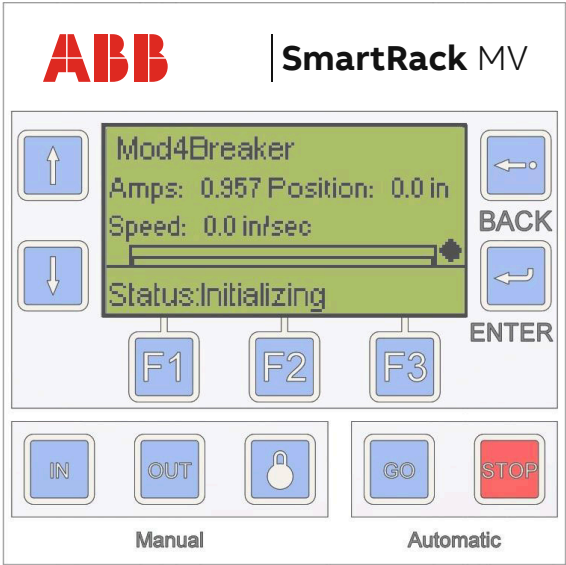
—
24
auto racking screen

—
25
racking complete screen



—
23

Once an initial position has been entered, the device will display a screen to select the final position (Figure 25). Note that some options, like the selected initial position, will be unavailable. Similar to the previous menu, the final end position will be highlighted and must be confirmed by pressing enter.

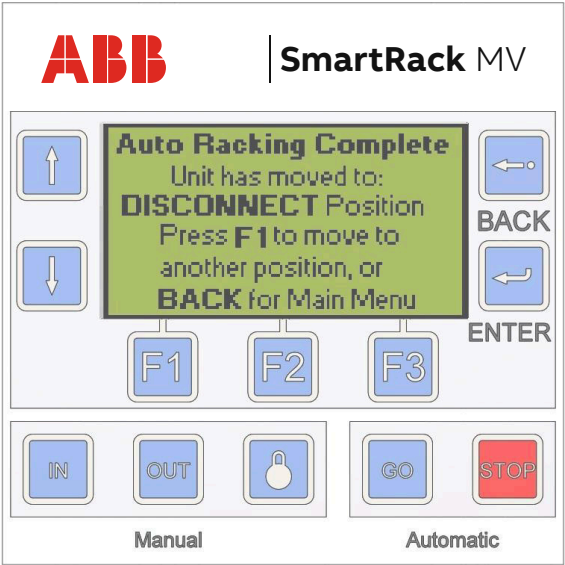


—
24

At this point SmartRack™ MV is ready to start the Automatic Racking sequence. The program tells the motor to torque to one side and then the other side and then moves to the center of the hole as a calibration of the breaker or other unit. If the unit is not in a positive position such as Disconnect, Test, or Connect, then SmartRack™ MV will not be able to calibrate and a centering error will be displayed. Please

remove the motor and ensure that the unit is in a positive position with the position interlock in place. After initialization, the position interlock is actuated. The operator can begin by pressing the GO button. The operator can monitor racking progress through the Automatic Racking screen (Figure 26). The Automatic Racking screen displays the device status and shows the relative position of the unit inside the cell using an incremental status bar.

When SmartRack™ MV reaches 90% of its calculated travel (i.e. from connect to test), the position interlock is released. As the final 10% of travel is completed, the position interlock should make an audible click as it locks into the position.



—
25

Once SmartRack™ MV completes an automatic position move, a racking complete screen (Figure 27) appears showing the new current position of the unit. Press the F1 button to move to a new position, or BACK to return to the main menu.

NOTICE Notice: After operating SmartRack™ MV in an automatic or manual move of contactor, verify that the unit is in the desired position visually or manually through use of a racking handle before operating unit.

Manual racking
Manual racking allows the operator greater control over the unit as compared to Automatic Racking. Rather than the device performing all the steps in the racking process, the operator is responsible for starting and stopping the unit being racked.

