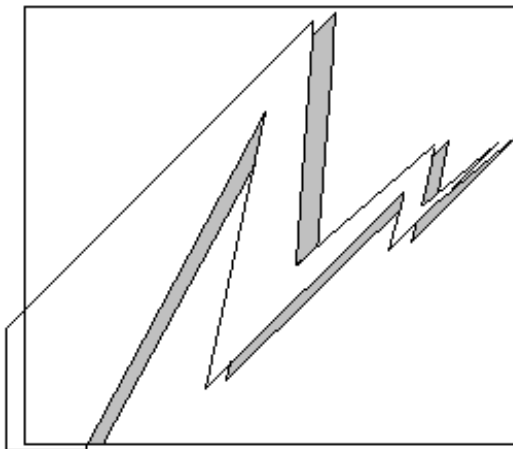


P2266 BMS INTERFACE



USER MANUAL FOR OPERATING SYSTEM 21823-01

October 2009

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1 Introduction

P2266 INTRODUCTION

The P2266 BMS Interface is designed to monitor up to 200 networked inputs. Networked input information is obtained from other panels connected to the network

Output is via relay contacts or RS232 serial communications. RS422 serial communications is yet to be implemented.

Each networked input can be programmed to have any number of relay outputs or serial codes assigned to it which will be activated when the input is in the alarm condition. The relay outputs operate in such a way so that if power is lost to the unit, the relays become active, indicating that there is a problem.

The serial communications work by a simple handshaking routine, with the main BMS system sending a "Get" code to the P2266, which responds by sending the alarm details of each input that has been programmed into it. The P2266 then finalises the transaction with an "End" code. Each input can have an ON code (for when the input is in alarm) and an OFF code (for when the input is normal).

Network connection is made directly to the main electronics via an eight-way telephone style plug.

Relay output is made by a set of terminal blocks. Each relay has a designated number from 1 to 30 and has a normally open contact, a normally closed contact, and a common. Relays #31 and #32 are used to indicate hardware and network errors.

RS232 serial communications is made via a four-way telephone style plug. The connector is marked as "BMS RS232".

RS422 serial communications is made via terminal block marked as "BMS RS422". Please note that this function has not yet been implemented.

If networking is not required, it can be disabled by removing a plug in link on the main PCB, the unit then relies on input gathering from the RS232 serial communications or RS422 serial communications. Please note that this function is not yet implemented.

All P2266 programming is done via a four way RS232 plug and socket that couples it to a computer. This feature permits full custom set up of the IO Sets. The connector for this function is marked as "PANEL/SETUP"

2 Unit Description

MAIN ELECTRONICS

The main electronics PCB is mounted in a strong weatherproof wall unit with a lockable front door. Wiring to the unit can be made by feeding the connections through a slot in the bottom of the unit.

ALARM RELAYS

The relays are used to signal the main BMS system via a set of contacts. Relay 1 is at the top left. Each relay has its own LED to signal the status of the relay. When the LED is on, the relay is operating the normally closed contacts (marked N/C). The presence of an alarm condition causes the relay to operate the normally open contacts (marked N/O) and the LED turns off. Connection to each relay is via a three way terminal block consisting of N/C, N/O, and COM contacts.

STATUS RELAYS

Relay #31 and relay #32 are used to indicate an error within the P2266. Relay #31, when activated, indicates that there is a hardware problem with the P2266 and servicing is required. Relay #32 indicates that there is a network problem and that the unit is not receiving information via the network. Check the network wiring.

POWER CONNECTOR

Power is supplied to the unit with a 12VAC-plug pack, which can deliver up to 1200mA of current. Connection is made via a two way terminal block located at the bottom of the PCB. The power is fused with a 1Amp 3AG fuse.

PUSHBUTTONS

There are two pushbuttons, Test and Service.

The Test pushbutton initiates a test cycle that operates each relay (including the error indicator relays) for a period of 3 seconds each. Pressing the Test pushbutton a second time during the test routine will cancel the test.

