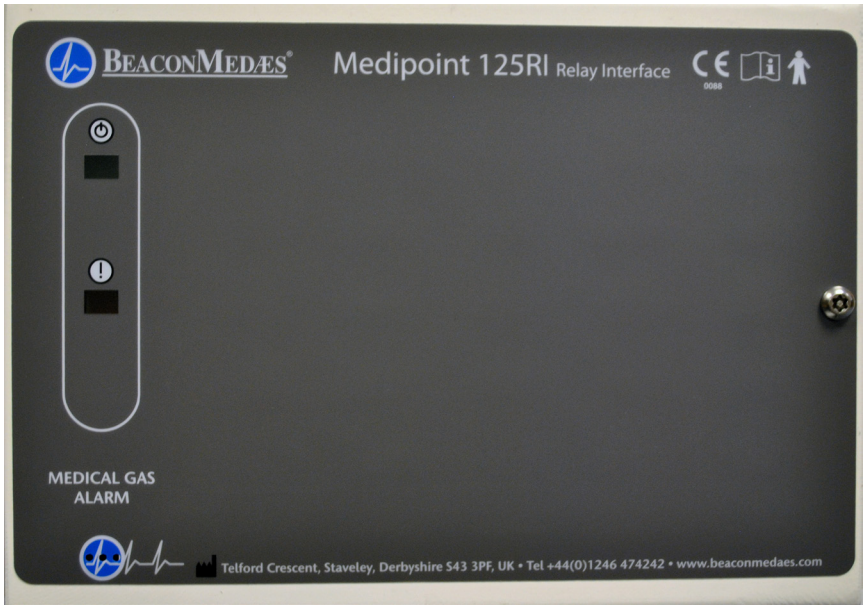
Operation and Maintenance Instructions



Medipoint 125 Alarm System

Relay Interface Panel MK2

Part number 2005202

Revision 04

Feb 08, 2017

BeaconMedæs®

Operation and Maintenance Manual

Relay Interface Panel MK2 - Medipoint 125 Alarm System

This unit is purchased from:

Date purchased:

Model number:

Serial number:

Option(s) included:

Any information, service or spare parts requests should include the serial number and be directed to:

BeaconMedæs
Telford Crescent, Staveley
Derbyshire S43 3PF

Telephone: +44 (0) 1246 474242
Email: gbn.info@beaconmedaes.com
Website Contacts: www.beaconmedaes.com

BeaconMedæs reserves the right to make changes and improvements to update products sold previously without notice or obligation.

Atlas Copco Ltd. trading as Atlas Copco Medical
Unit 18 Nuffield Way, Abingdon, Oxfordshire, UK OX14 1RL

Personnel must make themselves familiar with the contents of this manual and the function of the unit before installing, operating or maintaining.

Abbreviations			
Abbreviation	Full Description	Abbreviation	Full Description
BS	British Standard	kPa	Kilo pascals
BSP	British Standard Pipe	Max	Maximum
CO2	Carbon dioxide	Med	Medical
°C	Degree Celsius	m	Meter
ø	Diameter	mm	Millimetres
ERM	Emergency reserve manifold	Min	Minimum
EN	European Standards	N2	Nitrogen
1st	First	N2O	Nitrous oxide
HTM	Health Technical Memorandum	NRV	Non-return valve
ID	Identification	OD	Outside Diameter
“	Inch	O2	Oxygen
ISO	International Standard Organisation	%	Percentage
Kg	Kilograms	2nd	Second

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0. Safety, Storage and Handling Data

0.1 The following symbols apply to this product and are used in these instructions and on the product in question. The meanings of these symbols are as specified below: -

	Read instructions
	Warning - dangerous voltage
	Ambient temperature range
	Ambient humidity range
	Ambient pressure range
	Date of manufacture
	Caution - system alarm
	Power on
	Protective earth
	Alternating current
	Static sensitive components
	Do not dispose of in general waste
	Audible warning

0.2 Environmental Transport and Storage Conditions & Operating Conditions

Min ambient temperature - 0 degrees Celsius
Max ambient temperature - 40 degrees Celsius
Min relative humidity (non-condensing) - 10%
Max relative humidity (non-condensing) - 95%
Atmospheric pressure range - 70-110 kPa

0.3 Cleaning

The alarm cover and fascia should be wiped over with a damp cloth frequently to remove any dust or foreign substances.

