

Instruction Bulletin

MCS025 Sync-Check Module Installation Sheet

Retain for future use.



⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Only qualified electrical workers should install this equipment, after reading this entire instruction set.
- NEVER work alone.
- Before performing visual inspections, tests, or maintenance on this equipment, disconnect all sources of electric power. Assume that all circuits are live until they have been completely deenergized, tested, and tagged.
- Terminal 17 (PE) on connector A of the MCS025 and the functional grounding terminal of the Sepam Series 80 relay must be locally connected to the cubicle grounding circuit. The two connection points must be as close as possible to one another.
- Dangerous voltages may be present on the terminal screws. Tighten all terminal screws so that they cannot be touched inadvertently.
- Use a properly rated voltage sensing device to confirm that power is off.
- Replace all devices, doors, and covers before energizing the equipment.

Failure to follow these instructions will result in death or serious injury.

Introduction

The optional MCS025 module performs the Sepam™ Series 80 sync-check function (i.e., checks the upstream and downstream voltages of a circuit breaker to ensure safe closing — ANSI 25) for substation, transformer, generator and bus applications.

It checks the differences in amplitude, frequency, and phase between the two measured voltages, and takes into account dead line/bus conditions. Three relay outputs can be used to send a Close Enable signal to several Sepam Series 80 relays. The circuit-breaker control function of each Sepam Series 80 relay takes this close enable into account.

The settings for the sync-check function and the measurements carried out by the module are accessed by the SFT2841 setting and operating software. They are similar to the other settings and measurements for the Sepam Series 80.

The MCS025 module is equipped with the following:

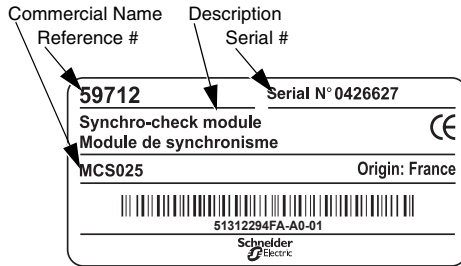
- CCA620 connector for connecting the relay outputs and the power supply
- CCT640 connector for voltage connection
- CCA785 cord for connection between the module and the Sepam Series 80 base unit

Storage

For storage, keep the MCS025 module in its original packaging in a sheltered location with the following environmental conditions:

- Ambient temperature -13° to +160° F (or -25° to +70° C)
- Non-condensing humidity ≤ 90%

Identification



Each MCS025 module is delivered in a separate package containing:

- 1 MCS025 Sync Check Module
- 1 CCT640 VT Voltage Connector
- 1 CCA785 Sync Check Connection Cable
- 1 Installation Sheet

To identify an MCS025 module, check the label on the connector side of the MCS025.