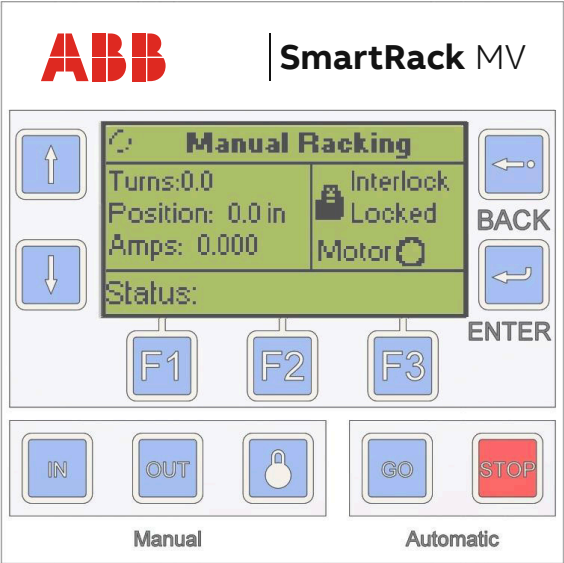
—
26
Manual racking screen

—
27
Manual racking buttons

—
28
Motor box green, yellow
and red indicator lights

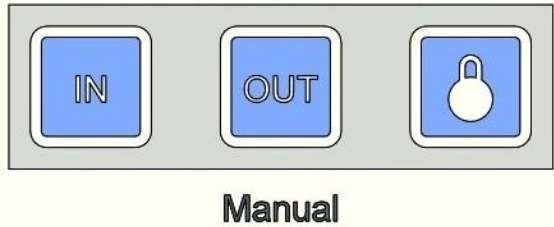
Manual racking is not unit-specific. Initial and final positions are not required for operation, although other settings such as torque limit, velocity and the existence of an interlock are unit specific; therefore, considerable caution is required when using SmartRack™ MV in manual mode.

If selected from the Main Menu, the racking device goes directly to the Manual Racking screen (Figure 28) and applies power to the Motor Box.



—
26

Once the Motor Box is secured to the cell door, the operator should take the hand-held Control Box and move a distance away as defined by their local procedures. At this point SmartRack™ MV is ready to start Manual Racking. This setting utilizes the three buttons to the lower left of the screen (Figure 29).

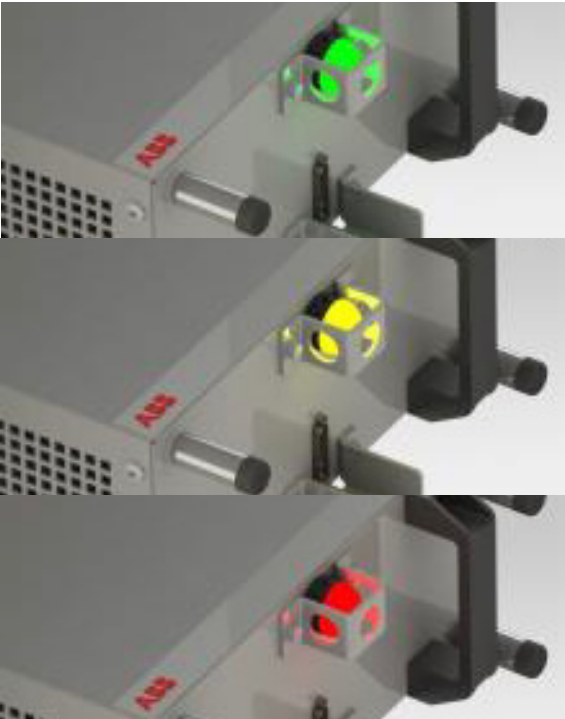


—
27

The IN button moves the unit towards the contacts and the OUT button moves the unit towards the door. These buttons must be pushed and held to produce motion. Releasing the button will cause the unit to come to a stop. The button with a picture of a pad lock toggles the interlock. In an emergency situation, the red STOP button can be pressed to send a stop command to the servomotor and cut power to the Motor Box.

Indicator lights

While SmartRack™ MV is in operation, the indicator light on the motor box will change from green to yellow. When racking is complete the indicator light will return to green. The indicator color significance is listed in table 2.