The Service pushbutton is used when “binding” the P2266 BMS Interface unit into the network. See the APM software manual for more information about setting up the network

LED's

There are two LED's that are independent of the relays. These are Power and Service.

The Power LED indicates that the unit is correctly regulating the incoming 12VAC.

The Service LED is used in conjunction with the Service pushbutton when "binding" the P2266 to the network. The following is a list of states for the Service LED:

1. If the LED is on all the time, then there is a hardware problem and the P2266 should be send back for servicing.
2. If the LED blinks on then off every 3-6 seconds then there is a communications error between the hardware and the P2266 should be sent back for servicing.
3. If the LED cycles on for 1-2 seconds and then off for 1-2 seconds then the P2266 is ready to be "bound" into the network.
4. If the LED blinks on at power up and then stays off, the P226 network hardware is working and the P2266 has been correctly "bound" into the network.

RS232 SERIAL PORT SOCKET (PANEL/SETUP)

The RS232 connection is made via a 4-way socket on the left side of the unit, (see fig 5 below). When connected to a computer running "APM" software supplied by Associated Controls, the operator can configure the P2266 as required.

RS232 SERIAL PORT SOCKET (BMS RS232)

This RS232 socket serves as the output socket for connection to a BMS should it be required. The P2266 has to be configured at setup to perform as a BMS interface.

Each panel outputs its alarm status onto the network whenever there is a change to any of its input conditions. This is when any input changes from alarm to non-alarm or non-alarm to alarm, or every 20 sec as a system heart beat. This information is received by the P2266 being used as the BMS interface and redirected to the RS232 port.

The serial BMS works in the following manner: -

- 1 The BMS sends a "Get" code to the P2266.
- 2 The P2266 responds by sending any information it has been programmed with back to the BMS.
- 3 The P2266 then finalises the transaction by sending an "End" code.

The "Get" and "End" codes can be any string of text up to 20 characters in length.

The alarm information must consist of an "alarm on" and an "alarm off" string of text that can be of up to 15 characters in length.

IMPORTANT!

The output from the RS232 has limitations on the distance that it can be transmitted, approx. 10 metres.

RS422 SERIAL PORT SOCKET (BMS RS422)

The RS422 serial mode is the same as the BMS RS232 except that it allows a longer distance for communications. This function has not been implemented but will be incorporated upon high demand.

NETWORK SOCKET

The network connection is made via either one of two 8-way sockets on the left hand of the unit, (see Fig 5 below). Two sockets are provided, should a "daisy chain" wiring configuration be required. The system wiring can be of any configuration as shown if Fig 1 to 4 below, however there are limits on the cable length. The maximum total wire length in the installation is 450 metres and the maximum distance between any node to any node, or a termination is 250 metres.

The cable length figures above apply to a category 5 utp solid twisted pair cable. Only two of the eight ways of the network socket are used at this stage, (see specifications for pinouts) eight way is provided for future expansion.

