Esprit Addressable BMS Network Card Instructions



This Manual Covers the Installation, Programming and Testing using Modbus Tester Software for the TPCA35 Network and BMS Card

INTRODUCTION

CE

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Model Number

ESA-3007

Haes Technologies Ltd declare that the products identified above conform to the essential requirements specified in the Construction Products Regulation CPR305/2011/EU.

In addition, the product complies with the following:

Low Voltage Directive 2014/35/EC,

IEC 62368-1: Safety of information technology equipment Electromagnetic Compatibility Directive 2014/30/EC

EN61000-6-3:2007 + A1:2011 Emissions, Class B

EN50130-4: 2011 +A1:2014 Immunity, Product Family Standard.

This product has been designed to comply with the requirement of the low voltage safety and the EMC directives. Failure to follow the instructions may compromise its adherence to this standard.

SAFETY

IMPORTANT NOTICE

PLEASE READ THIS MANUAL CAREFULLY BEFORE HANDLING THE EQUIPMENT AND OBSERVE ALL ADVICE GIVEN WITHIN IT.

THIS PARTICULARLY APPLIES TO THE PRECAUTIONS NECESSARY TO AVOID ELECTRO-STATIC DISCHARGE



Important Safety Notes

The panel is safe to operate provided it has been installed in compliance with the manufacturer's instructions and used in accordance with this manual.

Hazardous voltages are present inside the panel—DO NOT open it unless you are qualified and authorised to do so. There is no need to open the panel's enclosure except to carry out commissioning, maintenance and remedial work. This work must only be carried out by competent service personnel who are fully conversant with the contents of the panel's installation manual and have the necessary skills for maintaining this equipment.

The product must be installed, commissioned and maintained for operation, including periodic checks, in accordance with applicable codes of practice, national standard regulations and local instructions for fire systems appropriate to the country and location of the installation. It is the responsibility of the system user to ensure it is regularly serviced and maintained in good working order.

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Disclaimer

No responsibility can be accepted by the manufacturer or distributors of this fire alarm panel for any misinterpretation of an instruction or guidance note or for the compliance of the system as a whole. The manufacturer's policy is one of continuous improvement and we reserve the right to make changes to product specifications at our discretion and without prior notice. E & O E.

Warnings

	Before installation, refer to the Ratings shown on the label inside the product and to the 'Specifications Chart' in this document. If you are unclear on any point, please DO NOT proceed. Contact the manufacturer or supplier for clarification and guidance. Only Trained service personnel should undertake the Installation, Programming and Maintenance of this equipment.

Cautions

Equipment Guarantee

This product has been manufactured in conformance with the requirements of all applicable EU Council Directives and is not guaranteed unless the complete system is installed and commissioned in accordance with the laid down national standards by an approved and competent person or organisation.

This product has been designed to comply with the requirements of the Low Voltage Safety and the EMC Directives. Failure to follow the installation instructions may compromise its adherence to these standards.



Waste Electrical and Electronic Equipment Directive



THIS IS A PIECE OF CLASS I EQUIPMENT AND MUST BE EARTHED

Only trained, suitably skilled and technically competent service personnel should undertake the Installation, Programming and Maintenance of this equipment.

ESD Precaution

This particularly applies to the precautions necessary to avoid Electro-Static Discharge.



This equipment is constructed with static sensitive components. Wear an anti-static earth strap connected to panel enclosure's earth point. Before installing or removing any printed circuit boards, or connecting cables, remove all sources of power (mains and battery).

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INSTALLATION

Safety

This product should be installed, commissioned and maintained by, or under the supervision of, competent persons according to good engineering practice and,

