



STARKSTROM Ltd

RA003 Programmable Text Remote Alarm Annunciator (PTRAU)

Product description: -

A flush, surface or panel mounted unit, (see below photo for flush, surface and panel-mounted dimensions), the RA003 can interface with multiple IPS and UPS via a multi-drop RS485 connection and should be used when more than one IPS or UPS supply a single operating room or ward. The RA003 has the additional advantages of showing the user the exact location of a fault (i.e. "Bed 3, sockets 5 to10") and detailed UPS alarms. The unit also has an RS232/Modbus BMS interface.

Function: -

If any of the pre-set values are breached a buzzer is sounded which can be muted. The buzzer can re-sound every 20 minutes. Information and features include: Eight Line Text display with Alarm Logging of Date & Time of each event, IPS Insulation/Load/Temperature information, EDS alarms - location of circuit with insulation fault, UPS alarms - mains fail, bypass, ups on, battery fault and Modbus output to BMS allowing all information within the IPS/UPS system to be mapped into the BMS. The indicators on the display will not be reset until the fault has been cleared. A second fault will reactivate the audible alarm.

Feature & Benefits: -

Event logging of alarms includes date & time of each event and historical max/mins.

Benefits:

Removes guesswork of when a fault occurred, when it was cleared, etc. therefore improves faultfinding and maintenance

The specific radial circuit containing the earth-fault can be displayed i.e. "bed 3, sockets 5 to 10"

Benefits:

Clinical Staff can see at a glance where the fault is – without the need to go to the IPS panel to view the LED circuit indicators

Specific UPS text message alarms can be displayed i.e. "mains fail", "bypass", "ups not running", "battery fault".

Benefits:

Assists UPS fault-finding, helps reduce UPS down-time

A Modbus output to the BMS allowing all information within the Starkstrom IPS/UPS system can be mapped into the BMS. Benefits:

Removes the risk of clinical staff ignoring alarms, allows Estates Maintenance to determine nature of fault before entering operating room. The BMS can be used to keep historical records of faults therefore assisting in maintenance.



Dimensions of flush and surface mounted RA003:

250mmH x 170mmW x 70mmD

Dimensions of panel mounted RA003:

104H x 121W x 35mmD

BMS Modbus RTU (Decimal) Output:

Typical Slave Address: 01

Baud/Parity/Data/Stop/Comms: 9600/No/8/1/RS232

All registers are 16 bit. 31 registers in total, 00 to 30.

Register 00 contains the location of the insulation fault. i.e. a decimal value of 19 indicates that the insulation fault is on Isolated Power System 2, circuit 3. (19/16 gives an "argument" of 2 and a "modulus" of 3). The above calculation is based on the assumption of each IPS containing 16 outgoing ways.

The remaining registers 01 to 30 (all 16 bit, bit 0 to 15) give the status of each individual IPS/UPS system i.e. Register 05 contains the status of IPS 5 and (if applicable) its associated UPS.

UPS Alarms:

Bit 14: Battery Flat, Bit 13: Mains Failure Bit 12: UPS on bypass, Bit 11: UPS not running. IPS Alarms:

Bit 10: Transformer Over-temp, Bit 9: Transformer Over-current, Bit 8: Insulation Fault, Bit 7: Line or Earth wire missing.

IPS load/current level:

Bits 6,5,4,3: 1000=<20%, 0000=20%, 0001=40%, 0010=50%, 0011=60%, 0100=70%, 0101=80%, 0110=90%, 0111=100%. IPS Insulation level:

Bits 2,1,0: 000=<50KΩ, 001=50KΩ, 010=250KΩ, 011=450KΩ, 100=650KΩ, 101=850KΩ, 110=1000KΩ, 111=infinite KΩ.



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