—
28

Table 2: Condition indicator lights

Condition	Significance
Green	Device ready
Yellow	Warning – Racking or interlock movement in progress. All personnel should remain a safe distance from SmartRack™ MV while in operation
Red	Alert – Error encountered (flickers on startup)
Off	No power to Motor Box

Racking complete

When either Automatic or Manual Racking is complete, press the BACK button to return to the main menu. From here racking can be repeated using the process explained earlier in this section. Otherwise, return the hand-held control to its place on the cart and detach the Motor Box from the door by twisting the rotary latches on both sides. Return the Motor Box to its area on the cart and follow the instructions in Section Storing the Device.

Always ensure that the unit is completely racked to the desired position and that the interlock pin has dropped into its slot in the racking screw, if applicable, before continuing.

Maintenance

—
29
Fuse installation

Standard maintenance
No regular maintenance should be required, but visual inspection prior to use is required. Possible places for wear include, but are not limited to, the socket head, the drive, the coupling, the gearhead, and the actuator. All parts have been tested to 500 operations, but improper use of SmartRack™ MV could cause failure.

Running the device in manual mode and listening for irregular noise, such as a screeching, grinding, or clunking sounds is not normal particularly if SmartRack™ MV is giving error messages.

Before operating SmartRack™ MV, a visual inspection must be conducted prior to use for general problems.

Troubleshooting

—
Table 3: Troubleshooting

Problem	Solution
No indicator lights illuminate when the device is switched on.	If neither light turns on then there is an issue with the power source or fuse.
Only one indicator light illuminates when the device is switched on.	One light signifies that there is an issue with the main 24VDC power supply.



—
29
If there is a problem in the setup of the device or while the device is operating, an error code will appear on the screen. A list of the error codes and the instructions of how to address each error is available in Section PLC controller error codes.

Compatible devices

Indoor circuit breakers

- 63 KA 1200A ADVAC
- 63 KA 2000A ADVAC
- 63 KA 3000A ADVAC
- 50 KA 1200A AMVAC/ADVAC
- 50 KA 2000A AMVAC/ADVAC
- 50 KA 3000A AMVAC/ADVAC
- 40 KA 1200A AMVAC/ADVAC
- 40 KA 2000A AMVAC/ADVAC
- 40 KA 3000A AMVAC/ADVAC
- 31.5 KA 1200A AMVAC/ADVAC
- 31.5 KA 2000A AMVAC/ADVAC
- 31.5 KA 3000A AMVAC/ADVAC
- 25 KA 1200A AMVAC/ADVAC
- 25 KA 2000A AMVAC/ADVAC
- 25 KA 3000A AMVAC/ADVAC
- 25 kA 1200 A Vmax/A
- 25 kA 2000 A Vmax/A
- 31.5 kA 1200 A Vmax/A
- 31.5 kA 2000 A Vmax/A
- 7.2 Auxiliary Units
- PT in Advance Compartment
- CPT/ CPT Fuse Unit in Advance Compartment
- PT in SafeGear Compartment
- CPT/ CPT Fuse Unit in SafeGear Compartment
- 1200/2000A Manual and Electric G&T's for Advance/SafeGear
- 3000A Manual and Electric G&T's for Advance/SafeGear
- 1200 A Manual G&T for ReliaGear ND
- 2000 A Manual G&T for ReliaGear ND
- 7.3 MCC Contactors
- Model 2 MCC Contactor

Specifications

—
Table 4: Mechanical

Parameter	Value
Mechanical Life	500 Operations
Ambient Temperature Range	0°C to +40 °C
Continuous Output Torque	35 ft-lbs
Racking time from Disconnect to Connect	<120 seconds
Weight	25-50 lbs
Power Cable Length	25 feet
Control Cable Length	25 feet
Power Cable Size	10 gauge

