

Instruction Manual

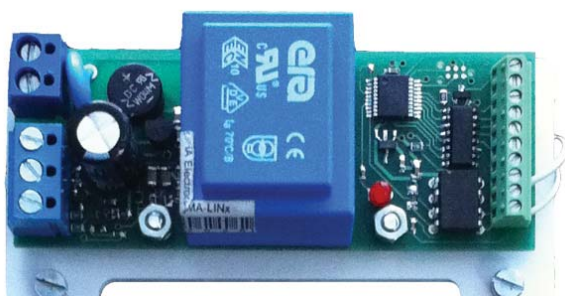
- BMS CARD

AF10/10A-XP2

- Retrofit to (or supplied with) CWC DIGICHEM®-ORP-XP2 Series CONTROLLERS

- 4-20mA Outputs

- NPN Open Collector Outputs for Power Failure, Alarm & Individual Output Status



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Manufacturer: Convergent Water Controls Pty Ltd, Sydney Australia.

Note: On-going product development at Convergent Water Controls may lead to changes in the specifications of this product.

Warranty: This product is guaranteed for a period of 12 months from installation date. The warranty applies to manufacturing or component defects which may cause the unit to malfunction under specified conditions. The guarantee does not cover damage due to abuse, tampering or improper installation.

Disclaimer: Convergent Water Controls will not be held liable for any consequential damage or loss arising resulting from product malfunction.

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1. INTRODUCTION

The AF10/10A-XP2 Series BMS cards can be fitted to any DIGICHEM-ORP-XP2 controller to remotely monitor the variables being controlled as well as power failure, alarm and output status. The outputs of the card can be connected directly to Building Management Systems (BMS) or third party data loggers/ Chart recorders.

1.1 Features

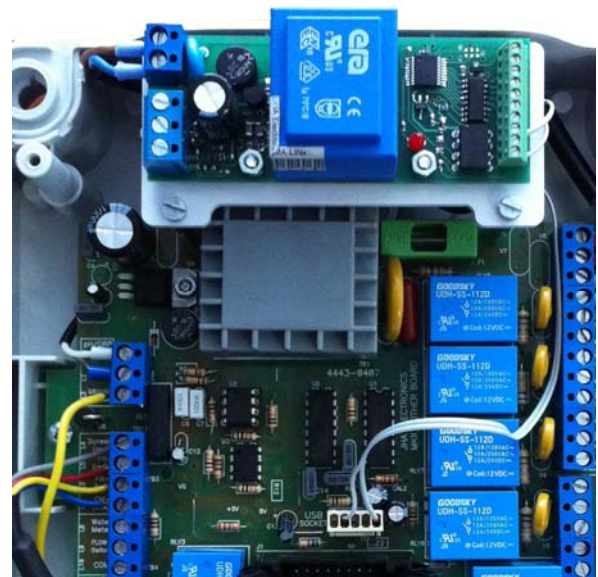
- Easy retrofit to controllers installed in the field.
- Isolated 4-20mA proportional to $\mu\text{S}/\text{TDS}$ and ORP.
- NPN Open Collector Transistors to signal output status
- Failsafe Power Failure alarm signal (NPN)
- Independent Alarm signal (NPN)
- Separate Independent "Output ON" signal (NPN) for Biocide A, ORP, Inhibitor and Solenoid Valve.

