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 plant inputs are electrically isolated.

Model 410

A line voltage should be connected for input present. The terminal marked **C** should be connected to the supply neutral.

Model 411

An on board isolated 15Vac supply is present on the **'C'** terminal. This provides voltage for the alarm inputs. Inputs are energised via volt free contacts connecting **'C'** to the appropriate 'IP' terminal.

ON NO ACCOUNT MUST AN EXTERNAL SUPPLY BE USED FOR INPUTS.

CE Conformance

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

Inputs

Inputs (CON 4)

C Common
1 Plant event 1
2 Plant event 2
3 Plant event 3
4 Plant event 4
5 Plant event 5

Note: See relevant connections diagram for wiring details.

Use of Maintenance Unit

The monitor can be checked and the operation adjusted using a JTL portable maintenance unit which plugs into the monitor. 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 30 to 10 press:

ITEM 3 0 ENTER SET 1 0 ENTER

To correct errors press: CANCEL

To select next or previous items press: + and −

JTL Jnet Communications

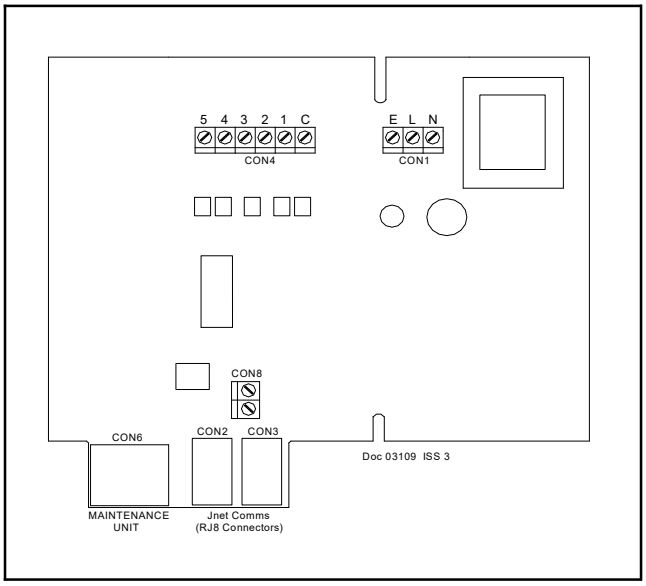
	2 wire
1	-
2	+

Note all network products must be connected in parallel without cross connections. The unit is designed to be connected in a "daisy-chain" fashion using CON2 & 3 RJ8 connectors. Alternatively screw terminal connections can be made using CON8.

Initial Commissioning

The monitor has a set of data built in to its program for use during commissioning. This can be accessed by setting item 9 to 1234. This loads into the monitor a standard set of data. Adjustments should then be made as necessary. The range over which the settings can be adjusted shown overleaf.

The unit number for the Jnet communications should be set on item 1.



Events

The monitor is designed to be as versatile as possible. It is configured by assigning event message text to each of the five inputs available on the board. First an event list containing appropriate event messages is chosen and set on item 30 (see table overleaf). Individual messages must then be assigned to the inputs on item 51 - 55. A value of 0 in this item means that events are disabled for this input.

Events are reported on the network after an adjustable delay set on item 4n (where n=input number). The default strategy for monitoring is that a signal present on the input means an event condition is present. However, if a lack of input constitutes an event condition, the logic can be inverted (individually for each input) on item 6n.

Item 3n determines whether the event is reported as critical on the JTL network.

Note: Each time a new critical alarms occurs a new event is reported on the network. In order for critical alarms to dial-out correctly, the new critical alarm present period (item 49) must exceed the dial-out delay set in the network controller.

ADJUSTABLE PARAMETERS

Item	Function	Range	Units
1	Unit number	0.1 to 899.8	
30	Alarm text selection list number (see below)	1 - 10	
41-45*	Alarm delay	0 - 120	mins
49	New critical alarm present period	10 - 120	mins
51 - 55*	Alarm function	0 - 22 (0 =unused)	
31 - 35*	Alarm critical selection	0 - 1 (0=event present for input present)	
61 - 65*	Invert input	(1=event present for input absent)	

* Input 1 is on 31, 41, 51 and 61. Input 2 is on 32, 42, 52 and 62 etc.