0.4 Environmental Protection

Discard the unit and/or components in any standard refuse facility. The unit does not contain any hazardous substances.

0.5 Electromagnetic Interference

Ensure any input and data cables are physically separated from other mains and data cables.

0.6 Electrical Details

WARNING... It is necessary to check the integrity of the power source for safety at regular intervals. These checks should be carried out annually and replacement power supplies used is necessary.

Power source

Mains operated using 110/230V, 50/60Hz, alternating current, from an essential circuit. Please see labelling inside unit for correct voltage.

Current requirements

3.0 amps

Type of protection against electric shock

Class 1 (Mains supplied equipment using a protected earth)

Mode of operation

Continuous (equipment may be left switched on indefinitely)

Degree of protection against ingress of liquids

IPX0 (Not protected)

Degree of mobility

Permanently installed (This unit is electrically connected by permanent means)

Degree of protection

Type B (no Applied Part or with and Applied Part not designed to meet F type (floating) requirements)

Degree of protection against flammable anaesthetic mixtures

Not protected (not suitable for use with flammable gases)

Rechargeable Battery

The rechargeable battery (ref. 1828825) should be replaced every 5 years.

1. DESCRIPTION AND OPERATION

1.1 Introduction

The MP125 Relay Interface has been designed to complement the MP125 Alarm. It allows alarm conditions to be presented as normally open relay contacts to an external system, such as a BMS or auto-dialler.

The MP125 Relay Interface fits into the same enclosure as a normal MP125 alarm, and the configuration is very similar.

2 INSTALLATION

2.1 First Fix

The first fix back box (part number 1826561) should be installed in the appropriate place, and the power supply cables, data cables and relay output cables should be run to the enclosure using appropriate cables and conduit.

⚠ WARNING... BEFORE CARRYING OUT ANY WORK, ENSURE THAT THE POWER SUPPLY IS OFF AND CORRECTLY ISOLATED. THE ELECTRICAL POWER SUPPLIES MUST BE CONNECTED BY A QUALIFIED ELECTRICIAN. ALL WIRING MUST BE IN ACCORDANCE WITH CURRENT IET WIRING REGULATIONS.

⚠ WARNING...ENSURE THAT ADEQUATE PRECAUTIONS ARE TAKEN WHEN HANDLING PCBS, BOTH FOR PHYSICAL DAMAGE AND STATIC DISCHARGE.

Connect the mains cable to an un-switched fused connection unit fused at 3 amps.

2.2 Second Fix

Once the second fix is to be installed, install the Power PCB into the back box using the spacers, nuts and washers provided. Connect the cables to the PCB. Wiring diagrams are provided in section 4.1

Ensure that the A and B wires are not transposed, and that the connections to the relay contacts are correct. The mains cover should be carefully re-fitted after

installation of the mains cable.

Fit the door/relay board assembly to the back box using the screws provided, and connect the two ribbon cables to the power PCB.

3 CONFIGURATION AND OPERATION

3.1 Configuration

The MP125 Relay Interface has 6 rotary switches. These function as follows:

SW1 – Channel 1 gas number (0 is OFF)
SW2 – Channel 2 gas number (0 is OFF)
SW3 – Channel 3 gas number (0 is OFF)
SW4 – Channel 4 gas number (0 is OFF)
SW5 – Channel 5 gas number (0 is OFF)
SW7 – Panel ID

There are also 2 DIP switches on SW6.

SW6:1 is MSID, and when "ON" adds 16 to the ID number of SW7.

SW6:2 is not implemented on the MP125 Relay Interface MKII.

Rotate the switches to the required position, and reset the relay interface using the "RESET" button on the PCB.

If everything is correctly connected the red 'RX' LED should start flashing, indicating the correct reception of data. The green 'HB' LED should also start flashing, indicating the system is healthy.

The relay contacts will switch to indicate the current status of the configured gas channels.

3.2 Operation

There are no specific operational policies required for the MP125 Relay Interface. It is designed to be installed permanently and will operate without user intervention.

If necessary, the front fascia can be cleaned with a damp cloth, with mild detergent if required.

3.3 Troubleshooting

The MP125 Relay Interface has been designed for trouble-free operation. Most problems encountered are caused by incorrect cable types, or poor termination of cables.

