



EMS WatchDog PS-1 SSM Manual



ENVIRONMENTAL MONITOR SERVICE, INC.

POB 4340, Yalesville, CT 06492
Sales@emsct.com

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RCU Buttons

Button	Function
	The arrows move left, right, up, and down. They move display arrows or move to other pages.
	The ESC button moves you back from the current page to the previous page.
	Use the Enter or Return key when entering a variable. Press it, and the variable will change from steady to blinking. Enter the new value and follow the screen tip at the bottom to complete the operation.
	The info button is used for setting the PLC time, date, backup, SD card functions, etc. This is not used during regular operation. When required, this manual explains how to use these functions.
	Use the keypad to enter values.
	The +/- button is used when a minus (–) sign is required.

SSM Display Description

The Smart Service Module (SSM) is designed to give local information while at the transceiver. Information connects from the transceiver via RS-485 port 1, and to the RCU via RS-485 port 2. The SSM is used during:

- Normal maintenance
- Service
- Audits

Screen Side Panel

Each screen has a side panel:

- Modbus XRC, RCU OK or Not OK.
- Fault (F2) – Display of fault conditions.
- F1 Cal Span Initiate – when initiated, displays zero or span mode activated.

Normal Mode Of Operation

The display has four normal choices of values displayed:

- % Opacity
- mg/m3
- mg/m3 and O.D. (optical density).
- % Opacity, mg/m3 and O.D.



SSM Additional Operation

Transceiver Uncorrelated Output:

- Transceiver mA
- Transmittance
- % Opacity

Stack Exit Correlation Output from the RCU:

- Instant % Opacity
- Average % Opacity
- Mg (Dust)



F1

Pressing F1 initiates the zero and span cycle. The cycle runs Zero for 3 minutes, then Span for 3 minutes, and automatically returns to normal operation.

Manual operation allows you to force a cycle by pressing the F1 button additional times. Note: During the SSM zero/span F1 mode, a maintenance fault will be generated when the F1 calibration check is completed.

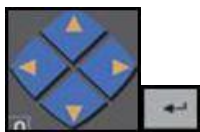
F2

Pressing F2 will bring up the Fault information page.

F1 to
Initiate
Cal Seq



About Pages



When power is first applied, press ESC to display the screen. Use the Up or Down Arrow to select the function of interest, then press Return/Enter.



Pressing UP or DOWN selects the EMS SSM Display, About, or Setup pages.



For the About page, scroll down to About and press the Down arrow button to enter the first About page. This will display the SSM and the RCU SDW # used for factory controller project numbers, and the transceiver micro version number.



Down arrow to About page 2 displays SSM S/N, Flange – Flange, Stack exit I.D., Path length I.D., and OPLR (Optical Path Length Ratio).



Routine Clear Path Zero Calibration

- A clear condition across the monitor path length is needed before adjustments can be made.
- Navigate to the setup screen. When asked for a password, enter 5566.



- Scroll down to “clear value, span value page” and press to input the clear value percentage.
- Once the desired clear stack value is entered, press F1 to store the value.



- The clear stack procedure is now complete.

ESC

- Press ESC to return to the main display screen.
- Note: It is common to need to adjust the calibration zero iris after a clear stack procedure is performed. Refer to the zero reflector adjustment procedure.

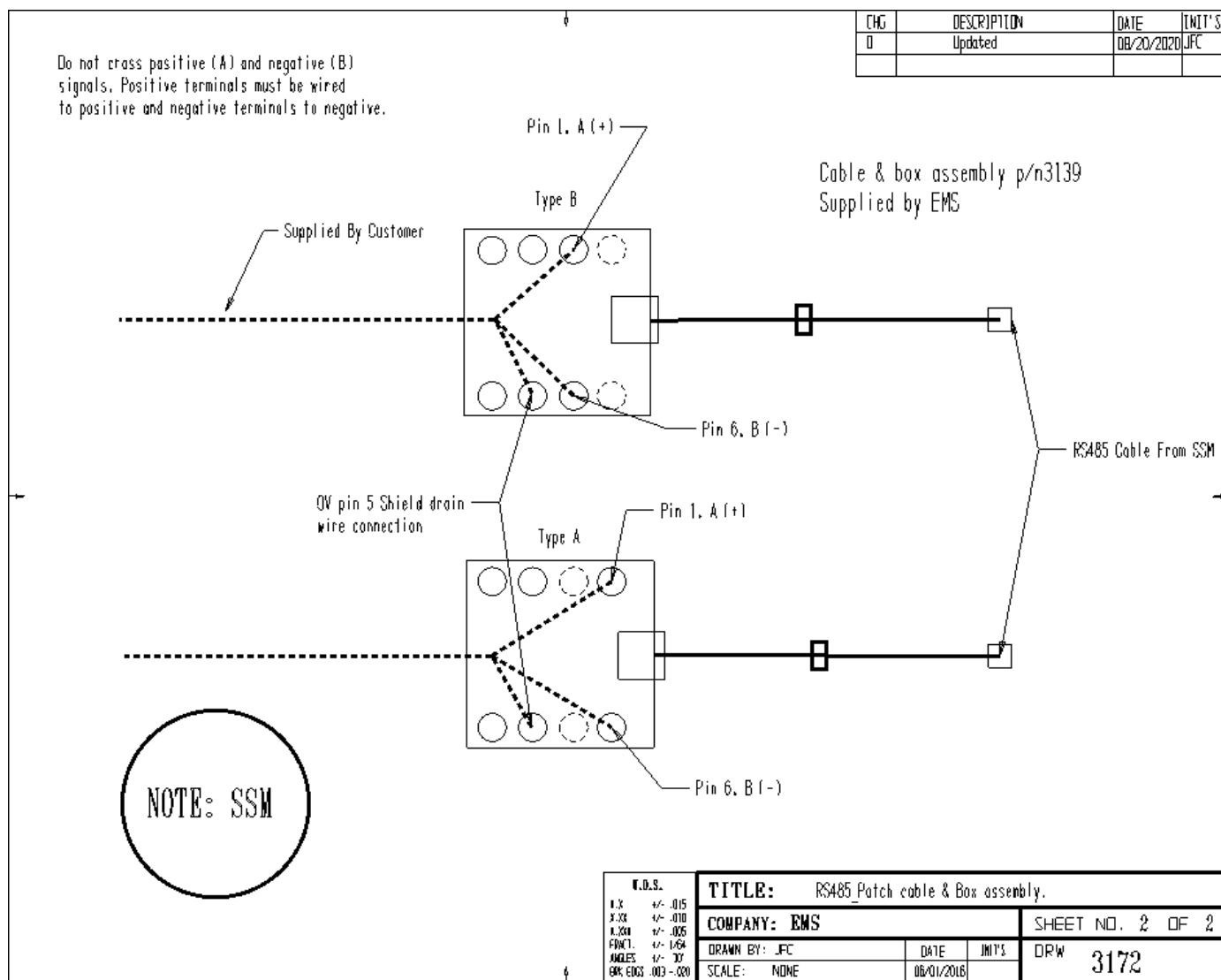


Environmental Monitor Service, Inc. is available to assist you. Call our service department at (203) 935-0102 or email techsupport@emsct.com for details and to schedule a start-up.

Connections

RS-485 Communications and Connection

RS-485 (Belden 89841 or equivalent) may be run up to 2000 feet in length.



Smart Service Module (SSM) Mounting

