

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 for use with voltage free contacts.

In order for inbuilt suppressors to function the outputs MUST be wired according to the application drawings.

CE Conformance

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

Description

JTL plant control interfaces are designed to be used with a JTL pack controller. The IF31 interface comprises 8 optically isolated mains "digital" inputs and 8 suppressed non-changeover relay outputs. A JTL maintenance unit is required to configure this product.

Use of Maintenance Unit

The interface 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 30 press:

To set item 31 to 2 press:

To correct errors press:

To select next or previous items press: and

JTL Network Communications

The JTL network port is arranged for 2 wire (half duplex) communications.

Connection to the IF31 plant zone use JTL cables type CAB60. Communications speed should be set to 2400 baud setting item 36=2. The pack controller should be set to 2400 baud also.

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

Functionality & Configuration

The interface is designed to be connected on the plant zone of a JTL pack controller and can be set up in one of three operating modes (item 34).

Mode 0 (Item 34 = 0) Basic

Relays 1 - 7 are switched by the pack controller and the 8 opto-isolated inputs are reported back. The unique plant zone address for the interface is set via the maintenance unit on Item 30 - interface number and Item 31 - interface type (see application drawings for interface type setup). Should the interface not receive a valid command from the pack controller for 90 seconds, the interface will drop in to backup mode. Item 32 can be set for a backup value in backup mode (see binary table below).

The outputs should be set in a combination suitable for failsafe operation. The interface remains in backup until valid communications with the pack controller are restored.

Mode 1 (Item 34 = 1) Enhanced Compressor Control (non xPLT)

Operation is the same as Mode 0 except for the handling of fault conditions when the interface is controlling compressors. A healthy signal must be present on input 7 in order for the compressor to run regardless of the command from the pack controller. Backup in the event of a communication failure is as Mode 0.

Mode 2 (Item 34 = 2) Enhanced Compressor Control (xPLT)

Operation is the same as Mode 0 except for the handling of fault conditions when the interface is controlling multiple single stage compressors. A healthy signal must be present on input 1 for compressor 1 to run, on input 2 for compressor 2 to run etc. Backup in the event of a communications failure is as Mode 0.

Communications Protocol Item 37=0 (Modbus)

For use with JTL controllers using Modbus protocol.

Item 37=1 (JTL plant bus - single channel)

For use with JTL pack controllers type EPxx Single channel operation controls relay outputs 1 - 7 using standard JTL plant zone protocol.

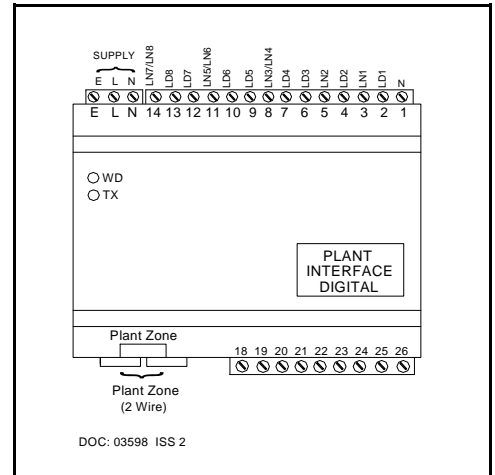
Item 37=2 (JTL plant bit - dual channel)

For use with JTL pack controllers type EPxx Dual channel operation allows relay output 8 control using standard JTL plant zone protocol.

Binary Codes for Inputs & Outputs

The binary coding works as follows:
 1 = input 1 / output 1
 2 = input 2 / output 2
 4 = input 3 / output 3
 8 = input 4 / output 4
 16 = input 5 / output 5
 32 = input 6 / output 6
 64 = input 7 / output 7
 128 = input 8

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



Maintenance Features

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

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

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

Two LEDs are located in the top left hand corner of the unit. These are for diagnostic purposes.

WD (Green) = Watchdog, blinks if board is healthy
 TX (Red) = Illuminated when interface is transmitting data to pack controller

ADJUSTABLE PARAMETERS		
Item	Function	Range
30	Interface number	0 - 9
31	Interface type	0 - 15
34	Operating mode	0=Basic 1=Enhanced compressor control (non xPLT) 2=Multi compressor (xPLT)
36	Communications baud rate	1=1200 2=2400 3=4800 4=9600 5=19200
37	Communications protocol	0=Modbus 1=JTL single channel 2=JTL dual channel
32	Backup value (O/P1-7)	0 - 127 Command value for output in backup mode (see binary codes on page 1)
33	Backup value OP8)	0 - 1
40	Secondary interface number (item 37=2)	0 - 9
41	Secondary interface type (item 37=2)	0 - 15


OTHER USEFUL ITEMS	
Item	Function
71	Logical input status (as seen by main controller)
72	Logical output status (as sent by main controller)
73	Output status (actual)
78	Forced input status (for maintenance purposes)
79	Forced output status (for maintenance purposes)
100	Input status (actual)

Supply Requirements and Input/Output Specification

230 V ac 48-52 Hz
 Supply 6 VA maximum
 Relay rating 2 A resistive

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

Technical documentation can also be obtained from our website www.jtl.co.uk.

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

Applicable Documentation

Item Numbers	Doc No. 03593
Firmware Variations	Doc No. 03594
Connections Diagram	Doc No. 03563
Installation Requirements	Doc No. 02777

Application Drawings

Doc No. 03582, 03583, 03586, 03581