In the event of a fault, reset the internal software by pressing the "reset" button on the PCB and check for normal operation. A reset may also be required after an extended power outage when the battery has discharged.

The HB LED on the PCB will give an indication of the state of the internal software and hardware. Under normal operation, the LED should flash once per second, with an equal on/off time (50% duty cycle). If the processor has detected a power failure, the LED will flash at a 10% duty cycle. If the LED is permanently on or off, a problem is indicated with the power supply or software.

There are a number of test points that can be used in conjunction with a multimeter to check the power supply voltages. These are detailed in the table below:

Test Point	Voltage (reference point)
3	2.5 volts (TP8)
4	5.0 volts (TP8)
5	5.0 volts (TP8)
6	15 volts (TP8)
7	15-20 volts (TP8)
8	0 volts (main)
9	5 volts (TP10)
10	0 Volts (comms)

Table 1 - Test Point Data

If the voltages in the table are not present at the test points, then a faulty PCB is indicated. Check the two low side fuses F2 (1A) for TP's 1-7, and F3 (500mA) for TP10, and the high side fuse F1 (1A). Also check the fuse in the fused spur supplying the alarm, and any other upstream protection devices.

If the voltages are correct and the HB LED is still not indicating correctly, the software installed in the processor chip may need updating. Contact Staveley for more information on this procedure.

A replacement power PCB is available under part number 2005201 (230V)

If an individual condition is showing a fault instead of a normal condition, the relay on the relay board may be faulty. Exchange with a relay on an unused column, or purchase a replacement relay.

Relays are Hamlin part number HE751A2410 and are available from Farnell Electronic Components, stock number 9561854.

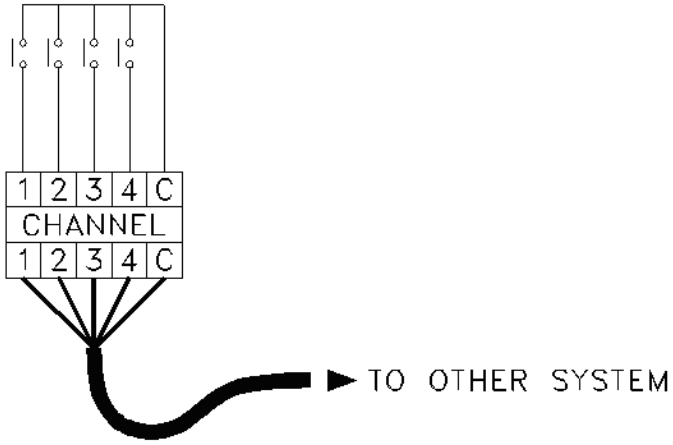
If there is still a fault, the relay board is faulty, and a replacement must be purchased from BeaconMedæs. See the spare parts list on page 6 for more details.

4 WIRING DIAGRAMS

4.1 Output Wiring

The relay interface should be wired according to the diagram below. The relay contacts are volt-free and rated to 50V, 0.5A maximum.

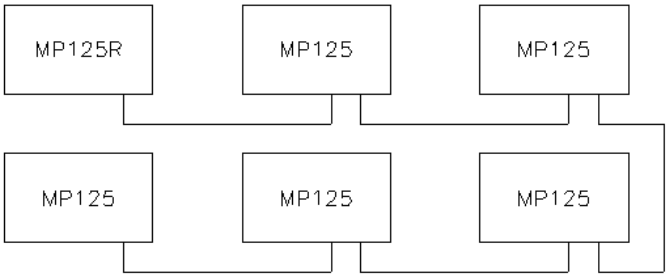
Figure 1 - Standard Wiring



Please note that it is not possible to common the faults together at the Relay Interface. When alarm conditions are “normal”, the appropriate contacts are closed.

4.2 Data Cable Wiring

The data cable should be wired in a continuous “bus” type pattern, as shown in the diagram opposite Rings, radial circuits or “T” junctions are not supported.



