

| JTL CABINET CONTROLLER ITEM NUMBERS |   |              |                            |      | LCED          |                    |
|-------------------------------------|---|--------------|----------------------------|------|---------------|--------------------|
| ITEM                                | DESCRIPTION   | CODE         | CODE MEANING               | BIT  | RANGE         | ITEM<br>9<br>VALUE |
|                                     |   |              |                            | 4321 |               |                    |
| 0                                   | Unit type   | Lced         | Unit type                  |      |               |                    |
| 1                                   | Unit number   |              |                            |      | 0.1 - 899.9   |                    |
| 2                                   | Time of day   |              |                            |      | 00:00 - 23:59 |                    |
| 6                                   | Communications speed  | 600<br>4800  | Baud rate<br>Baud rate     |      |               |                    |
| 8                                   | Bitswitch setting   |              |                            |      |               |                    |
| 9                                   | Set default values selected by Bitswitch  |              |                            |      | 0 - 1         |                    |
| <b>PROCESSOR ALARMS</b>             |   |              |                            |      |               |                    |
| 10                                  | Processor alarms (11 - 17)  | 0<br>1 - 255 | No alarms<br>Check 11 - 17 |      |               |                    |
| 11                                  | Static RAM Fault  | CLr<br>rA.Ft | No fault<br>Fault          |      |               |                    |
| 12                                  | Program/counter fault   | CLr<br>PC.Ft | No fault<br>Fault          |      |               |                    |
| 13                                  | Stack pointer fault   | CLr<br>SP.Ft | No fault<br>Fault          |      |               |                    |
| 14                                  | Background loop fault   | CLr<br>bL.Ft | No fault<br>Fault          |      |               |                    |
| 15                                  | PROM checksum fault   | CLr<br>Pr.Ft | No fault<br>Fault          |      |               |                    |
| 16                                  | NVRAM fault   | CLr<br>n.Ft  | No fault<br>Fault          |      |               |                    |
| 17                                  | Instruction TRAP fault  | CLr<br>tP.Ft | No fault<br>Fault          |      |               |                    |
| <b>MISCELLANEOUS DATA</b>           |   |              |                            |      |               |                    |
| 19                                  | Software Version number   |              |                            |      |               |                    |
| <b>TEMPERATURES</b>                 |   |              |                            |      |               |                    |
| 20                                  | Estimated cabinet temperature (calculated from Air on and Air off temperatures) |              |                            |      |               |                    |
| 21                                  | Air on temperature  |              |                            |      |               |                    |
| 22                                  | Air off temperature   |              |                            |      |               |                    |
| 23                                  | Evaporator temperature  |              |                            |      |               |                    |
| 24                                  | Suction line temperature  |              |                            |      |               |                    |
| 25                                  | Superheat (Evaporator temp - suction line temp)                                 |              |                            |      |               |                    |
| <b>AVERAGE ERRORS</b>               |   |              |                            |      |               |                    |
| 26                                  | Average cabinet temperature error   |              |                            |      |               |                    |
| 27                                  | Average Air off temperature error   |              |                            |      |               |                    |

