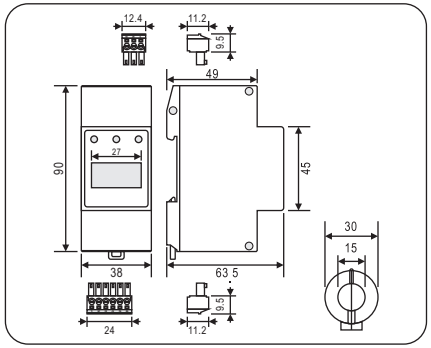
BlitzTrap® *Accessories* — Impulse Events Counter

IC 05 (RS485)

For RS485 remote
communication fuction
Impulse Counter
with 7-digits

Dimension diagram:



• Technical data

Type	**IC 05 (RS485)**
Art.-No.	**810 415**
Response behaviour of impulse current	> 1kA, rise time: 8-10ms
Sequence of impulse	> 1s
OLED display	7 digits (0 ~ 9999999); and Year/Month/Day
Time record of history	100 times record storage
Inductive line	1m long twisted-pair
Built-in power supply	3V battery, type: CR123A; cxchangeable
Service life of battery	> 2.5 years
Operating temperature range	-10°C...+50°C
Mounting on	35mm DIN rail
Enclosure material	Purple thermoplastic, UL94-V0
Dimension	2.2 mods (40mm)
Certification	CE (LVD, EMC); RoHS
External power supply input terminal	90V~255V AC; 50/60Hz
RS485 interface input terminal	RS485 and Modbus communication protocol
Type of remote signaling contact	Contact (connection SPD RM)
Switching capacity	AC :250V Ø 5A ; DC :250V Ø 2A ,125V Ø 2A ,75V Ø 5A
Cross-sectional area of remote signaling contact	Max. 1 5mm^2 solid flexible

• Product introduction

1. Summary

This product is used for counting the number of current discharge and time record of history by surge protective devices to earth.
The unit is also equipped with an RM (remote) input port, to detect any changes from the SPD RM terminal, and the maximum remote location, distance approx. 300m . this unit can also communicate via RS485, To transmit impulse counter record & Rm (remote) information.

2. Main character

- 2.2 standard module width (40mm)
- 0.96 inches, 128*64 resolution OLED display
- RM signaling connector for SPD fault indication
- With inductive twisted pair and inductive loop (feed through with the earthing cable of SPD)
- AC 220V power supply input terminal and built-in battery power supply are provided
- RS485 Modbus remote communication function

3. Application environment

- Temperature: -10°C ~ +50°C
- Relative humidity: ≤ 95% (25°C)

• Installation setting

1. Address dial-up switch:

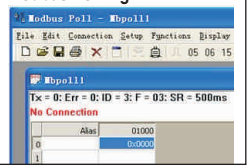
It includes 8-way address dial-up switches, count in binary mode, effective while turning on the location ON (Fig1). For example: Dialing No.1, 2 to the location ON, which indicates the impulse counter's hardware address cross refer address is 3 during access at RS485.

Note: Re-power to make the address operate after dialing, we propose to set the address mode well before the power test installation.

Dial-up Switch Fig 1.

The address dial-up switch at the bottom of SPD

Modbus Poll Fig 2.



2. RS485 communication function:

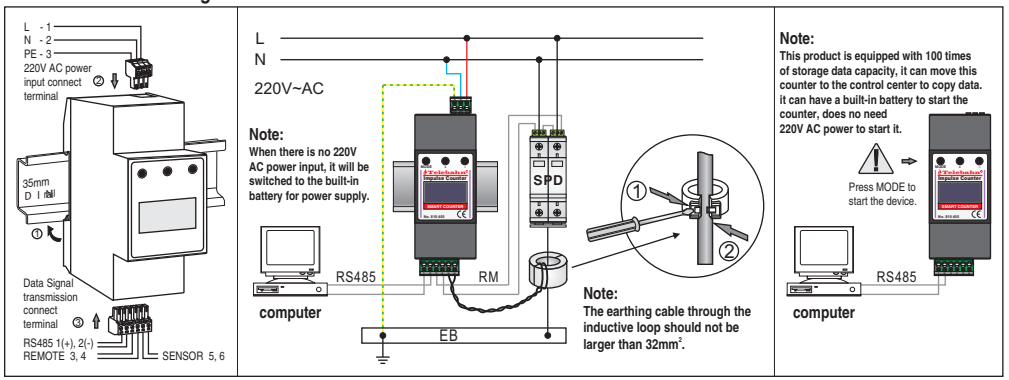
PC communication function, if there is a computer software which can support Modbus protocol, such as Modbus Poll (Fig.2), you can utilize this software to achieve the remote communication function. The address and data of the Modbus poll are stored in decimal format, pay attention to the hexadecimal conversion while setting address. The serial port computer and RS485 signal module (USB convert to RS485 is better) is required before operation, to protect the computer from lightning strike before communication.

(1). Choose the serial port: the serial port of the computer is used to convert to RS485 module, As an example of the windows XP system, my computer - hardware - devices processor - interface, check the currently occupying port No. of the telecom module, then set it into the computer software.
(2). Circuit connection: respectively wiring from the interface of the impulse counter marked RS485+/-, RS485+ connect with RS485A (RS485+), RS485- connect with RS485B (RS485-), when getting the count value, if data register address is 1000, it means that the value is stored in this address.

• Installation instruction

1. There is an insulated tieback that attached to the battery, pull the tieback "**Battery on PULL**" before installation to ensure the power supply works normally.
2. Open the attached inductive ring and hitch around the earthing wire, then fixed the SPD on the 35mm DIN rail. (As shown in the following diagram)
3. Fault resolution: When the screen display is blank, incomplete display, open the bottom cover, unplug the battery for 5 minutes and then re-install it back. Make sure to install the battery back with the correct polarity. This time, the screen should operate normally and do the reset testing setting.
4. Test setting instruction:
   (1). Normal display: year/month/date, hour/minute/second, number of times.
   (2). When in normal display status, press the button "**MODE**" to enter into setting mode.
   (3). After entering the setting mode, press the button "**MODE**" to change the digit that is to be set. During this time, that digit is flashing.
   (4). Cleared to zero, when the counting digit is flashing, press the button "**+**" in 3 seconds to clear to zero.
   (5). In normal display status, press the button "**-**" to enter into history counting mode, which can check time record for the recent 100 times. Press the button "**+**" to change to another display.
   (6). Power-saving mode, in display status, it will enter into power-saving mode if there in no operation in 6 to 10 seconds, press the button "**MODE**" to return to normal mode.

Counter installation diagram:



WARNING:

1. **The device must be installed by electrically skilled person, conforming to national standards and safety regulations.**
2. **It is recommended that installation should be done under power off condition.**