

Instrument Security Procedures

Model

345

Product Name

Power Quality Clamp Meter

Instrument Description:

The Fluke 345 is a Clamp Meter for conducting energy studies and basic power quality logging.

Memory Description:

Depending on the hardware revision, the Fluke 345 has three or four memory devices – the latest design hosts an MPU with built-in flash memory.

- IC501 (ST Microelectronics ARM ST32F103ZET6) based: this MPU has internal memory that hosts bootloader code. Neither firmware nor logged data are contained in this memory section.
The previous design was based on Infineon C161 which has no internal memory.
- IC1001, SRAM 256k x 16, 55ns: ISSI IS62WV25616BLL-55TLI or pin- and function compatible devices. Volatile memory used to store the operating code and variables used at run time.
- IC1003, FLASH 2M x 8/1M x 16, 70ns: Spansion 29AL016J70TFI020 or pin- and function compatible devices. Non-volatile memory used to store the operating code, and to store saved screens and logged readings.
- IC601, I2C EEPROM 24LC32, 4k x 8: AT24C32CN-SH-T or pin- and function compatible devices. Non-volatile memory used to store calibration constants and configuration data.

Memory Cleaning Instructions:

The bootloader, as well as operating code, can be written into IC501 and IC1003, respectively, using a PC-based program “345/1735 Upgrade Tool V3.1”. After power on, the operating code stored in IC1003 is transferred into IC1001 and executed. When the instrument is turned off, the content of IC1001 is lost.

Calibration constants stored in IC601 can be read using a PC-based calibration program. The calibration constants are generated when the meter is sent through its calibration process and are fundamental to the meter operation.

The bootloader code in IC501/ARM can be modified using a PC-based program “345/1735 Upgrade Tool V3.1”. It is the first code that is executed at power-on and decides whether to

execute the code contained in IC1003 or to perform a firmware update. This code is fundamental to the meter operation.

To clear saved screens

1. Push the MENU key.
2. Push the ENTER key to select “View/Delete Screens”.
3. Press the Left Arrow key to erase all screens, followed by ENTER to confirm.

To clear logged memory

1. Move the rotary switch to ‘V’.
2. Push and hold the REC key until the logging settings menu is displayed.
3. Press the RUN key to proceed to logging memory settings.
4. Press the Left or Right Arrow key until Logging Area “1-2-3” is displayed, then RUN.
5. After the message “LOGGING” disappears, press the REC key and confirm the “Stop Logging?” message by pressing ENTER.

There will be at least one set of readings logged, but with open leads and no conductor enclosed by the clamp, these will not contain any useful or sensitive information.

Note

Removing the batteries will not clear the saved screens or logging memory.