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|   |   |               |                             | 4321                         |  |                            |
| <b>AUTOMATICALLY ADJUSTED SETPOINTS</b> |   |               |                             |                              |  |                            |
| 28                                      | Current Air off temperature setpoint<br>(calculated by controller)  |               |                             |                              |  |                            |
| 29                                      | Current Evaporator temperature setpoint<br>(calculated by controller)                                     |               |                             |                              |  |                            |
| <b>PRIMARY TEMPERATURE SETPOINTS</b>    |   |               |                             |                              |  |                            |
| 30                                      | Cabinet temperature setpoint (target for<br>item 20)  |               |                             | xxCC<br>xxCO<br>xxOC<br>xxOO | - 30 to -15<br>- 30 to -15<br>- 5 to +10<br>- 5 to +10 | - 20<br>- 26<br>+1<br>+4   |
| 31                                      | Air off setpoint (starting point and lower<br>limit for item 28)  |               |                             | xxCC<br>xxCO<br>xxOC<br>xxOO | - 39 to -20<br>- 39 to -20<br>- 10 to +5<br>- 10 to +5 | - 30<br>- 36<br>- 6<br>- 4 |
| 32                                      | Overtemperature alarm tolerance   |               |                             | xxCC<br>xxCO<br>xxOC<br>xxOO | 0 - 20<br>0 - 20<br>0 - 20<br>0 - 20                   | 10<br>10<br>5<br>10        |
| 33                                      | Cabinet temperature ratio (Item 20<br>calculated as value between Air off and<br>Air on using this ratio) |               |                             | xxCC<br>xxCO<br>xxOC<br>xxOO | 20 - 80<br>20 - 80<br>20 - 80<br>20 - 80               | 50<br>50<br>40<br>60       |
| 35                                      | Defrost termination probe selection   | OFF<br>E.C.En | Air off probe<br>Evaporator |                              |  | OFF                        |
| <b>PROBE SELECTION</b>                  |   |               |                             |                              |  |                            |
| 36                                      | Air on probe selection  | OFF<br>AO.En  | Disabled<br>Enabled         |                              | 0 - 1  | AO.En                      |
| 37                                      | Air off probe selection   | OFF<br>AF.En  | Disabled<br>Enabled         |                              | 0 - 1  | AF.En                      |
| 38                                      | Evaporator probe selection  | OFF<br>EP.En  | Disabled<br>Enabled         |                              | 0 - 1  | EP.En                      |
| 39                                      | Suction line probe selection  | OFF<br>SP.En  | Disabled<br>Enabled         |                              | 0 - 1  | SP.En                      |
| <b>DEFROST INFORMATION</b>              |   |               |                             |                              |  |                            |
| 40                                      | Duration of last defrost  |               |                             |                              |  |                            |
| 41                                      | Time since end of last defrost  |               |                             |                              |  |                            |
| 42                                      | Duration of current defrost   |               |                             |                              |  |                            |
| 43                                      | Time next defrost is due  |               |                             |                              |  |                            |
| 44                                      | Power off duration  |               |                             |                              |  |                            |

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|  |   |                              |  | 4321                         |  |                                  |
| <b>MISCELLANEOUS SETTINGS</b>  |   |                              |  |                              |  |                                  |
| 47   | Period over which averages are taken  |                              |  |                              | 00:30 - 03:00  | 01:00                            |
| 48   | Max starts/hour<br>(Anti-shortcycling timer when using liquid valve relay to control a condensing unit) | 0<br>10.PH<br>15.PH<br>20.PH | No limit<br>10 starts per hour<br>15 starts per hour<br>20 starts per hour |                              | 0 - 3  | 0                                |
| 49   | Liquid hold off time (starts when drain down completed)   |                              |  |                              | 00:00 - 00:10  | 00:00                            |
| <b>DEFROST SETPOINTS</b>   |   |                              |  |                              |  |                                  |
| When a 12 hour schedule is selected (item 60) the defrosts repeat on a 12 hour cycle ie., if 08:00 is selected then a 2nd defrost occurs at 20:00 (and vice versa) |   |                              |  |                              |  |                                  |
| 50   | Defrost termination temperature   |                              |  | xxCC<br>xxCO<br>xxOC<br>xxOO | 0 - 20<br>0 - 20<br>0 - 20<br>0 - 20                             | 15<br>15<br>12<br>20             |
| 51   | Defrost time 1  | 00:00<br>00:01 - 23:59       | Defrost disabled<br>Defrost enabled  | xxCC<br>xxCO<br>xxOC<br>xxOO | 00:00 - 23:59<br>00:00 - 23:59<br>00:00 - 23:59<br>00:00 - 23:59 | 01:00<br>02:00<br>03:00<br>04:00 |
| 52   | Defrost time 2  | 00:00<br>00:01 - 23:59       | Defrost disabled<br>Defrost enabled  | xxCC<br>xxCO<br>xxOC<br>xxOO | 00:00 - 23:59<br>00:00 - 23:59<br>00:00 - 23:59<br>00:00 - 23:59 | 07:00<br>08:00<br>09:00<br>10:00 |
| 53   | Defrost time 3  | 00:00<br>00:01 - 23:59       | Defrost disabled<br>Defrost enabled  | xxCC<br>xxCO<br>xxOC<br>xxOO | 00:00 - 23:59<br>00:00 - 23:59<br>00:00 - 23:59<br>00:00 - 23:59 | 13:00<br>14:00<br>15:00<br>16:00 |
| 54   | Defrost time 4  | 00:00<br>00:01 - 23:59       | Defrost disabled<br>Defrost enabled  | xxCC<br>xxCO<br>xxOC<br>xxOO | 00:00 - 23:59<br>00:00 - 23:59<br>00:00 - 23:59<br>00:00 - 23:59 | 19:00<br>20:00<br>21:00<br>22:00 |
| 55   | Defrost time 5  | 00:00<br>00:01 - 23:59       | Defrost disabled<br>Defrost enabled  | xxCC<br>xxCO<br>xxOC<br>xxOO | 00:00 - 23:59<br>00:00 - 23:59<br>00:00 - 23:59<br>00:00 - 23:59 | 00:00<br>00:00<br>00:00<br>00:00 |
| 56   | Defrost time 6  | 00:00<br>00:01 - 23:59       | Defrost disabled<br>Defrost enabled  | xxCC<br>xxCO<br>xxOC<br>xxOO | 00:00 - 23:59<br>00:00 - 23:59<br>00:00 - 23:59<br>00:00 - 23:59 | 00:00<br>00:00<br>00:00<br>00:00 |
| 57   | Defrost termination time limit  |                              |  | xxCC<br>xxCO<br>xxOC<br>xxOO | 00:10 - 00:40<br>00:10 - 00:40<br>00:10 - 01:00<br>00:10 - 01:00 | 00:20<br>00:20<br>00:20<br>00:40 |
| 59   | Drain down time   |                              |  |                              | 00:00 - 00:10  | 00:05                            |
| 60   | Defrost schedule selection  | 24 hr<br>12 hr               | 24 hour schedule<br>12 hour schedule                                       |                              | 0 - 1  | 24 hr                            |
| 61   | Pump down time  |                              |  |                              | 00:00 - 00:10  | 00:00                            |