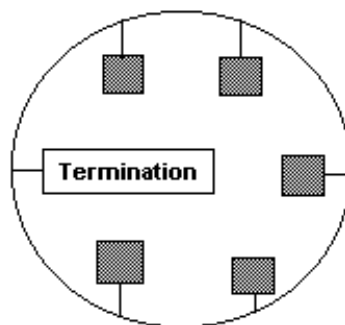


Figure 1: Loop Topology

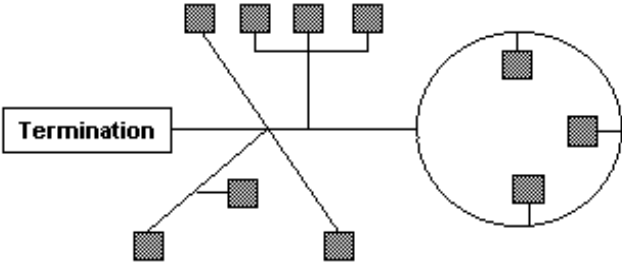


Figure 2: Mixed Topology

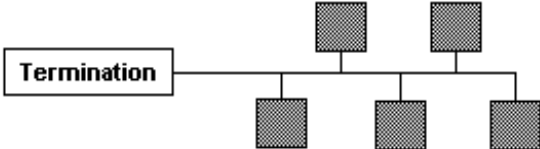


Figure 3: Single Terminated Bus Topology

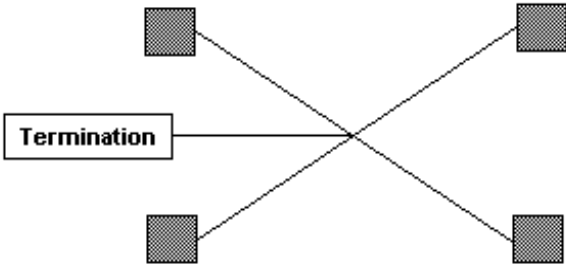


Figure 4: Star Topology

NETWORK TERMINATION LINKS

While the network system used by the P2266 is of a “Free Topology” nature, it still requires one termination on the network. It is not critical where the termination should be, so long as it is there. Each panel has the ability to provide the termination, only one on the network is required. There are 2 link blocks beside the 8 way network sockets to the left of the unit. They are marked as “TERM.” and “TYPE S/D”. To provide termination both links should be installed, both should be left out if termination is not required.

NETWORK SELECT/DESELECT LINK

A network select link is provided on the right hand side of the main board labeled as “NET SELECT”. The P2266 has not yet been programmed to operate without the network as the main supply of alarm information. This jumper should not be removed.