—
Table 5: Electrical

Parameter	Value
Input Voltage	120 VAC
Rated Current	<20 Amps

Environmental

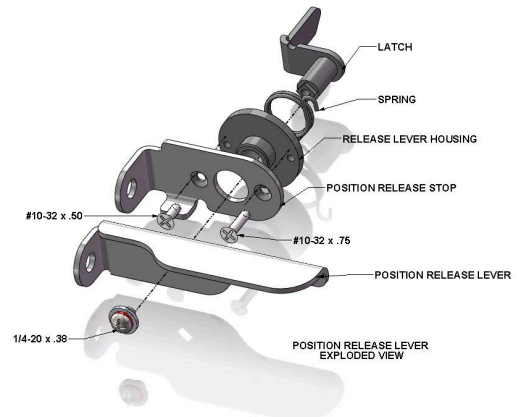
This is indoor equipment and is designed to operate under standard service conditions as defined in ANSI C37.04 for breakers and C37.20.2 for the switchgear assembly washer that need to be removed from the center of the lever itself. Then there are two screws that hold the position release stop onto the door. Both the position release stop and position release lever need to be removed and discarded.

Installation of SmartRack™ MV mounting adapter plate

- 30
Position release lever
- 31
Position release lever exploded view
- 32
Removal of the position release lever
- 33
Installation of SmartRack™ MV mounting adapter plate

Doors with release lever (advance and SafeGear)

Breaker doors have a position release lever assembly on the front of the door (Figures 32 & 33). This lever actuates by lifting the racking pin in the withdrawable truck to allow the racking screw to rotate. The mounting hardware that mounts this lever in place can be used to also mount SmartRack™ MV mounting adapter plate. The exploded view (Figure 33) should be used as a reference for disassembly and for reassembly of these parts.



30

First, the position release lever should be removed from the switchgear door (Figure 34). There is one screw, a flat washer and a lock washer that need to be removed from the center of the lever itself. Then there are two screws that hold the position release stop onto the door. Both the position release stop and position release lever need to be removed and discarded.

31



32



33

- 34 Installation of position release lever
- 35 Lever spring inside door
- 36 ReliaGear ND adapter plate

Using the same hardware from the removal of the position release stop, mount SmartRack™ MV mounting plate to the Switchgear door with the replacement position release lever (Figure 35) found in the mounting adapter plate hardware bag. The longer of the two screws should be screwed into the right hand side. The end of this screw will be used to catch the end of the spring.



34

With SmartRack™ MV mounting adapter plate mounted, re-assemble the spring onto the replacement position release lever, and then the latch into the housing (Figure 36).

With the latch rotated with torque against the spring, align the position release lever as shown in Figure 36.

Use the same hardware that was removed (1/4-20 x 3/8 screws) to install the position release lever.

Using the mounting adapter plate as a drilling guide, drill a 9/32 inch hole through the square holes on either side of the mounting plate through the door. Install the 1/4-20 X 3/4 long carriage bolts into these holes and secure with the flat & lock washers plus the nut. These fasteners are required to securely hold the mounting plate against the door during racking.



35

Doors for ReliaGear ND

Locate and remove the two carriage bolts (1/4-20X3/4), flat washers, lock washers, and hex nuts on the front door where SmartRack adapter plate will mount. Retain for future use.

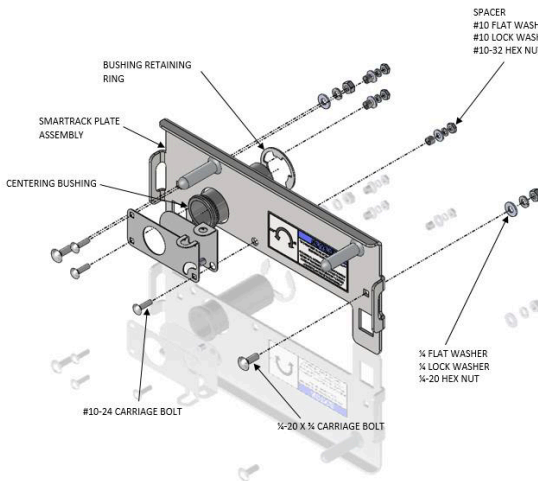
Remove the three #10-24 carriage bolts, spacers, washers, and hex nuts used to secure the racking hole blocking plates and retain for future use.