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| <b>MODES, INPUTS AND OUTPUTS</b>  |   |  |  |      |       |                    |
| 70  | Operating mode                                | rEfr<br>dEfr<br>dF.rc<br>dr.dn<br>Li.Ho<br>Pu.dn | Refrigeration<br>Defrost<br>Defrost recovery<br>Drain down<br>Liquid hold off<br>Pump down |      |       |                    |
| 72  | Defrost relay                                 | OFF<br>dF.on                                     | Relay deenergised<br>Relay energised   |      |       |                    |
| 73  | Liquid solenoid relay                         | OFF<br>LS.on                                     | Off<br>Demanding refrig.   |      |       |                    |
| 74  | FANS/Heater relays                            | O<br>Fn.on<br>Hr.on                              | Off<br>Fans on<br>Heater on  |      |       |                    |
| <b>FORCING FUNCTIONS</b>  |   |  |  |      |       |                    |
| Forced functions remain forced if the Maintenance Unit remains plugged in. They are automatically cancelled 30 minutes after the Maintenance Unit is unplugged. |   |  |  |      |       |                    |
| 77  | Forced defrost                                | OFF<br>Fd.on                                     | Off<br>Forced defrost on   |      | 0 - 1 |                    |
| 78  | Forced refrigeration                          | OFF<br>Fr.on                                     | Off<br>Forced refrigeration  |      | 0 - 1 |                    |
| <b>SYSTEM ALARMS</b>  |   |  |  |      |       |                    |
| 80  | Group alarm 81 - 88                           | 0<br>1 - 255                                     | No alarms<br>Check 81 - 88   |      |       |                    |
| 81  | Cabinet overtemperature                       | Clr<br>C.Ht                                      | No fault<br>Fault  |      |       |                    |
| 82  | Air off overtemperature                       | Clr<br>A.Ht                                      | No fault<br>Fault  |      |       |                    |
| 83  | Air on probe fault                            | Clr<br>AO.Pr                                     | No fault<br>Fault  |      |       |                    |
| 84  | Air off probe fault                           | Clr<br>AF.Pr                                     | No fault<br>Fault  |      |       |                    |
| 85  | Thermistor power supply fault                 | Clr<br>PS.Ft                                     | No fault<br>Fault  |      |       |                    |
| 87  | Unit number corrupted/not set                 | Clr<br>Un.CF                                     | No fault<br>Fault  |      |       |                    |
| 88  | All probes faulty, deselected or disconnected | Clr<br>t.SEn                                     | No fault<br>Fault  |      |       |                    |