SOCKET POSITION DETAIL

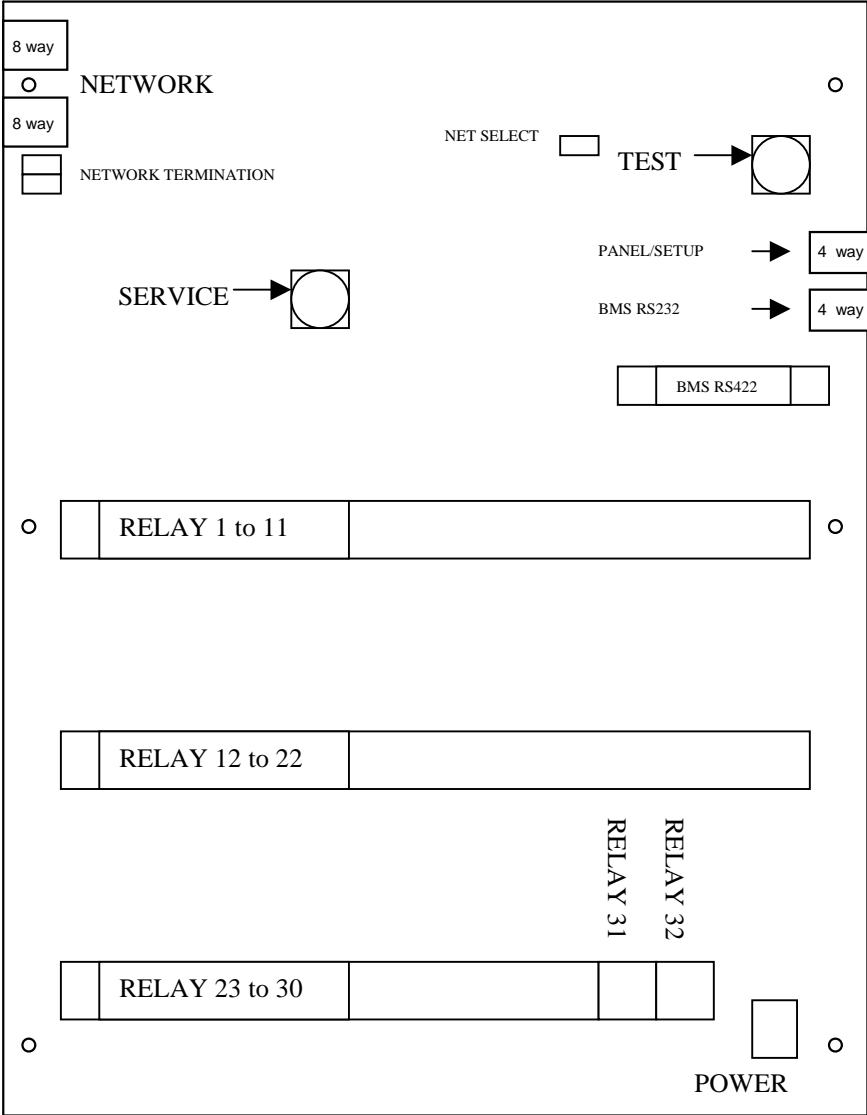


Figure 5

3 Unit Operation

UNIT SET UP - Installer Accessible Only

The P2266 is configured at installation using “APM” (Alarm Panel Management) software supplied by Associated Controls. The “APM” software is run on a suitable computer connected to the P2266 BMS Interface via the RS232 (PANEL/SETUP) socket.

The “APM” software has its own User Manual giving detailed instruction on its use. A summary only of the features will be given here.

The “APM” software has two sections.

1) File Generation Mode

File generation is the first step in setting up a P2266 BMS Interface. It contains all the IO set information. It also contains a unique unit ID number and identification message. The computer need not be connected to the P2266 at this stage.

The file that is generated is formatted in Hexadecimal ASCII code and is saved with in a specific format. While it is possible to open the files using a text editor, it is not recommended that any changes be made to it as this will corrupt the data.

This file can be downloaded to a P2266 BMS Interface using the second section “monitor mode”. No further panel setup is required if the file information is correct.

2) Monitor Mode

The Monitor Mode is used to communicate with the P2266; the computer must be connected to the P2266 when using this section.

The functions provided in monitor mode are as follows: -

Download

Used to send a file generated under “File Generation” to the P2266 BMS Interface.

Upload

Used to receive a file from the P2266 BMS Interface to the computer.

Display Setup

Will display the current setup information: -

Product Code
Software Version
Software Date
Unit ID
Unit Message ID
Number of Relay Outputs
Number of RS232 Outputs
Number of RS422 Outputs
Number of Networked Panels
Get Code
End Code

Display Messages

Will display all the programmed messages. (This function not yet implemented).

4 Specifications

SPECIFICATIONS

Power Consumption

Operating Voltage 12 Volts AC +/- 10%
(15Vdc Plugpack Supplied)

Current Consumption 0.25 Amps

Power Consumption 3 Watts

Environmental Conditions

Operating Temperature Range 0 - 45 Deg C

Operating Humidity Range 95% R.H. non-condensing

Relay Output

Alarm relay contact rating 1A @ 30V DC

Serial Output Format

1200 Baud, 8 Bit, 1 Stop, No Parity

Network Information

Cable Type Category 5 UTP solid

Cable Length

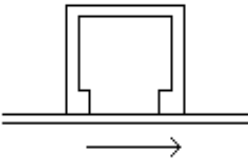
Maximum total length in system 450 metres

Maximum length (node to node or termination) 250 metres

Network Frequency 78 kbps

Maximum Number Of Nodes 30

Socket Connections



Pin numbering runs left to right

Figure 6

Figure 6 numbering applies to both the 4 way RS232 sockets and 8 way Network sockets

RS232 4 Way

<u>Pin No.</u>	<u>Function</u>
1	Common (Ground)
2	N/C
3	TXD (Data Out)
4	RXD (Data In)

Network 8 Way

<u>Pin No.</u>	<u>Function</u>
1	N/C
2	N/C
3	N/C
4	N/C
5	N/C
6	N/C
7	Network
8	Network