2. INSTALLATION & WIRING

2.1 BMS Card Installation

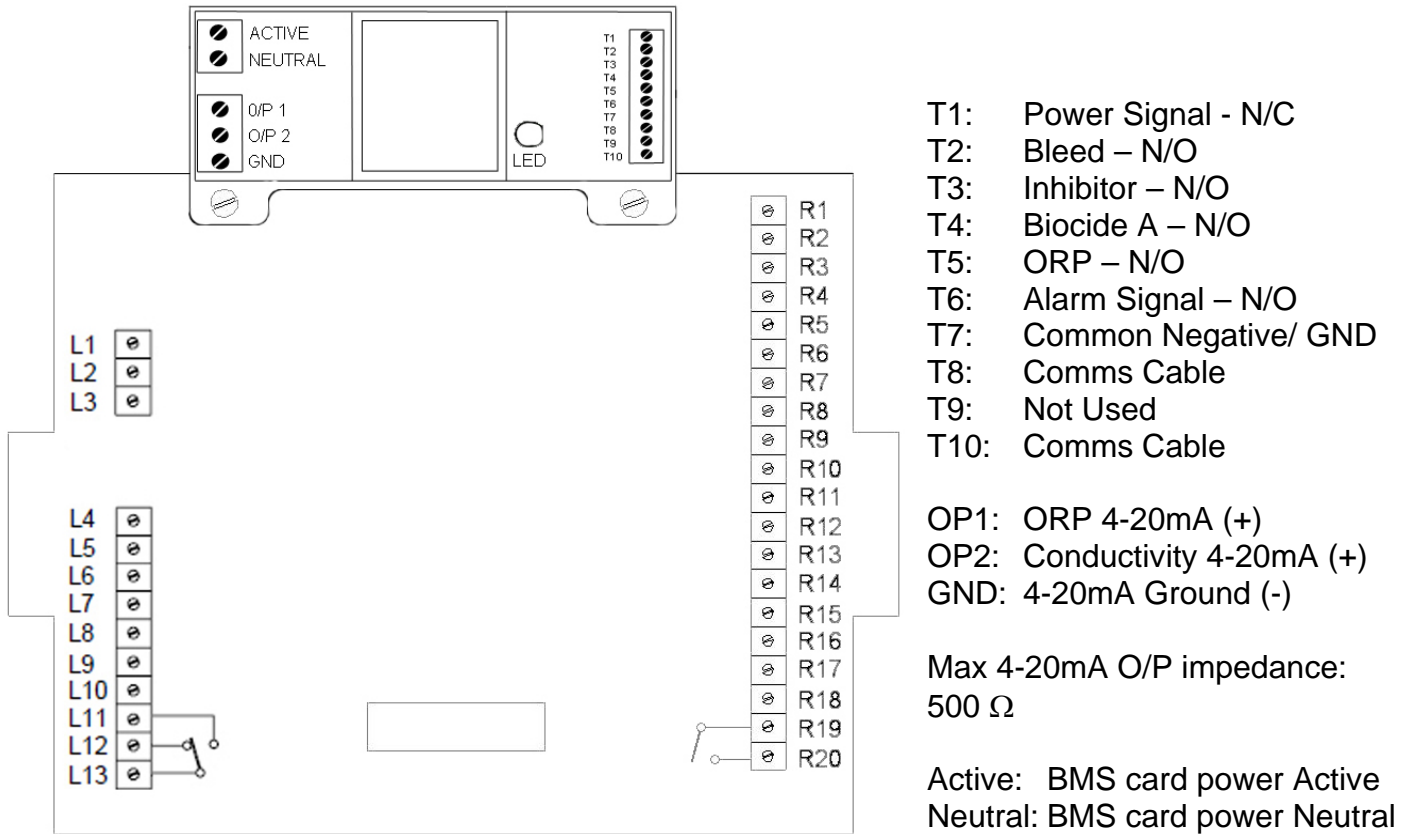


CIRCUIT WITHOUT THE BMS CARD



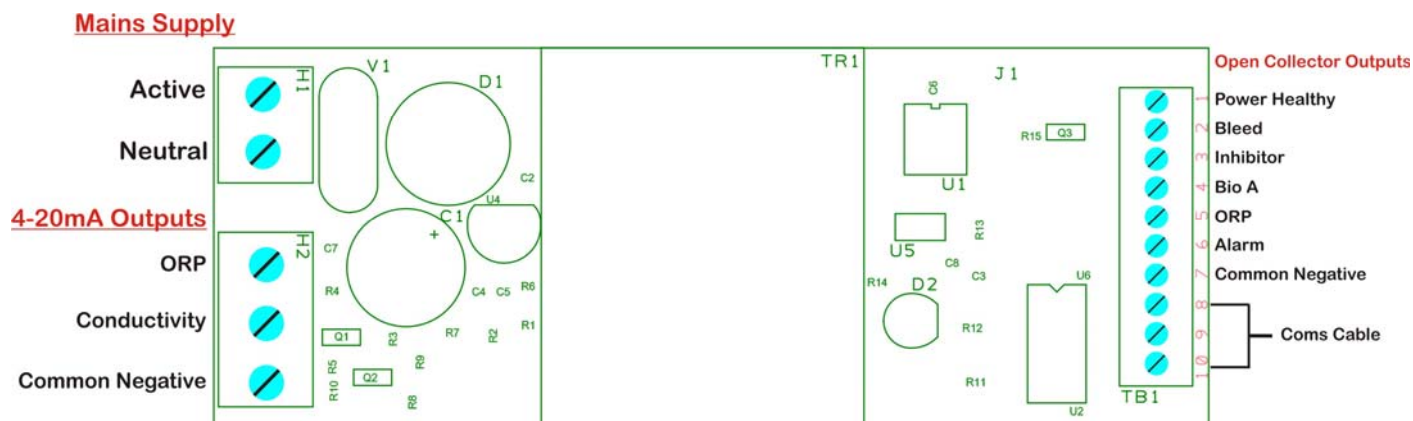
CIRCUIT WITH THE BMS CARD

WIRING DIAGRAM OF DIGICHEM-ORP-XP2 with BMS CARD



1. Make sure that the power is switched off and the controller is unplugged from mains power.
2. Remove cover of enclosure.
3. Locate the two spacer's (female threads) as indicated in the LHS photograph.
4. Plug the new interconnecting cable from the BMS card into the USB socket on the motherboard.
5. Use the two screws provided and fasten the card to the 2 metal spacers already fitted to the motherboard.
6. Connect the RED (Active/Live) wire of the interface card to R3.
7. Connect the BLACK (Neutral) wire of the interface card to terminal R4.
8. Connect terminals 1 to 7 on the BMS card per the electrical diagram in section 6.3.
9. Replace cover of enclosure, ensuring that the seal is in place and no wires are trapped between the lid and the base.
10. Plug into mains and switch on.

2.2 BMS Card Wiring Information



1. Connect the -ve and +ve terminals (ie 4–20mA Outputs) of the BMS card to your chart recorder, PLC, data logger or building management system. It is important to observe the correct polarity of these connections.