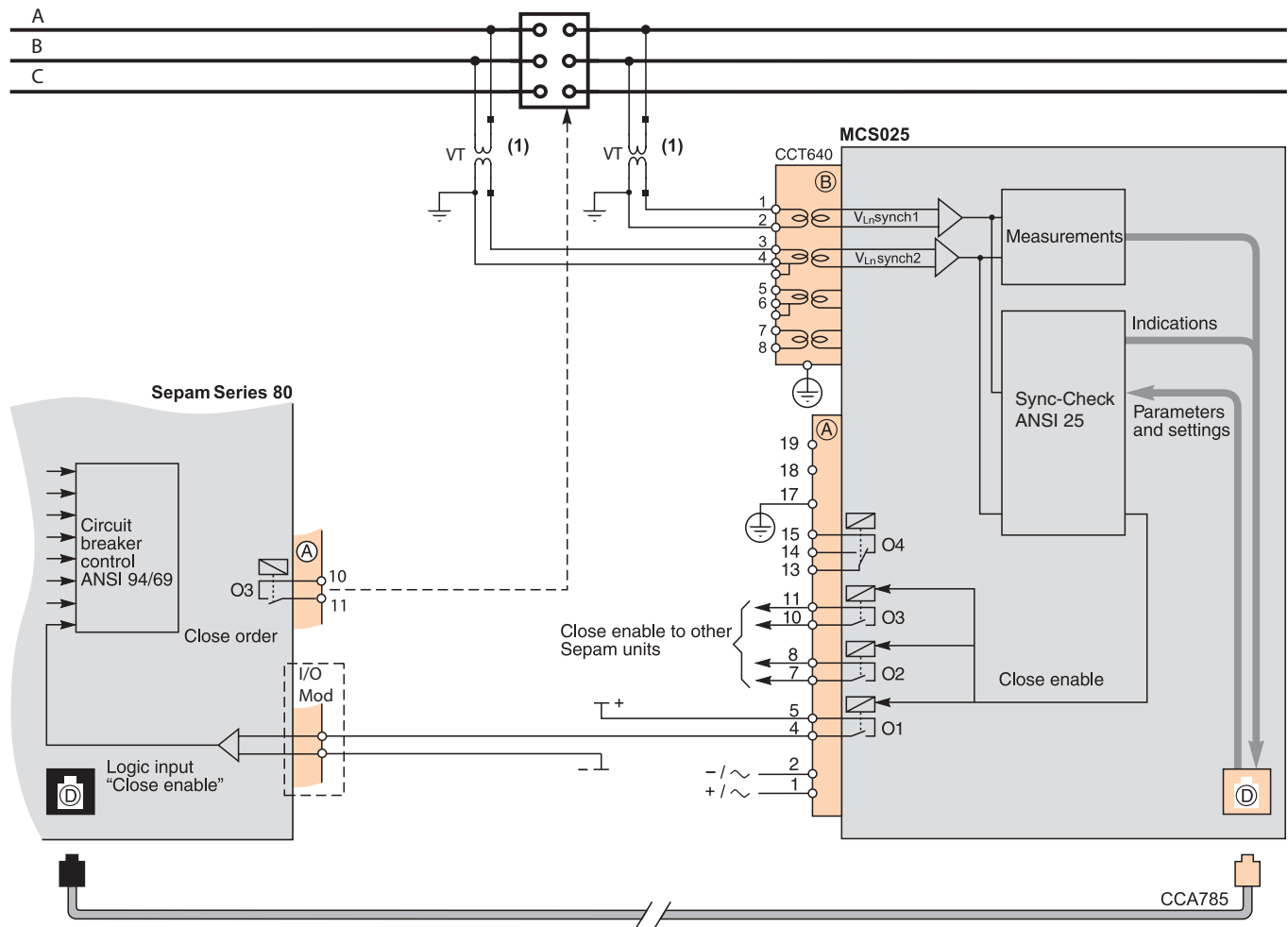
NOTE: For further information, please see the *Sepam Series 80 Installation Manual* (63230-216-229).

Characteristics

MCS025 Module					
Weight	2.98 lb (1.35 kg)				
Assembly	With the AMT840 accessory (must be ordered separately)				
Operating Temperature	-13° to +158°F (-25° to +70°C)				
Environmental Characteristics	Same characteristics as Sepam™ base units				
Voltage Inputs					
Input Impedance	> 100 kΩ				
Burden	< 0.015 VA (VT 100 V)				
Continuous Thermal Withstand	240 V				
One-Second Overload	480 V				
Relay Outputs					
Relay Outputs O1 & O2					
Voltage	DC	24/48 V DC	127 V DC	250 V DC	
	AC (47.5–63 Hz)				100–240 V AC
Continuous Current		8 A	8 A	8 A	8 A
Breaking Capacity	Resistive Load	8 A / 4 A	0.7 A	0.3 A	
	Load L/R < 20 ms	6 A / 2 A	0.5 A	0.2 A	
	Load L/R < 40 ms	4 A / 1 A	0.2 A	0.1 A	
	Resistive Load				8 A
	Load p.f. > 0.3				5 A
Making Capacity	< 30 A for 200 ms				
Isolation of outputs from other isolated groups	Enhanced				
Relay Outputs O3 & O4 (O4 Not Used)					
Voltage	DC	24 / 48 V DC	127 V DC	250 V DC	
	AC (47.5–63 Hz)				100–240 V AC
Continuous Current		2 A	2 A	2 A	2 A
Breaking Capacity	Load L/R < 20 ms	2 A / 1 A	0.5 A	0.15 A	
	Load p.f. > 0.3				5 A
Isolation of Outputs from other Isolated Groups	Enhanced				
Power Supply					
Voltage	24–250 V DC, -20% / +10%			110–240 V AC, -20% / +10%	
				47.5–63 Hz	
Maximum Burden	6 W			9 VA	
Inrush Current	< 10 A for 10 ms			< 15 A for one half period	