Remove the bushing retaining ring and slide the centering bushing out from the door. These will be re-used as well.

To install the adapter plate, align the plate with the two holes on the door and secure using the 1/4-20X3/4 bolts that were removed previously.

Insert the centering bushing and secure it using the bushing retaining ring that was removed previously.

Attach the blocking plates using the three #10-24 bolts that were removed previously.



36

PLC controller error codes



WARNING

Warning: Before addressing any error involving the cart itself, turn off the racking device and make sure the indicator light on the motor box is not illuminated. Then remove the device and return it to the cart or in another safe, stable location.

Table 6: Renewal parts reference

Code	Description	Solution
E0004	Start Up Error	Safely remove motor box. Try to manually turn handle. If handle moves, replace motor box and try again. If it is not fixed, follow unit instructions.
E0005	E-Stop	E-Stop Button was pressed and motor power has been shut off. Press the E-Stop Button again, safely remove motor box, and reinstall motor box.
E0007	Centering Error	In an automatic position move, the motor box attempts to find the center of the hole in the racking screw. If the pin is not fully seated, the center cannot be found. Remove the motor box, try to manually lock the unit into a position and reinstall the motor box.
E0012	Motor Torque Error	Motor has reached a maximum defined torque. Check the position of the breaker or auxiliary unit to be sure it is not already fully connected or disconnected.
E0013	Motor Thermal Fault	Motor has reached a maximum temperature. Remove the motor box, allow the motor to cool and reinstall the motor box.
E0014	Position Fault	The encoder in the motor does not match the output position. Inspect unit for blockage, and inspect motor box for damage.
E0015	Motor Low Voltage	Contact Support
E0016	Motor High Voltage	Contact Support
E0017	PLC Low Voltage	Contact Support
E0018	PLC High Voltage	Contact Support
E0020	Version Error	The version of the programming in the motor is not the same as the version expected by the PLC.
E0021	Motor Communication	The PLC cannot communicate with the Motor. Check that the communication cables are fully connected and the shielding is not broken.



Renewal parts reference

Table 6: Renewal part numbers

Description	Catalog Number
Complete SmartRack™ MV Assembly	2RGA015186A0001
Mounting Adapter Plate with Hardware (Advance/SafeGear)	2RGA017881A0002
Optional 25 ft. Motor Communication Cable	2RGA015184A0001
63kA Racking Screw Socket, 3/8" Drive X 2.25" X 16mm	2RGA014923P0001
120VAC Power Cord	2RGA015731P0001
6 A Class CC Fuse	2RGA017246P0001
Remote Hand Held PLC Control Unit	2RGA015090A0001
Motor Box Red/Green/Yellow Light	2RGA015054P0001
Fixed Caster Wheel	2RGA015176P0001
Locking Swivel Caster Wheel	2RGA015177P0001
PLC Power Supply 24VDC / 5 A CP-E 24/5.0	2RGA015156P0001
PLC Power Supply 24VDC / 20 A	2RGA015155P0001
Panel Mounted Fuse Holder	2RGA015358P0001
Std Racking Screw Socket, 3/8" Drive X 1.125" X 16mm	2RGA014924P0001
Pilot Light, Green	3WGA015348P0001
Motor Compression Socket Spring	2RGA018981P0001
Lighted Selector Switch, Green	2RGA015355A0001
ReliaGear ND Racking Screw Socket	2RGA022094P0001
Mounting Adapter Plate for ReliaGear ND	2RGA020927A0001
Zero Max Coupling	2RGA014941A0001



ABB Inc.

305 Gregson Drive
Cary, NC 27511 USA
abb.com/contacts

abb.com/mediumvoltage

The information contained in this document is for general information purposes only. While ABB strives to keep the information up to date and correct, it makes no representations or warranties of any kind, express or implied, about the completeness, accuracy, reliability, suitability or availability with respect to the information, products, services, or related graphics contained in the document for any purpose. Any reliance placed on such information is therefore strictly at your own risk. ABB reserves the right to discontinue any product or service at any time.

© Copyright 2022 ABB. All rights reserved.