

Product Description

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Introduction

Qualified Persons

WARNING

The equipment covered by this publication must be installed, operated, and maintained by qualified persons who are knowledgeable in the installation, operation, and maintenance of overhead electric power distribution equipment along with the associated hazards.

A qualified person is one who is trained and competent in:

- The skills and techniques necessary to distinguish exposed live parts from nonlive parts of electrical equipment
- The skills and techniques necessary to determine the proper approach distances corresponding to the voltages to which the qualified person will be exposed
- The proper use of the special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools for working on or near exposed energized parts of electrical equipment

These instructions are intended only for such qualified persons. They are *not* intended to be a substitute for adequate training and experience in safety procedures for this type of equipment.

Read this Instruction Sheet

NOTICE

Read this instruction sheet thoroughly and carefully before installing or operating your S&C IntelliCap Automatic Capacitor Control. Familiarize yourself with the Safety Information on page 4 and Safety Precautions on page 5. The latest version of this publication is available online in PDF format at sandc.com/en/support/product-literature/.

Retain this Instruction Sheet

This instruction sheet is a permanent part of your S&C IntelliCap Automatic Capacitor Control. Designate a location where you can easily retrieve and refer to this publication.

Proper Application

WARNING

The equipment in this publication must be selected for a specific application. The application must be within the ratings furnished for the selected equipment.

Special Warranty Provisions

The standard warranty contained in S&C's standard conditions of sale, as set forth in Price Sheets 150 and 181, applies to the S&C IntelliCap Automatic Capacitor Control, except that the first paragraph of the said warranty is replaced by the following:

(1) General: The seller warrants to the immediate purchaser or end user for a period of 10 years from the date of shipment that the equipment delivered will be of the kind and quality specified in the contract description and will be free of defects of workmanship and material. Should any failure to conform to this warranty appear under proper and normal use within 10 years after the date of shipment, the seller agrees, upon prompt notification thereof and confirmation that the equipment has been stored, installed, operated, inspected, and maintained in accordance with the recommendations of the seller and standard industry practice, to correct the nonconformity either by repairing any damaged or defective parts of the equipment or (at the seller's option) by shipment of necessary replacement parts. The seller's warranty does not apply to any equipment that has been disassembled, repaired, or altered by anyone other than the seller. This limited warranty is granted only to the immediate purchaser or, if the equipment is purchased by a third party for installation in third-party equipment, the end user of the equipment. The seller's duty to perform under any warranty may be delayed, at the seller's sole option, until the seller has been paid in full for all goods purchased by the immediate purchaser. No such delay shall extend the warranty period.

Replacement parts provided by the seller or repairs performed by the seller under the warranty for the original equipment will be covered by the above special warranty provision for its duration. Replacement parts purchased separately will be covered by the above special warranty provision.

Warranty of the S&C IntelliCap Automatic Capacitor Control is contingent upon the installation, configuration, and use of the control or software in accordance with S&C's applicable instruction sheets.

This warranty does not apply to major components not of S&C manufacture. However, S&C will assign to the immediate purchaser or end user all manufacturer's warranties that apply to such major components.

Warranty of equipment/services packages is contingent upon receipt of adequate information on the user's distribution system, sufficiently detailed to prepare a technical analysis. The seller is not liable if an act of nature or parties beyond S&C's control negatively impact performance of equipment/services packages; for example, new construction that impedes radio communication, or changes to the distribution system that impact protection systems, available fault currents, or system-loading characteristics.

Safety Information

Understanding Safety-Alert Messages

Several types of safety-alert messages may appear throughout this instruction sheet and on labels attached to the S&C IntelliCap Automatic Capacitor Control. Familiarize yourself with these types of messages and the importance of these various signal words:

DANGER

“DANGER” identifies the most serious and immediate hazards that *will likely* result in serious personal injury or death if instructions, including recommended precautions, are not followed.

WARNING

“WARNING” identifies hazards or unsafe practices that *can* result in serious personal injury or death if instructions, including recommended precautions, are not followed.

CAUTION

“CAUTION” identifies hazards or unsafe practices that *can* result in minor personal injury if instructions, including recommended precautions, are not followed.

NOTICE

“NOTICE” identifies important procedures or requirements that *can* result in product or property damage if instructions are not followed.

