

SMC1 OPERATORS MANUAL



**BRADSHAW
COMMUNICATION
SYSTEMS**

MODEL SMC1 STOW MOTOR CONTROL SYSTEM OPERATION INSTRUCTION MANUAL

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INTRODUCTION

A. MANUAL PURPOSE

This manual contains operating instructions for the Bradshaw Communication Systems SMC1 Stow Motor Control System. The instructions herein are provided for personnel responsible for stowing the Earth Station Antenna using the SMC1 system. A nameplate label located inside the door of the SMC1 identifies the units' model number, part number, revision, and serial number. The serial number is used by Bradshaw Communication Systems (BCS) to identify the units' particular configuration of options.

This manual does not provide information pertaining to installation, troubleshooting, and/or maintenance of the SMC1. Information pertaining to these subjects is found only in the SMC1 Installation & Maintenance Manual, which, is intended only for qualified service personnel. The SMC1 contains no operator serviceable parts and all maintenance and/or repairs should be referred to qualified service personnel.

B. MANUAL ORGANIZATION

This manual is organized into the following two sections:

“Introduction” – This section provides manual purpose, manual organization, unit specifications, and customer support information.

“General Description” – This section provides safety precautions, typical system configuration, and a description of the operator controls and indicators found on the SMC1.

C. SMC1 STOW MOTOR CONTROL UNIT SPECIFICATIONS

Dimensions: 14.5" (36.8cm) high x 13" (33cm) wide x 8.3" (21.1cm) deep
Weight: 30 LBS (13.6 Kg)
Power Requirements: 3 Phase Power - Voltage & Current Dependent on Motor Sizes
Environmental: -40° to 50°Celsius (-40° to 122° Fahrenheit) Operational
100% Relative Humidity
Enclosure: Wall Mounted Weatherproof NEMA 4X Enclosure with
Hinged Cover and Screw Release Latches.
Enclosure Finish: Fiberglass Polyester
Enclosure Color: Light Gray

D. SMC1 RACK MOUNT REMOTE UNIT (OPTIONAL)

Dimensions: ANSI/EIA 1 Rack Height
1.719" (4.37cm) high x 19.0" (48.26cm) wide x 3.0" (7.62cm) deep
Weight: 10 LBS (4.54 Kg)
Power Requirements: 5 VDC - Supplied by SMC1 Motor Control Unit
Environmental: 0° to 50°Celsius (32° to 122° Fahrenheit) Operational
85% Relative Humidity (Non-Condensing)

E. CUSTOMER SUPPORT

Customer support, replacement parts, and repair are available 8AM – 5PM EST M-F by contacting Bradshaw Communication Systems at 770-844-9704 or by fax at 770-886-0205. World Wide Web support available at: <http://www.bcstech.com> .

GENERAL DESCRIPTION

A. SAFETY PRECAUTIONS

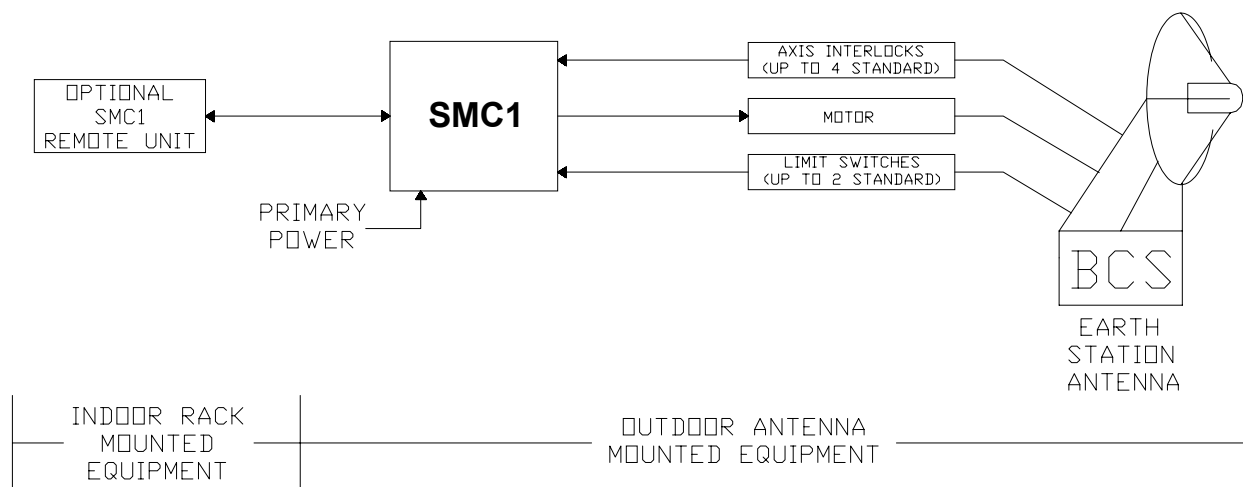


Lethal voltages are present inside the SMC1. Limit switches and other interlocks will disable the system, but do not disconnect the SMC1 from primary power. Refer all troubleshooting and repair to qualified service personnel. The SMC1 contains no operator serviceable parts.

