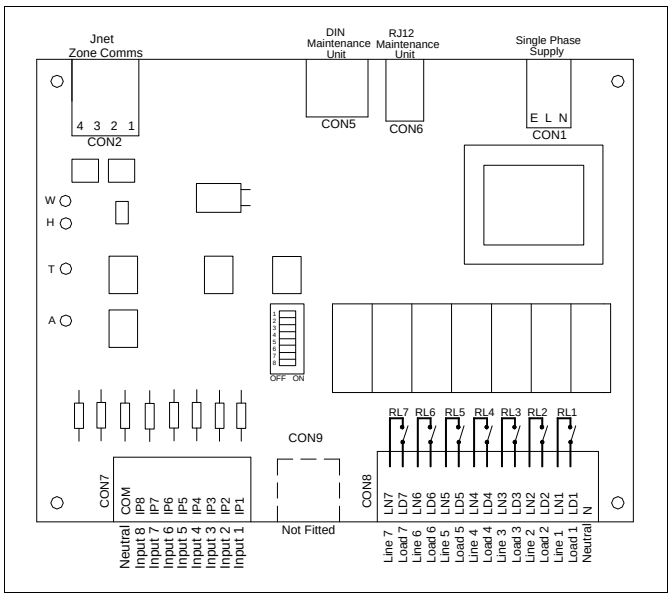

Electrical Installation Requirements
Care should be taken to separate the power and signal cables to prevent electrical interference and possible damage due to inadvertent connection.

The inputs are electrically isolated. A line voltage should be connected for signal present. The terminal marked **COM** should be connected to the supply voltage neutral.

NOTE: The line voltage MUST BE on the same phase as the unit supply.

In order for inbuilt suppressors to function the outputs MUST be wired according to the wiring diagram.

CE Conformance
This unit conforms with the relevant EU standards when installed according to the JTL Installation Requirements for this product.

Description
The JTL standby pump controller is designed to operate stand-alone or as part of a JTL network. The controller will manage the operation of primary and standby circulation pumps, recording run hours and alarming fault conditions. A JTL maintenance unit is required to configure this product.

Use of Maintenance Unit
The controller can be checked and the operation adjusted using a JTL portable maintenance unit which plugs into the interface. Each item of information has an item number. The more important items are listed in the tables overleaf. Examples:

To read item 41 press: ITEM 4 1 ENTER

To set item 31 to 2 press:
ITEM 3 1 ENTER SET 2 ENTER

To correct errors press: CANCEL

To select next or previous items press:
− and +

JTL Network Communications
The JTL network port (CON2) is arranged for 2 wire (half duplex) communications. The wiring of the port is:

	2 wire
1	Rx-/Tx-
2	Rx+/Tx+
3	-
4	-

Note all network products must be connected in parallel without cross connections.

Functionality & Configuration
The controller is assigned an address and connected to the JTL network to take advantage of remote alarming and monitoring.

The auto input must be present for controller to control pump run outputs.

Pumps are controlled over a 24 hour period where pump 1 is run for a number of hours defined by item 31, then pump 2 for the remaining number of hours in the 24 hour period. When the flow present input disappears (ie Flow failure) or a pump fault input appears, the controller will immediately stop the pump and attempt to start the other pump if it is available. If a pump is set for no run hours in 24, it will still be available to run in the event of a flow failure or fault on the main pump. Settable restart inhibit timers prevent short cycling of pumps. An adjustable delay is provided for detecting a change in flow state and also for reporting alarms on the JTL network. Individual pump run hours are totalised in tens of hours. Pump 1 or pump 2 can be forced to run with manual override inputs, although auto input must be present at this time.

Inputs

1	PUMP 1 RUN
2	PUMP 2 RUN
3	PUMP 1 FAULT
4	PUMP 2 FAULT
5	FORCE PUMP 1
6	FORCE PUMP 2
7	FLOW PRESENT
8	AUTO

Outputs

1	RUN PUMP 1
2	RUN PUMP 2
3	PUMP 1 HEALTHY
4	PUMP 2 HEALTHY
5	FLOW PRESENT
6	NOT USED
7	NOT USED

Maintenance Features
In addition to controller configuration, the maintenance unit enables the user to look at various items for diagnostic purposes.

Logical inputs (the inputs the internal logic sees) are displayed on item 71 in binary coded form. These input values can be forced to read differently by setting a non-zero value on item 78. The physical inputs however, are always displayed on item 100.

Logical outputs (outputs commanded by the internal logic) are displayed in binary coded form on item 72. Physical outputs are displayed on item 73. Physical outputs can be forced, overriding internal logic commands by entering a non zero value in item 79.

The binary coding works as follows:

1	=	ip1 / op1
2	=	ip2 / op2
4	=	ip3 / op3
8	=	ip4 / op4
16	=	ip5 / op5
32	=	ip6 / op6
64	=	ip7 / op7
128	=	ip8

If more than 1 input or output is active then the code is added arithmetically.
Eg., input 1 & 3 active = 1 + 4 = 5.

Forced functions remain forced whilst the maintenance unit is plugged in. They are cancelled automatically 30 minutes after the maintenance unit is unplugged.

Four LEDs are located in the top left hand corner of the PCB. These are for diagnostic purposes.

W (Green) =	Watchdog, blinks if board is healthy
H (Green) =	Illuminated when interface processor is healthy
T (Red) =	Illuminated when interface is transmitting data on zone
A (Red) =	Illuminated when interface is in "Active" mode. ie, communicating correctly

ADJUSTABLE PARAMETERS			PU110
Item	Function	Range	Units
31	Pump 1 run hours in 24	0 - 24	hours
32	Alarm delay	0 - 240	secs
33	Exclude flow fault indication from pump healthy output	0=include 1=exclude	
34	Flow state change delay	1 - 60	secs
35	Pump restart inhibit time	1 - 20	mins

OTHER USEFUL ITEMS	
Item	Function
40	Remaining cycle time for current pump (hrs)
41	Pump 1 restart inhibit timer (mins)
42	Pump 2 restart inhibit timer (mins)
51	Pump 1 run hours (10 hrs)
52	Pump 2 run hours (10 hrs)
71	Logical input status (as seen by controller)
72	Logical output status (as sent by controller)
73	Output status (actual)
78	Forced input status (for maintenance purposes)
79	Forced output status (for maintenance purposes)
100	Input status (actual)

Full operating manuals and item number information can be obtained from your supplier or JTL Systems.

Supply and Input Requirements
230 V ac 48-52 Hz
Supply 6 VA maximum
Inputs 2 mA maximum

CE This unit conforms with the relevant EU standards when fitted in accordance with its installation instructions.

Applicable Documentation

Item Numbers	Doc No. 02955
Firmware Variations	Doc No. 02956
Installation Requirements	Doc No. 02958
Outline Details	Doc No. 02783
Wiring	Doc No. 02951

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HELP DESK: 0870 321 HELP (4357)