



Service Bulletin

Bulletin No: SB-0034-20-167-SW Effective Date: 06-15-2020

Type: Installation

Subject: Mission Critical Energy Automatic Remote Stop-Switch (MCE-ARS)

Scope

This service bulletin describes the features and installation of the Mission Critical Energy Automatic Remote Stop-Switch (**MCE-ARS**).

Technician note: Read this instruction in its entirety prior to installation.

Background information

The purpose of a remote stop switch is to allow the user to remotely shut down a wind turbine based on environmental conditions. When combined with a FlexSCADA Q5 and a wind speed indicator (such as the Anemoment TriSonica™ Mini Wind and Weather Sensor) any wind turbine can be made fully autonomous, providing the user with peace of mind that the system will remain protected unsupervised during the harshest conditions. The Mission Critical Energy Automatic Remote Stop-Switch (**MCE-ARS**) builds on the success of the early versions of the SW35x-ARS, while improving on the design, functionality and stability of the device. While the new **MCE-ARS** may look similar to previous models, it is a complete redesign with survivability and integration as the key factors.

MCE-ARS specifications

The **MCE-ARS** remote stop switch (Figure 1) is designed to work with both 24VDC and 48VDC systems. System voltage is user selectable via a slide switch located at the bottom of the unit. The **MCE-ARS** features numerous improvements over the previous SW35x-ARS stop switch and provides a proven integration solution when combined with a FlexSCADA Q5 or Q5Pro. The main relay of the **MCE-ARS** is a solid-state unit designed to provide years of trouble-free operation. The **MCE-ARS** measures 4.5 inches long, 3.5 inches wide and 1.5 inches tall.

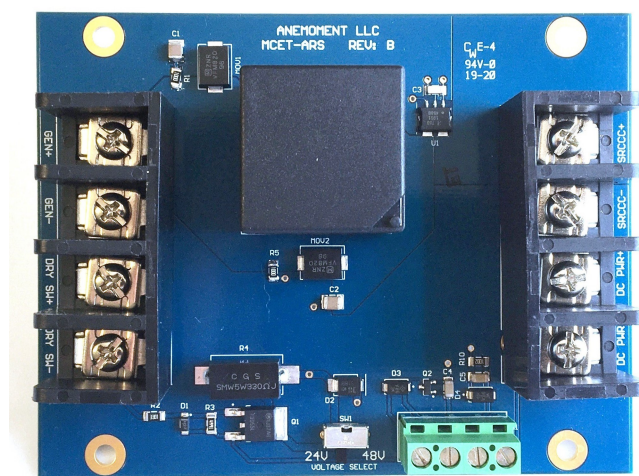


Figure 1

Installation

The **MCE-ARS** is designed to be inserted in-line between the Stop Switch and the system charge controller. Figure 2 shows a 24VDC system installation, while Figure 3 shows a 48VDC system installation. The Gen+/Gen- terminal lugs (located on the left side of the **MCE-ARS**) are for the

main inputs from the wind turbine. Connection to the charge controller is through the SRCCC+ and SRCCC- lugs. A fuse (based on the system voltage) must also be installed between the **MCE-ARS** and the charge controller as shown in figures 2 and 3.

Power is provided to the **MCE-ARS** via the DC PWR+ and DC PWR- lugs. Power (24 or 48 volts, based on the system selected) can be provided directly from a battery or a bus bar. Ensure that the system voltage slide switch is in the correct position (24V to the left, 48V to the right) prior to power connection or damage to the **MCE-ARS** can result.

The DRY SW+ and DRY SW- lugs are connected to an open relay channel on the FlexSCADA Q5 device. The second set of terminal blocks (located on the bottom of the **MCE-ARS**) allows for monitoring of the system via a FlexSCADA Q5. Connection to the 5.0V and RTN can be done through the low-power expansion ports. The VOUT(+) and RTN(-) is then connected to an open analog input channel. The amperage produced by the wind turbine will then be visible through the FlexSCADA webhost for the channel given, once configuration is complete.