2. Connect all the other outputs to the building management system NPN inputs or potential-free switch inputs.
3. The LED on the BMS card should pulse slowly if it is working correctly (approximately 1 pulse per second). If the LED is pulsing faster, there is a loss of communication between the motherboard and BMS card.

3. SPECIFICATIONS

Power Supply:	220 – 240 VAC (50 – 60Hz)
Inputs	Internal from DIGICHEM-ORP-XP2 controllers
NPN Open Collector Output Status	<ol style="list-style-type: none">1. Power ON – NPN N/C, ie opens on power failure2. Biocide A - NPN N/O, ie closes when pump on3. ORP Pump/Valve - NPN N/O, ie closes when pump/valve on4. Inhibitor C - NPN N/O, ie closes when pump on5. Solenoid/Control Output ON - NPN N/O, ie closes when valve opens6. Alarm - NPN N/O, ie closes when alarm is raised7. GND – ie common ground
NPN Open Collector Specifications	Max Open Collector Voltage: 50Vdc Max Continuous Current: 100mA
4-20mA Output	Maximum impedance: 500 Ω Conductivity: 0-5000 TDS/ μ S = 4-20mA ORP: 0-1000mV = 4-20mA
LED Indication	Pulsing indicates correct operation
Controller Enclosure rating	IP55 (ie. Completely weatherproof), if mounted inside DIGICHEM-ORP-XP2 controllers.
EMC compatibility	C-tick approved
Operating Temperature	0 - 50°C