OTHER USEFUL ITEMS

Item	Function
71**	Inputs logical physical input value adjusted by inversion where appropriate
78	Force inputs to read value 0 - 31 (0 = unforced)
100**	Physical input value

** input 1 has value 1, input 2 value 2, input 3 value 4, input 4 value 8, input 5 value 16
If more than 1 input present then the displayed value is the summ of the individual input values. eg. if input 1 and 5 present then 17 (1 + 16) will be displayed.

ALARM TEXT SELECTION LISTS (Item 30)

	1 (TYPE 180)		2 (TYPE 181)		3 (TYPE 182)
1	High suction pressure	1	Electrical supply fault	1	Man trapped * (See note 1)
2	Low suction pressure	2	Electrical supply OK	2	Severe refrigerant gas leak * (see Note 2)
3	Oil pressure fault	3	Generator fault	3	Floor heater fault
4	Motor thermistor fault	4	Generator running	4	Door heater fault
5	low liquid level	5	Low pressure	5	Drain heater 1 fault
6	Backup system fault	6	High pressure	6	Drain heater 2 fault
7	Primary control fault	7	Low level alarm	7	Threshold heater fault
8	Liquid pump fault	8	High level alarm	8	Refrigerant gas leak * (see Note 2)
9	Refrigerant leak	9	Pump 1 fault	9	Gas leak caution * (see Note 2)
10	Severe refrigerant leak	10	Pump 2 fault	10	Gas leak detector fault * (see Note 2)
11	Phase failure	11	Air filter blocked	11	Emergency stop
12	High discharge pressure	12	Pump 3 fault	12	Sensor fault
13	Condenser/cooler fault	13	Pump 4 fault	13	Alarm activated
14	Condenser override on	14	Pump 5 fault	14	-
15	General plant fault	15	Pump 6 fault	15	-
16	Oil filter blocked	16	Pump 7 fault	16	-
17	Compressor fault	17	Pump 8 fault	17	-
18	Condensing unit fault	18	-	18	-
19	Evaporator Shutdown	19	-	19	-
20	HT compressor fault	20	-	20	-
21	LT compressor fault	21	-	21	-
22	Low oil level	22	-	22	-

ALARM TEXT SELECTION LISTS (Item 30)

	4 (TYPE 183)		5 (TYPE 184)		6 (TYPE 185)		7
1	Suction pressure fault	1	Phase 1 fault	1	reserved)	1	Inhibit defrost
2	Discharge pressure fault	2	Phase 2 fault	2	Severe refrigeration gas leak* (see note 1)	2	Inhibit refrigeration
3	Low liquid level	3	Phase 3 fault	3	Refrigerant gas leak	3	Evaporator fans off
4	Condenser /cooler fault	4	-	4	Gas leak caution	4	Cabinet light off
5	Plant controller fault	5	-	5	Gas leak detection fault	5	Raise temperature set point
6	General plant fault	6	-	6	Severe ammonia leak	6	Run one compressor only
7	Control voltage fault	7	-	7	Ammonia leak	7	Reduce trim heat
8	Compressor inverter	8	-	8	Extract fan fault	8	-
9	LPA fault	9	-	9	Fire alarm activated	9	-
10	Evaporator Shutdown	10	-	10	Break glass activated	10	-
11	Oil level fault	11	-	11	Test switch activated	11	-
12	Heat reclaim fault	12	-	12	Inlet fan fault	12	-
13	-	13	-	13		13	-
14	-	14	-	14	-	14	-
15	Compressor 1 fault	15	-	15	-	15	-
16	Compressor 2 fault	16	-	16	-	16	-
17	Compressor 3 fault	17	-	17	-	17	-
18	Compressor 4 fault	18	-	18	-	18	-
19	Compressor 5 fault	19	-	19	-	19	-
20	Compressor 6 fault	20	-	20	-	20	-
21	Compressor 7 fault	21	-	21	-	21	-
22	Compressor 8 fault	22	-	22		22	-

* Note 1. "MAN TRAPPED" and "SEVERE REFRIGERANT GAS LEAK" are regarded as critical on the network regardless of settings on items 31 - 35.
* Note 2. For legacy use only. For new applications use list 6.

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

Supply and Input Requirements
PA410/PA411 230 V ac 48-62 Hz
PA410-24/PA411-24 24 V ac 48 - 62 Hz
Supply 1 VA maximum
Inputs 2 mA maximum (PA410 & PA410-24 only)

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

Applicable Documentation

Item Numbers	Doc No. 03096
Firmware Variations	Doc No. 03097
Connections Drawing PA410	Doc No. 03105
Installation Information	Doc No. 03018
Connections Drawing PA411	Doc No. 03733

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