B. INTRODUCTION

Typical System Configuration

The SMC1 Stow Motor Control System provides high power three-phase motor control and limit/interlock switch monitoring for earth station antennas requiring single axis stow capabilities. The earth station antennas are most commonly parabolic reflectors with a single steerable axis of motorization. When combined with the optional Stow Motor Control Remote Panel, the SMC1 allows for both local (at the antenna) and remote (at a remote indoor rack location) control and monitoring of an earth station antenna stow axis. For systems not requiring rack mounted remote control, the SMC1 may be ordered and used without the remote control option, still providing complete local axis control at the front of the antenna mounted SMC1 unit. A typical system configuration is shown in Figure 1 and details interconnection of the SMC1 with the other required system components that comprise a complete stow control system. Note that the addition of the motor and limit/interlock switches are all that is required to allow local stow control of the earth station antenna.



TYPICAL SYSTEM CONFIGURATION
FIGURE 1

The SMC1 is the main system component and contains the control logic electronics to generate motor drive commands. Motor drive commands are produced in response to inputs from front panel controls and the optional SMC1 Rack Mount Remote Control Unit, and are dependent upon limit/interlock switch/s conditions.

Interlock switch feedback disables all axis movement while limit switch feedback disables specific directional movement once a specific limit switch has been reached. Indication is provided on the SMC1 front panel showing interlock status when antenna movement is attempted and interlocks are still present.

The optional SMC Remote Unit is generally rack mounted and located in the control room area, while the SMC1, limit switch/s, interlock switch/s, and motor are generally located on the earth station antenna structure. Limit and interlock switch/s, motor, and system cabling are generally customer provided unless BCS has been contracted to supply these system components.

C. SMC1 STOW MOTOR CONTROL UNIT FRONT PANEL CONTROLS & INDICATORS

1. UP/REMOTE/DOWN Selector Switch

This three-way selector switch provides for selection of the antenna direction of motion or allows remote control via the optional SMC1 Rack Mount Remote Control Unit. When this switch is set to the UP position, the antenna will be commanded in the up direction once the Motion Enable Switch is activated. When set to the DOWN position, the antenna will be commanded in the down direction once the Motion Enable Switch is activated. When set to the REMOTE position, control of stow axis movement is routed to the optional SMC1 Rack Mount Remote Control Unit. Whether the optional SMC1 Rack Mount Remote Control Unit is connected or not, this switch when set to the REMOTE position, disables all SMC1 Stow Motor Control Unit front panel control capability.

2. Stow Axis Disabled Indicator

The UP/REMOTE/DOWN Selector Switch handle will illuminate red anytime the Motion Enable Switch is activated while either UP or DOWN is selected and there are interlocks active. This indicates to the operator that interlock conditions still exist which are preventing the stow axis from being moved.

3. Motion Enable Switch

The Motion Enable Switch provides for activation of the antenna in the selected direction (UP or DOWN) as selected by the UP/REMOTE/DOWN Selector Switch. This switch is momentary in action and returns to the standby position in the event the operator lets go of its handle. This safety feature ensures the operator is in control of all stow axis movement. This switch is also key lockable providing for security ensuring that only authorized personnel are able to activate the antenna. The key (two provided) is removable in both positions allowing the switch to be left in the unlocked position for times of maintenance and the like.

D. SMC1 RACK MOUNT REMOTE CONTROL UNIT FRONT PANEL CONTROLS & INDICATORS

1. UP/DOWN Selector Switch

This switch provides for selection of the antenna direction of motion from the SMC1 Rack Mount Remote Control Unit. When this switch is set to the UP position, the antenna will be commanded in the up direction once the Motion Enable Switch is activated. When set to the DOWN position, the antenna will be commanded in the down direction once the Motion Enable Switch is activated.

2. Motion Enable Switch

The Motion Enable Switch provides for activation of the antenna in the selected direction (UP or DOWN) as selected by the UP/DOWN Selector Switch. This switch is momentary in action and returns to the standby position in the event the operator lets go of its handle. This safety feature ensures the operator is in control of all stow axis movement. The Remote Enabled indicator must be illuminated and no Interlock or Limit indicators illuminated for the switch to be allowed to command stow axis movement.

3. Power Indicator

Illuminates green to indicate power is supplied to the SMC1 Rack Mount Remote Unit.

4. Local Control Indicator

Illuminates red indicating control is only available at the "local" SMC1 Stow Motor Controller.

5. Interlock Indicator

Illuminates red to indicate one or more stow axis interlocks are active.

6. Up Limit Indicator

Illuminates red to indicate the stow axis has reached the up limit switch.

7. Down Limit Indicator

Illuminates red to indicate the stow axis has reached the down limit switch.