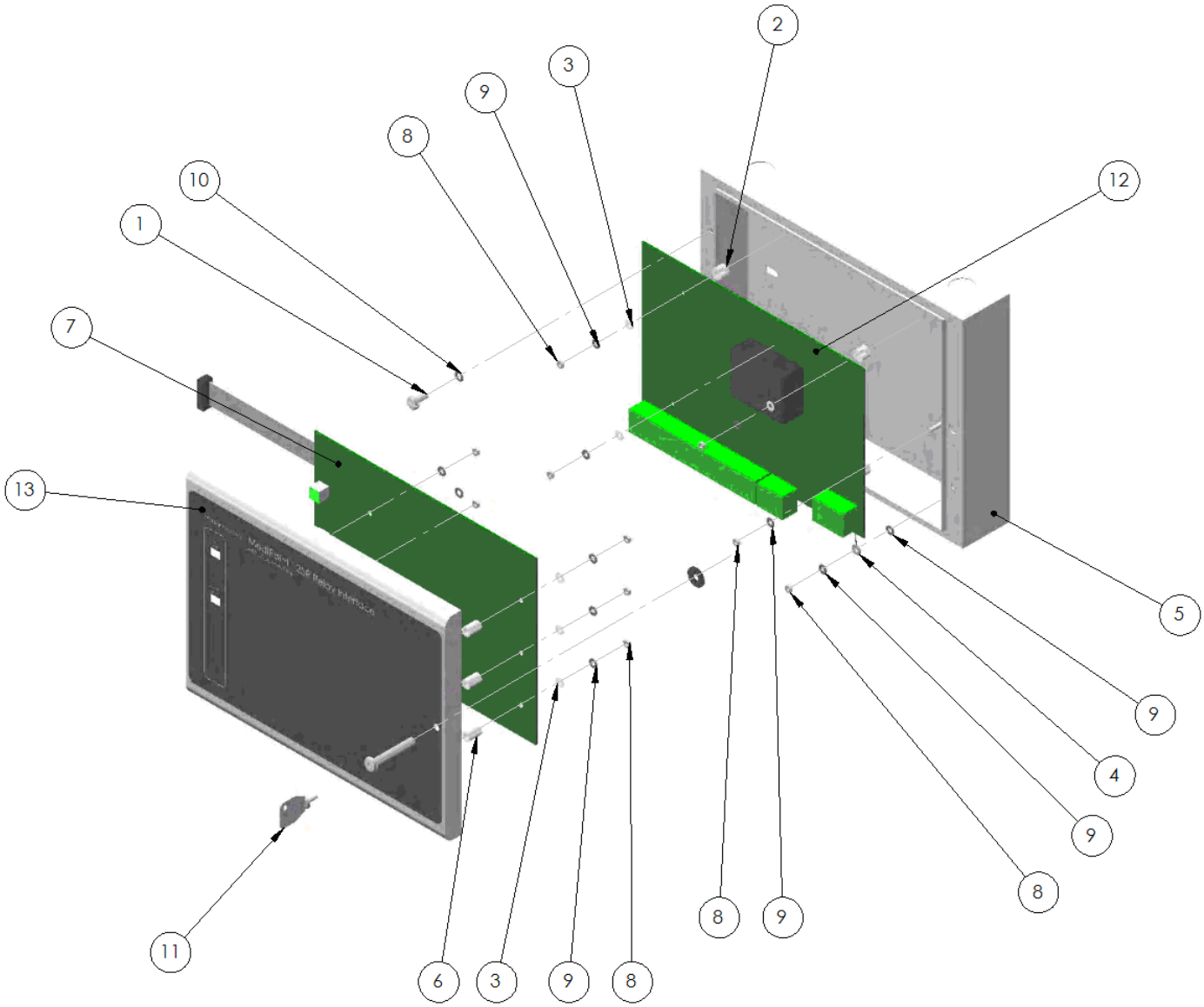
5 SPARE PARTS

The MP125 Relay interface should give many years of service without the need for spares, however, if parts are needed, a complete spares diagram is shown opposite and detailed parts list in the table below.

Table 2 - Spare Parts

Part ID	Description	Part Number
1	M4 x 12 Pan Head Screw	1820159
2	Power PCB Spacer	1825427
3	M3 Nylon Washer	1825429
4	Earth Link Wire	1826491
5	MP125 Backbox	1826561
6	Relay PCB Spacer	1828534
7	MP125R Relay PCB	1828827
8	M3 Nut	1900524
9	M3 Steel Washer	1902111
10	M4 Steel Washer	1902112
11	MP26/MP125 Key Kit	2003069
12	MP125R Power PCB MK2	2005200
13	MP125R Cover Assembly	2005203

Figure 2 - MP125R Spare Parts Diagram



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