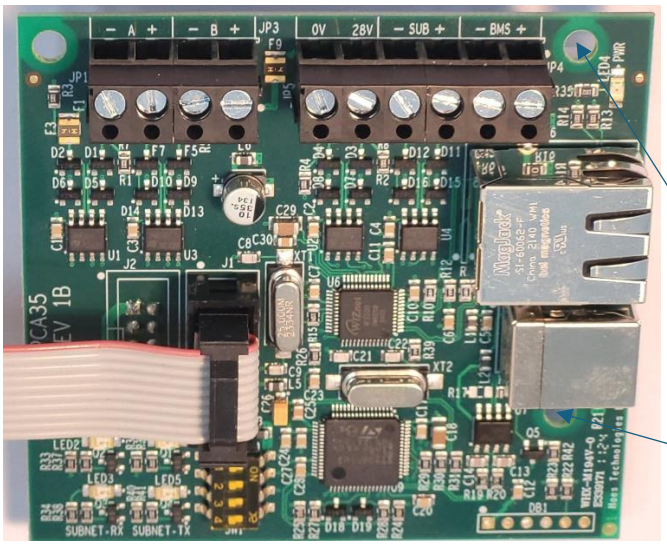
i. Local codes of practice
ii. Statutory requirements and national standard regulations for fire systems appropriate to the country and location of the installation.
iii. Any instructions specifically advised by the manufacturer.

You are requested to take such steps as are necessary to ensure that any appropriate information about this product is made available by you to anyone concerned with its use.

Further copies of this User Instruction Manual are available from the

Installing the Network Card.

PCA35 BMS Network Card Installation



Attach with 4X Spacers provided

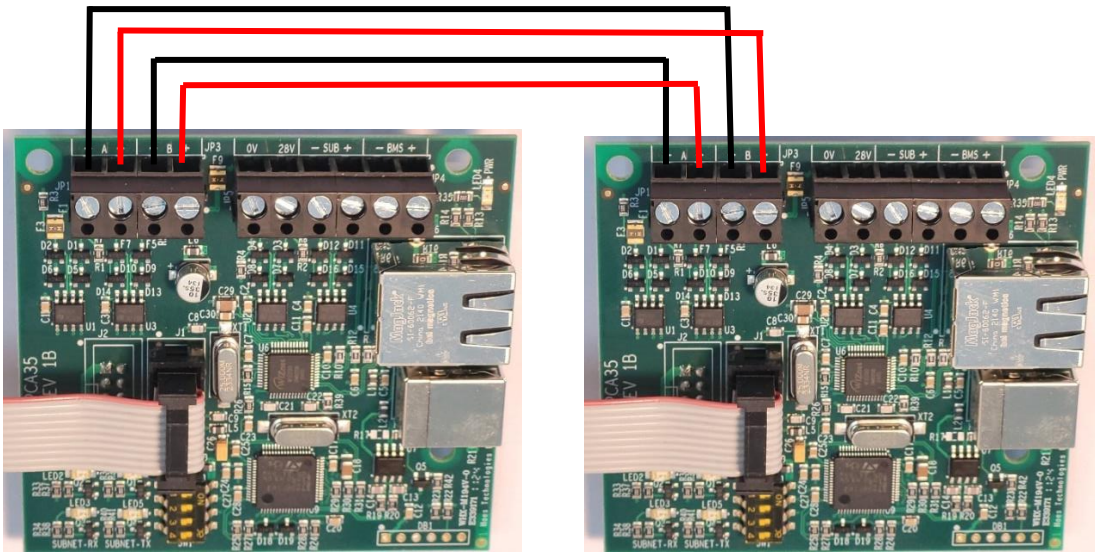
- Ensure the mains power is switched off and batteries are disconnected
- Remove the ribbon cable connector from the socket “COMMS A” located on the middle, left side of the PSU (TPCA35) card.
- Fit the TPCA35 BMS network card into the “COMMS A” socket on the PSU card and support the card using the four supplied nylon pillars.
- Reconnect the ribbon cable connector into the socket on the TPCA35 BMS Network card.
- Set the address DIL switches to the required value.
- Address 0 = Master panel.
- Addresses 1 to 7 = Slave panels.
- Addresses 8 to 15 = Repeaters.
- Power up the panel and execute the LEARN procedure to add the BMS network card to the panel configuration.