Connection to Sepam Series 80

The MCS025 module can only be connected in the last position of a sequence of Sepam series 80 remote modules. Connect the MCS025 module at the end of the sequence with the included CCA785 cord.



Connector	Type	Reference	Wiring
A	Screw-type	CCA620	<p>Wiring with No Fittings:</p> <ul style="list-style-type: none"> One wire with a maximum cross-section of > AWG 24–12 (0.2–2.5 mm²) Two wires with cross-sections of >AWG 24–16 (0.2–1 mm²) Stripped length: 8–10 mm
B	Screw-type	CCT640	<p>Wiring with Fittings:</p> <p>Recommended wiring with Telemecanique fittings:</p> <ul style="list-style-type: none"> DZ5CE015D for one 1.5 mm² wire DZ5CE025D for one 2.5 mm² wire AZ5DE010D for two 1 mm² wires <p>Wire length: 8.2 mm Stripped length: 8 mm</p>
D	Orange RJ45 connector		<p>CCA785, special prefabricated cable supplied with the MCS025 module:</p> <ul style="list-style-type: none"> Orange RJ45 connector for connection to port D on the MCS025 module Black RJ45 connector for connection to the Sepam Series 80 base unit, either directly or via another remote module

Description

1. MCS025 module

A. CCA620 20-pin connector for:

- Auxiliary power supply
- 4 relay outputs:
 - O1, O2, O3: close enable
 - O4: not used