Following Safety Instructions

If you do not understand any portion of this instruction sheet and need assistance, contact your nearest S&C Sales Office or S&C Authorized Distributor. Their telephone numbers are listed on S&C’s website sandc.com, or call S&C Headquarters at (773) 338-1000; in Canada, call S&C Electric Canada Ltd. at (416) 249-9171.

NOTICE

Read this instruction sheet thoroughly and carefully before installing or operating your S&C IntelliCap Automatic Capacitor Control.



Replacement Instructions and Labels

If you need additional copies of this instruction sheet, contact your nearest S&C Sales Office, S&C Authorized Distributor, S&C Headquarters, or S&C Electric Canada Ltd.

It is important that any missing, damaged, or faded labels on the equipment be replaced immediately. Replacement labels are available by contacting your nearest S&C Sales Office, S&C Authorized Distributor, S&C Headquarters, or S&C Electric Canada Ltd.

⚠ DANGER



The S&C IntelliCap Automatic Capacitor Control line voltage input range is 93 to 276 Vac. Failure to observe the precautions below will result in serious personal injury or death.

Some of these precautions may differ from your company's operating procedures and rules. Where a discrepancy exists, follow your company's operating procedures and rules.

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| <ol style="list-style-type: none"> 1. QUALIFIED PERSONS. Access to the IntelliCap Automatic Capacitor Control must be restricted only to Qualified Persons. 2. SAFETY PROCEDURES. Always follow safe operating procedures and rules. Always maintain proper clearance from energized components. 3. PERSONAL PROTECTIVE EQUIPMENT. Always use suitable protective equipment, such as rubber gloves, rubber mats, hard hats, safety glasses, arc-flash | <p>clothing, and fall protection, in accordance with safe operating procedures and rules.</p> <ol style="list-style-type: none"> 4. SAFETY LABELS AND TAGS. Do not remove or obscure any of the "DANGER," "WARNING," "CAUTION," or "NOTICE" labels and tags. Remove tags ONLY if instructed to do so. 5. MAINTAINING PROPER CLEARANCE. Always maintain proper clearance from energized components. |
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Description

Overview

The IntelliCap Automatic Capacitor Control is a member of the S&C Electric Company family of distribution automation control products. It's a low-cost solution for switching capacitor banks in a non-SCADA application.

The IntelliCap control features microprocessor-based control of the capacitor bank, voltage and temperature monitoring, optional current and kvar monitoring, and data logging. Faceplate switches and the alphanumeric LCD screen access the key setpoints and real-time data. It isn't necessary to connect a computer to set up a typical installation. The IntelliCap control is a complete, factory-integrated package designed for maximum accuracy, reliability, and versatility.

Figure 1 shows the enclosure.

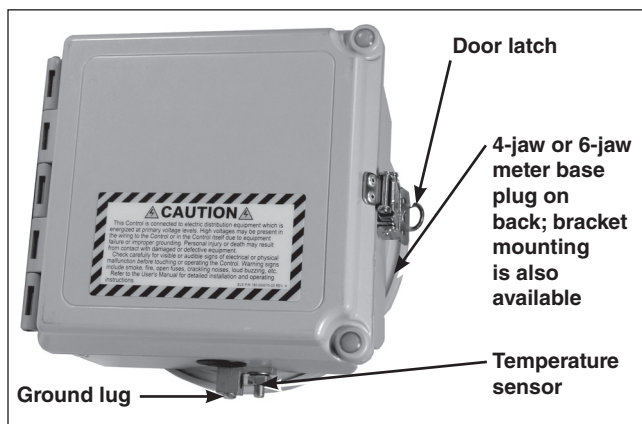


Figure 1. The IntelliCap control enclosure.

- **Enclosure**—The sturdy enclosure is made from corrosion-resistant molded fiberglass and provides weatherproof, tamper-resistant protection.
- **Door Latch**—The latch allows you to securely padlock the enclosure.
- **Meter Base**—A 4-jaw or 6-jaw meter base provides plug-compatible mounting in existing capacitor control (meter) sockets. A bracket mount option is also available.
- **Temperature Sensor**—The control monitors ambient temperature, providing information necessary for the Temperature or Time-Biased Temperature automatic control strategies.
- **Ground Lug**—The control must be grounded at this point.

See Figure 2 for location of the faceplate controls.