Network Wiring Options

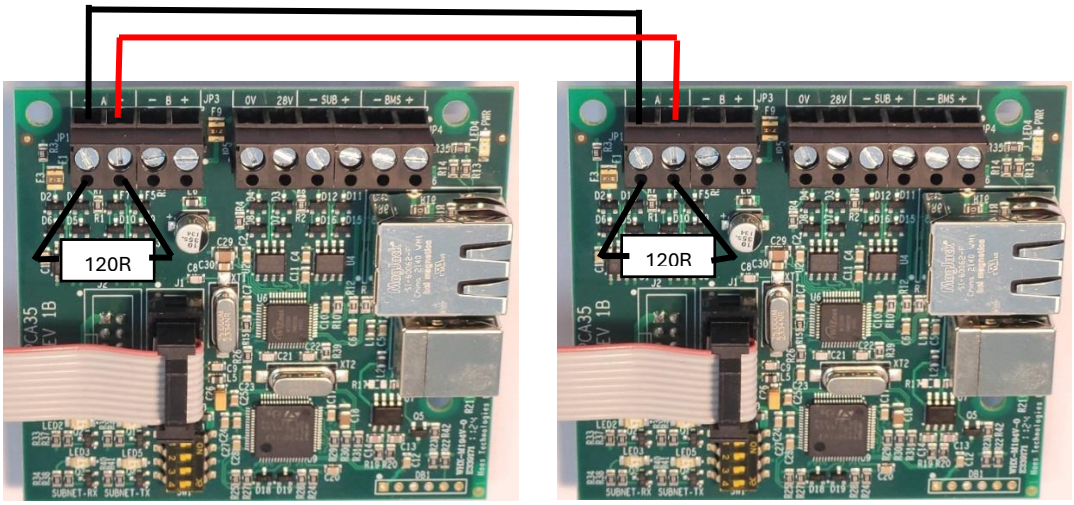
Fault tolerant & legacy wired networks

- Fault tolerant connections will require 2 x 2 core fire rated cables.
- Fault tolerant connections are wired from ‘coms A’ positive & negative terminals on the master panel to the ‘coms B’ positive & negative terminals on next slave / repeater etc. The last panel connections will be from the ‘coms A’ positive & negative terminals back to the ‘coms B’ positive & negative terminals on the master panel in a loop configuration.
- Legacy mode connection requires a single 2 core fire rated cable.
- Legacy mode connections positive & negative terminals to ‘coms A’ positive & negative terminals on next slave / repeater.
- Legacy mode networks should have 120 ohm termination resistors fitted to both ends of the network as per the diagram.

Fault Tolerant Network Wiring.



Legacy Network Wiring



Network Programming

- Step 1 – select ‘config’ menu
- Step 2 – access code is 3333
- Step 3 – select ‘learn’ option
- Step 4 – The system will now perform the learn routine and will display the presence of the newly fitted network card and any network panels / repeaters found.
- Step 5 – Press the ‘return’ button to accept.

HAES BMS (Modbus Protocol)

The BMS connections support an RS485 network to a Building Management System at 3.3V signal levels. Single as well as multiple register reads are supported. The register data in the response message has a size of 16 bits with the LSB as the first bit. The baud rate is fixed at 19200 with no parity and the Modbus network address defaults to 70.

a) Function codes supported:
   - 4 Read Input Registers

b) Register Map
   - **System Status Register**:

     Address 1

     - Alarm (1st bit)
     - Fault (2nd bit)
     - Disablements Active (3rd bit)
     - Test Mode Activated (4th bit)
     - Evacuation (5th bit)

   - **Panels Status Registers** (1 register for each of 64 panels):

     Address 256 – 319

     - Alarm (1st bit)
     - Fault (2nd bit)
     - Disablements Active (3rd bit)
     - Test Mode Activated (4th bit)
     - Evacuation (5th bit)
     - Alarm Silenced (6th bit)
     - Buzzer Muted (7th bit)
     - Class Change Active (8th bit)
     - Alert Active (9th bit)

- **Zone Status Registers** (8 registers for each of 64 panels):

  Address 512 – 1023

  - Each bit indicates the alarm status of a single zone of a single panel.

e.g. Address 512 indicates the first 16 zones of panel 1 (LSB = zone 1).
Address 516 indicates zones 64 to 79 of panel 1 (LSB = zone 64).
Address 520 indicates the first 16 zones of panel 2 (LSB = zone 1).


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