B. CCT640 connector (phase-to-neutral or phase-to-phase) for the two input voltages to be synchronized

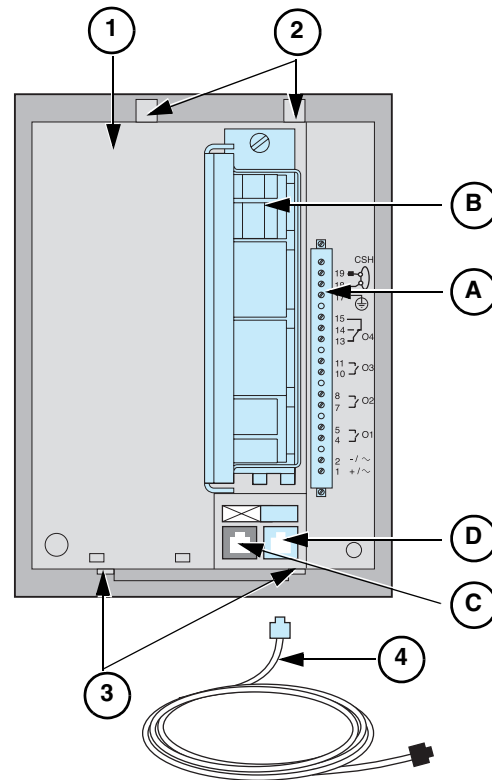
C. RJ45 connector, not used

D. RJ45 connector for module connection to the Sepam Series 80 base unit, either directly or via another remote module

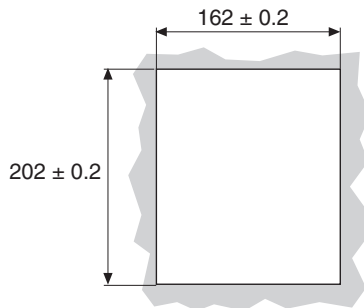
2. Two mounting clips

3. Two holding pins for the flush-mount position

4. CCA785 connection cord

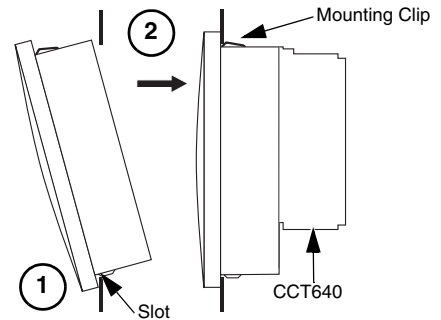


Mounting

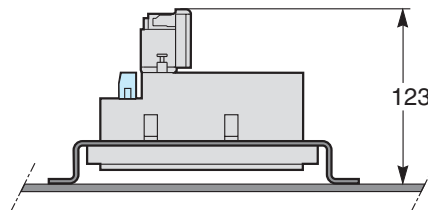
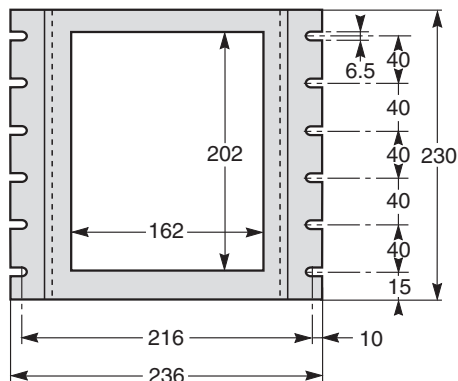


The MCS025 module can be flush-mounted and clamped, without requiring any additional screw type fastening.

1. Position the module as shown, ensure the metal plate is correctly seated in the groove at the bottom.
2. Tilt the module in as shown and press the top until it is held in place by the mounting clips.



The MCS025 module can be mounted at the back of the compartment using the AMT840 mounting plate (to be ordered separately).



Energizing

Figure 1: "Wrench" LED



The supply voltage must be between 24–250 V DC. After the MCS025 module is switched on, it performs the following initialization sequence, which takes approximately five seconds:

1. ON and "Wrench" LED (see Figure 1) illuminate
2. "Wrench" LED dims

At the end of the initialization sequence, the "Wrench" LED should be OFF.

Diagnosis

If the "Wrench" LED is still illuminated after the initialization sequence has completed, refer to the instructions below:

"Wrench" LED is Flashing

If the "Wrench" LED is flashing, then a minor fault has been detected and the MCS025 module is automatically put into downgraded operation mode.

- Check the connection of the module to the base unit via the orange RJ45 connector
- Confirm that the MSC025 module has been configured as a remote module of the base unit using the SFT2841 software

"Wrench" LED is Steadily Illuminated

If the "Wrench" LED is steadily illuminated, then a major fault has been detected and the MCS025 module is automatically put into fail-safe mode.

- Check the connection (DPC, detection of plugged connector function)

NOTE: If after performing the procedures above the "Wrench" LED is still illuminated, refer to the "Maintenance" chapter of the *Sepam™ Series 80 Installation Manual* (63230-216-229).

Parameter Setting with SFT2841

Set the MCS025 module parameters and sync-check functions with the SFT2841 software, in the same manner as other Sepam Series 80 relay parameter and protection settings.

NOTE: Do not connect the SFT2841 directly to the MCS025 module.

Operation

All operating data prepared by the MCS025 module — measurements, indications, and diagnosis — are available from the SFT2841 software in the same manner as all other Sepam Series 80 relay operating data.

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