- **LCD screen**—The LCD screen shows real-time data, setpoint values, and historical data that can be viewed without using a portable computer.
- **Switches**—The switches enable setpoint adjustments and local, manual control of bank switching.
- **Local communication port**—The DB9 connector allows connection of a computer and use of IntelliLink® Setup Software to view data, change setpoints, download logged data, and update the control software.
- **Test points**—The test points are conveniently located on the faceplate for easy troubleshooting.
- **Control software**—The software is stored in nonvolatile memory and manages all IntelliCap functions. It can be easily updated with IntelliLink Setup Software.
- **Setup software**—The IntelliLink menu-driven software enables users to adjust and verify all setup and configuration parameters, monitor real-time operating data, perform troubleshooting, view long-term trends and data-logging results, and create reports and graphs.

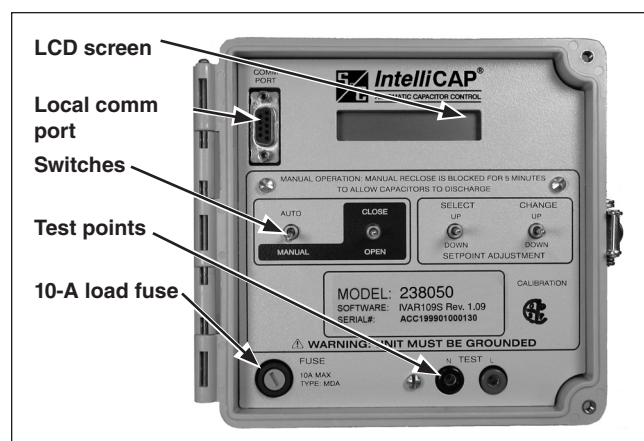


Figure 2. The IntelliCap control faceplate.

IntelliCap Features

The IntelliCap control is a low-cost, noncommunicating capacitor control functionally based on the S&C 1000 Series Capacitor Controls. The IntelliCap control includes the following features:

- **Toughness and reliability**—It's designed to withstand the difficult environmental and electrical conditions found in distribution automation applications.
- **Rugged, well-proven core electronics design**—The microprocessor, memory, and all related components are based on technology developed for S&C's full range of control products (with over 50,000 units now in the field).

- **Sophisticated automatic control logic**—The control firmware eliminates unnecessary switching, improves var correction, and minimizes customer voltage complaints.
- **Extensive data-logging capabilities**—Data logging is useful for monitoring the effectiveness of standalone applications.
- **Setpoint control of operating parameters**—The automatic operation options, physical location information, and other operating parameters can be viewed and changed as needed. The faceplate LCD screen enables users to set up, monitor, and troubleshoot the IntelliCap control in most typical installations without a computer.
- **Non-volatile memory**—Programming, setpoints, and data are stored in permanent, nonvolatile memory for maximum field functionality and reliability.
- **Real-time clock**—The crystal-controlled perpetual-calendar clock provides accurate time for control purposes and for time stamping real-time data.
- **Reclose block delay**—A five-minute delay after switching the bank out allows the capacitors to fully discharge.
- **Reverse power conditions**—The control continues to operate intelligently during a reverse-power condition.
- **Customized setup software screens**—The screens are designed to meet the needs of a user's specific IntelliCap application.
- **IntelliCap control is shipped ready to install**—The IntelliCap control is modular and requires no discrete field wiring other than 120-Vac control power.
- **Adjustable data logging**—The logging interval for voltage and temperature information can be configured from 1 minute to 1 hour for 2 to 120 days of data.
- **Online graphing**—Graphs of the logged data can be downloaded to get an overview of trends.
- **Data available for use in spreadsheets**—The logged data and setup information can be downloaded to a CSV (comma-separated value) file and saved in a spreadsheet for analysis.
- **Report viewing programs**—Control data can be downloaded to Microsoft® Excel files and is available for viewing and printing reports and plotting logged data.

Description

IntelliCap Control with Var Features

The IntelliCap Control with Var option also includes the following features:

- **Compensates for load-side current sensors**—While the preferred location for current sensors is the source side of the bank, the IntelliCap with Var control functions correctly with current sensors on the load side of the bank.
- **Custom current-signal conditioning**—The IntelliCap control is specifically designed and tested for use with S&C, Lindsey, or Fisher Pierce line-post current sensors.