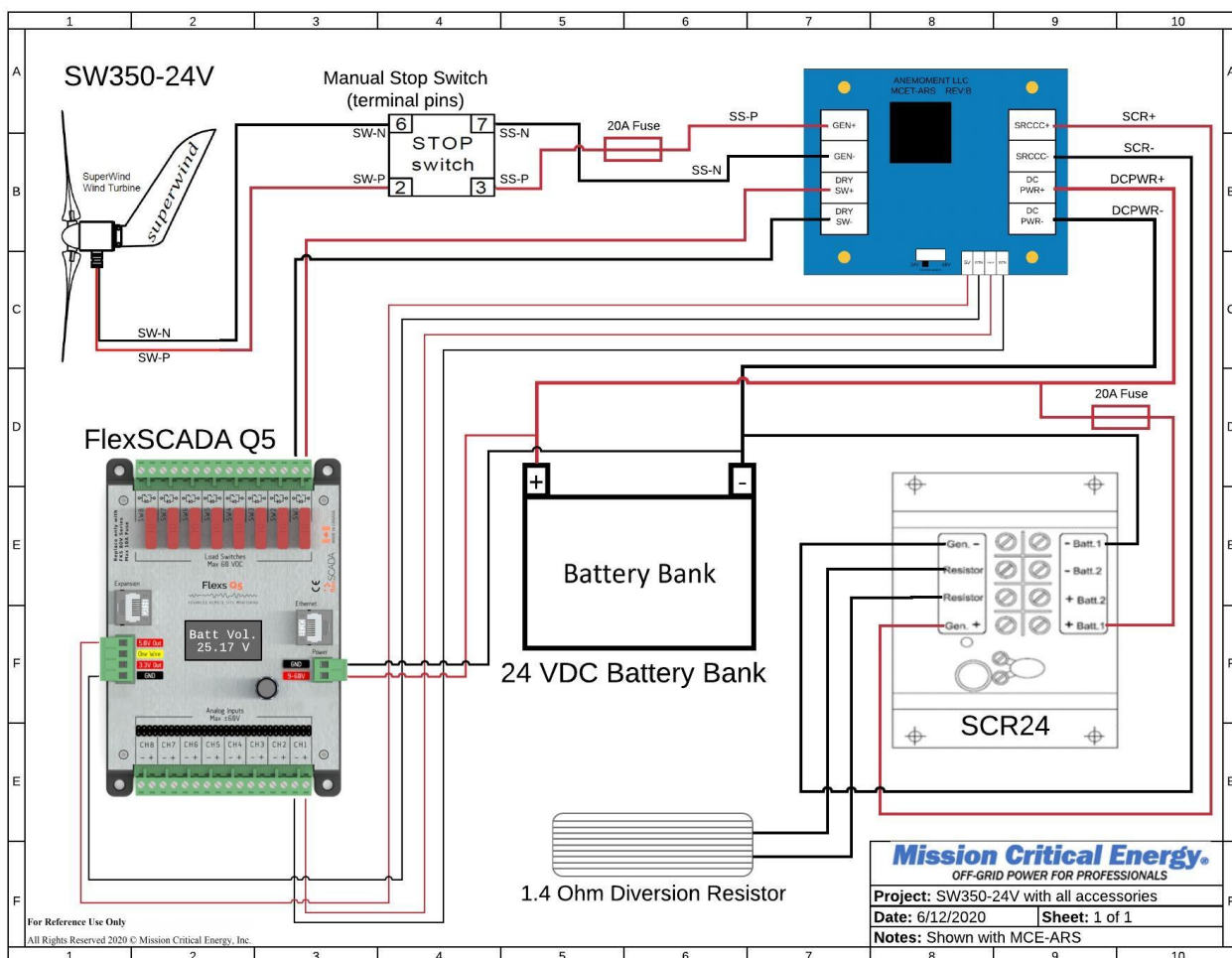


Figure 2

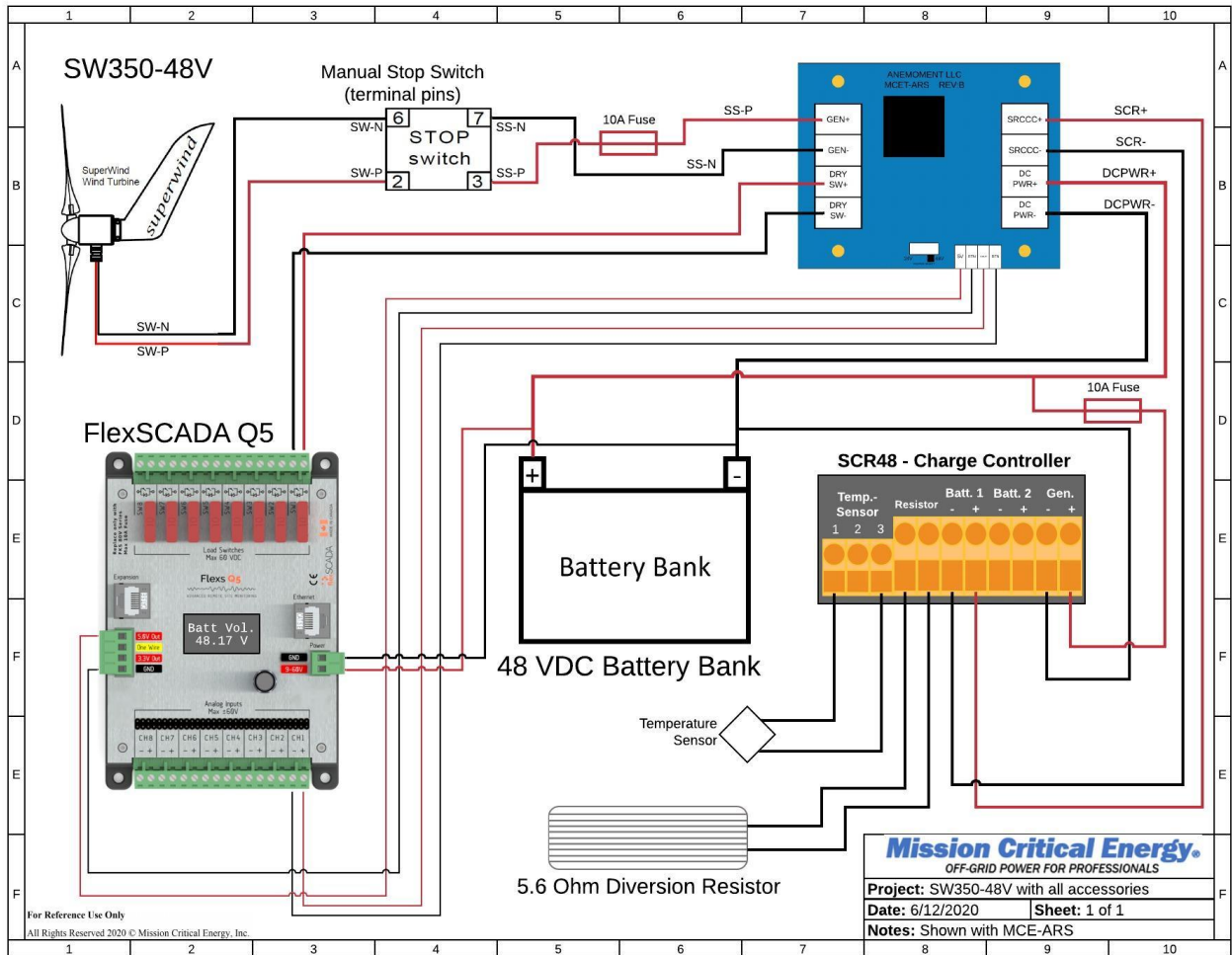


Figure 3

Configuration

Through javascript coding of the FlexSCADA device, the **MCE-ARS** ensures that a wind turbine can remain fully autonomous during extreme conditions. To configure the given channel for the **MCE-ARS**, open the FlexSCADA webhost interface. Once logged in, navigate to the analog input channel that the **MCE-ARS** is connected to and select "Enable" at the top of the given analog input channel page. Fill in the upper blocks with the information required by the user. For the input scaling page, the following information is required:

1. Voltage from sensor at Zero Output: 0.489 Volts
2. Voltage from sensor at Full Scale Output: 2.489 Volts
3. Reading from sensor at Zero: 0
4. Reading from sensor at Full Scale: 50 Volts

Note: These values will remain constant for every MCE-ARS unit.

If connecting the MCE-ARS through a power distribution board, please review service bulletin **SB-0035-20-216-SW (MCE-ARS power distribution board)** prior to installation.

For additional information or assistance, please contact Mission Critical Energy at (716) 276-8465 or visit us at www.missioncriticalenergy.com.