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.

TA210
TA210 inputs are electrically (optically) 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.

TA211
The inputs are 5 V dc and are electrically (optically) isolated. The +5 V signal should be connected for signal present. The terminal marked COM should be connected to 0 V.

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

Inputs and Temperatures
Inputs (connector CN4/5) Temperatures (connector CN1-3)

DI1 Defrost AI1 Air on temperature (T1)
DI2 Input 2 alarm AI2 Air off temperature (T2)
DI3 Not used AI3 Not used
COM Supply Neutral

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 21 press: ITEM 2 1 ENTER

To set item 31 to -20.0 press:

ITEM 3 1 ENTER SET – 2 0 0 ENTER

To correct errors press: CANCEL

To select next or previous items press: + and –

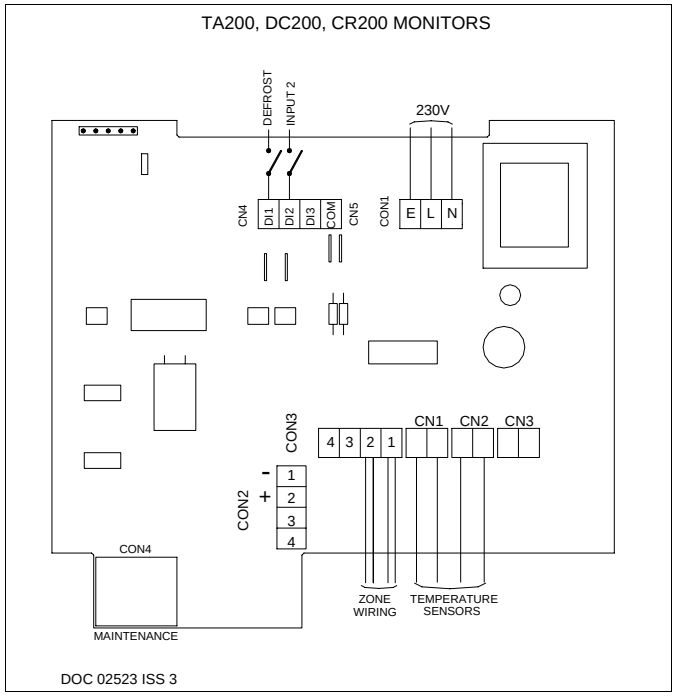
JTL Network Communications
The JTL network port (connectors 2&3) is 2 wire (half duplex) communications. The wiring of the port is:

	2 wire
1	-
2	+
3	Not used
4	Not used

Note all network products must be connected in parallel without cross connections. The Rx connections must be connected to the Tx connections at the network controller.

The communications rate is automatically selected for 4800 baud.

Initial Commissioning
The monitor has a set of data built in to its program for use during commissioning. This can be accessed setting item 9 to 1. 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 JTL communications network should be set on item 1.



Defrost
The defrost sequence can be initiated via the Jnet network (with defrost scheduler) or by a contact input. Item 107 must be set accordingly. Defrost is terminated when either the network command or contact input is taken away. An adjustable maximum defrost period is set on item 57. An alarm is generated if a defrost exceeds this time and is only cleared after the defrost has finished.

Defrost Recovery
When the defrost is ended the monitor enters defrost recovery for a period set on item 64.

Alarms
The reported temperature is monitored continually. The reported temperature is computed from the T1 and T2 temperatures. A factor is used to proportion the T1 and T2 temperatures. If a single sensor is used then a value can be added to offset the reported temperature using item 34.

In two sensor mode, the reported temperature is averaged over a period set on item 47. If the average temperature exceeds the alarm level, then an alarm is transmitted on the JTL alarm system.

In single sensor mode (T1 only) an alarm is transmitted on the JTL alarm system if the reported temperature exceeds the alarm level for a period longer than the delay set on item 47.

Temperature alarms are cancelled during defrost and defrost recovery.

Input 2 Alarm
A general purpose alarm facility is provided when a mains alarm signal (eg. Plant fault, door open) is given to the monitor, an alarm is available after an adjustable delay on the JTL Network. The delay is set on item 36.

In the default condition (input not inverted, Item 66=0), the line voltage should be present to indicate; plant healthy (Item 98=2,4,5), door closed (Item 98=3), unit shutdown (Item 98=6). When a unit is shutdown, all temperature and defrost alarms are cancelled, sensor faults are still reported.

According to the application the unit should be set up as follows:

	Cabinets (Item 98=2)	**Coldrooms (Item 98=3)**	**Air Handlers (Item 98=4)**	**Cabinets (TA211) (Item 98=5)**	**Cabinets (Item 98=6)**
Input 2 Function	Plant fault alarm	Door open alarm	Plant fault alarm	Plant fault alarm	Unit shutdown
T1	Air on	Air on	Air on	Air on	Air on
T2	Air off	Air off	Air off	Air off	Air off
Temperature ratio	0 - 100%	100%	0%	0 - 100%	0 - 100%

ADJUSTABLE PARAMETERS

Item	Function	Range	Units
1	JTL network unit number	0.1 to 899.9	
30	Setpoint (for optimiser compatibility, does not affect alarm logic)	-99.9 to +99.9	°C
31	Low temperature alarm level	-99.9 to +99.9	°C
32	High temperature level	-99.9 to +99.9	°C
33	Cabinet temperature factor	0 to 100	%
34	Single sensor temperature offset	-10.0 to + 10.0	°C
36	Plant alarm delay time	0 to 99	mins
38	Sensor selections	0=none 1=T1 2=T1 & T2 3=T2	
47	Alarm delay time/Period over which averages taken	0 to 99	mins
57	Maximum defrost time	5 - 60	mins
65	Invert defrost input	0=no 1=yes	
66	Invert plant alarm input	0=no 1=yes	
67	Door alarm critical	0=no 1=yes	
102	Sensor type selection	0=Standard sensor 1=Hot sensor	
107	Defrost strategy selection	0=none 1=contact 2=network	
64	Delay after defrost	0 to 60	mins
98	Unit sub-type	2=DC 3=CR 4=AH 5=DC(TA211) 6=DC	

OTHER USEFUL ITEMS

Item	Function	Item	Function
20	Reported temperature	22	Air off temperature (T2)
21	Air on temperature (T1)	70	Operating mode

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

Supply and Input Requirements
230 V ac 48-62 Hz
Supply 2 VA maximum
Inputs 2 mA maximum

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

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