A. E. C.

Data Sheet

MODPCM
Pump Changeover Module

Description

The MODPCM Module is intended for use with Direct Digital Controllers or in stand alone mode to control any Duty / Standby application, typically Pumps, from one Digital Output.

The MODPCM Module is constructed on a Epoxy Glass Laminate and housed in an industry standard 80mm DIN Rail Mounting. Generous 2.5mm² terminals are provided for the field interconnections.

The MODPCM Module is CE rated and is RoHS compliant.

Applications

Applications include the switching via Relay contacts of any Plant up to a 10Amp resistive load.

The automatic control of water Pumps or any Duty Standby Operation.

To provide Local Manual Control of the Plant in case of controller failure.

Local Manual Control of the Plant will also enable pre-commissioning and testing.

To provide a Local LED indication of Output and Trip Status.

To provide isolation of the controller from the Harsh Plant Environment, protecting the Controller.

The input requires only 1 Digital input for complete control.

Features

Provides two SPDT Relay Output channels.

Auto/On/Off jumper for plant checkout and override.

Universal AC or DC Supply.

LED relay status indication.

LED indication of failed state.

A remote Auto/On/Off Switch is available.

DIP switch selectable operating mode and start timer.

Design for DIN rail mounting.

Rising cage Terminals.

Flame retardant Polyamide DIN mounting.

Specifications

Input Signal:	UI1 Enable input, digital closure to 0V. UI1 Proof of flow input, digital closure to 0V. DI1 Load 1 trip or motor fail signal, open from 0V. DI2 Load 2 trip or motor fail signal, open from 0V. Maximum resistance of closed contact and wiring 50 Ohms.
Auxiliary Output:	UI3 Digital output for remote Duty fail indication to controller, 1SRM or LED. 0V = OK and 5V DC = Duty fail.
Output Contacts:	10 Amp @ 230V AC Resistive. S.P.D.T.
Power Supply:	24V DC @ 60mA or 24V AC @ 1.5 VA (+/-15%).
Operating Modes:	DIP Switch selectable.
Dip Switch 1	BMS Controller / Stand Alone.
Dip Switch 2	Proof of flow changeover enable.
Dip Switch 3&4	Delay for P.O.F. enable.
Reset Switch:	Local reset switch to clear fail indicator.
LED Indication:	ON when relay energised.
Output States:	Jumper selectable AUTO/ON/OFF. Auto, controlled by input. On, always on. Off, always off.
Electrical connections:	Rising cage terminals for 0,5 to 2,5mm² cable.
Ambient Conditions:	-10 to 50°C 0 to 80% RH non-condensing.
Dimensions:	80 x 79 x 52mm.
Weight:	108g
I.P. Rating:	IP00.
Mounting	Flame retardant green Polyamide 66 UL 94V0 moulding. To suit 35mm top hat din rail.

DIP SWITCH	MODE	APPLICATION
SW1 OFF	LOCAL CHANGE OVER	MANUAL SW OR TIME CLOCK
SW1 ON	REMOTE CHANGE OVER	BMS CONTROLLER
SW2 OFF	NO P.O.F. CONTROL	MOTOR TRIP SIGNAL ONLY
SW2 ON	P.O.F.CONTROL ENABLE	MOTOR TRIP & FLOW CONTROL
SW3 OFF,SW4 OFF	60 SEC DELAY OF P.O.F.	LONGEST DELAY
SW3 OFF,SW4 ON	45 SEC DELAY OF P.O.F.	LONG DELAY
SW3 ON,SW4 OFF	30 SEC DELAY OF P.O.F.	MEDIUM DELAY
SW3 ON,SW4 ON	15 SEC DELAY OF P.O.F.	SHORT DELAY

Normal Operation

The module is designed for full operation any Duty/Standby equipment from 1 digital input. The input may be provided by a BMS control system, programmable time switch or manual on off switch etc.

The module requires a permanent 24 VAC power supply. On initial power up and the enable input UI-1 present for 4 Secs, the module will select load 1 as duty and energise relay 1. After a selectable delay to establish reliable flow or pressure status the input UI-2 will monitor the status and must be closed before the initialize time-out setting. During operation the load trip inputs DI-1 and DI-2 are monitored and must remain closed.

Local Changeover of Loads

The loads will changeover (sequence) at each start cycle of the enable input UI-1 providing the enable input UI-1 has been in the off condition for more than 15 Seconds. Dip SW 1 off.

Remote Changeover of Loads

The duty load can be changed at any time via the enable input UI-1. If the UI-1 is opened for more than four seconds and closed again within ten seconds the loads will changeover.
If the UI-1 Enable input remains open for more than fifteen seconds then both loads will de-energise. Upon UI-1 Enable input closing then the load that was duty will now be standby. Dip SW 1 on.

Status Fault Operation

If the status input UI-2 has not closed before the initialize timeout setting or the status signal fails during operation, the duty relay will de-energise and the standby relay will be energized. The status input can be disabled via the DIP switch setting if status control is not required.

Load Fault Operation

The inputs DI-1 and DI-2 monitor their respective loads. If Load 1 is duty and the input DI-1 opens, then Relay 1 will de-energise and Relay 2, standby, will energise, this condition will remain until the module is reset. If Load 2 is duty and the input DI-2 opens then Relay 2 will de-energise and Relay 1, standby, will energise, this condition will remain until the module is reset.

Fault Indication

When a fault is detected causing a duty to standby load changeover then the green status LED light will flash locally indicating a fail condition. The digital output UI3 will switch from 0VDC to 5VDC to give remote fail alarm. Digital output UI-3 may be used to input a BMS control system initialising an alarm or connect directly to a remote LED indicator. A MOD1SRM may be connected to UI-3 to provide a relay output to enable other types of indication.

Fault Reset

Once the fault has been cleared and the fail reset (RST) push button has been pressed the standby relay will de-energise and the duty relay will energise, the green status LED light will be normal ON. The digital output UI3 will switch from 5VDC to 0VDC removing the alarm signal.

Power Fail Restart

On returning from a power failure relay one will be selected as duty.

See also the MODPCM Installation Sheet for wiring detail.

Watchtower Trading

PO Box 950, Bromhof, 2154. Telephone +27 11 886 5943 Fax +27 11 886 5947

www.watchtower.co.za Email: watchtower@icon.co.za

Issue 3 Sep 2011