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| <b>MISCELLANEOUS DATA</b>   |  |               |   |      |       |                    |
| 89  | Thermistor excitation value (Factory test) |               | Not used  |      |       |                    |
| <b>SYSTEM ALARMS</b>  |  |               |   |      |       |                    |
| 90  | Group alarm 91 - 98                        | 0<br>1 - 255  | No alarms<br>Check 91 - 98                                  |      |       |                    |
| 91  | Termination probe fault                    | CLr<br>dt.Pr  | No fault<br>Fault   |      |       |                    |
| 92  | Evaporator probe fault                     | CLr<br>EP.Pr  | No fault<br>Fault   |      |       |                    |
| 93  | Suction line probe fault                   | CLr<br>SL.Pr  | No fault<br>Fault   |      |       |                    |
| <b>UTILITY</b>  |  |               |   |      |       |                    |
| 99  | Test digital display                       | CLr<br>SEt    | Not active<br>Test active                                   |      | 0 - 1 |                    |
| <b>PROBE SELECTION</b>  |  |               |   |      |       |                    |
| 102   | Probe type selection                       | 5000<br>2000  | Tempkey<br>ELM  |      | 0 - 1 | 5000               |
| <b>LIGHTING CONTROL</b>   |  |               |   |      |       |                    |
| 110   | Select lighting control                    | OFF<br>LC.on  | off<br>Lighting control<br>function selected                |      | 0 - 1 | LC.on              |
| 111   | Lighting unit command                      | LU.Co<br>0    | Lighting off<br>command<br>Clear                            |      |       |                    |
| 112   | Over ride input                            | OFF<br>L.O.IP | No input<br>Over ride input on                              |      |       |                    |
| 113   | Lights and blinds                          | on<br>L.OFF   | Lights on and blinds<br>up<br>Lights off and blinds<br>down |      |       |                    |
| <b>FORCING FUNCTIONS</b>  |  |               |   |      |       |                    |
| Forced functions remain forced if the Maintenance Unit remains plugged in. They are automatically cancelled 30 minutes after the Maintenance Unit is unplugged. |  |               |   |      |       |                    |
| 114   | Force lights on                            | OFF<br>L.on   | Off<br>Lights on  |      | 0 - 1 |                    |
| 115   | Force lights off                           | OFF<br>L.OFF  | Off<br>Lights off   |      | 0 - 1 |                    |

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|                                     |  |              |                                  | 4321 |               |                    |
| <b>LIGHTING CONTROL</b>             |  |              |                                  |      |               |                    |
| 116                                 | Manual lights on   | OFF<br>P.on  | OFF<br>Lights on                 |      |               |                    |
| 117                                 | Manual lights off  | OFF<br>P.off | OFF<br>Lights off                |      |               |                    |
| 118                                 | Lighting contactor type selection (shown for lights-on state)                            | n.o<br>n.c   | normally open<br>normally closed |      | 0 - 1         | n.c                |
| 120                                 | Lighting override timer (time delay before lighting off/blinds close on network control) |              |                                  |      | 00:30 - 02:00 | 02:00              |
| <b>DISPLAY PUSHBUTTONS</b>          |  |              |                                  |      |               |                    |
| 121                                 | Display pushbutton 1 Status  | OFF<br>P1.IP | OFF<br>button pressed            |      |               |                    |
| 122                                 | Display pushbutton 2 Status  | OFF<br>P2.IP | OFF<br>button pressed            |      |               |                    |

#### BITSWITCH SETTINGS

4321  
 xxCC Frozen food  
 xxCO Ice cream  
 xxOC Chiller  
 xxOO Produce

where C = CLOSED or ON  
 O = OPEN or OFF  
 x = Don't care

Note 1: For unmarked switches  
 C = dot visible  
 O = dot not visible

Note 2: Setting the bitswitches alone has no effect.  
 Use **ITEM 9** to set the default values after the switches are set.

| DISPLAY DATA                                     |  | LCED |
|--|--|------|
| <b>NORMAL DISPLAY</b>                            |  |      |
| - 99°  | Cabinet temperature (item 20 rounded)          |      |
| dEF  | Defrost  |      |
| dEFr   | Defrost recovery                               |      |
| --   | Display data error                             |      |
| <b>ALARM TEXT (in descending priority order)</b> |  |      |
| t.SEn  | All probes faulty, deselected or disconnected  |      |
| Ht   | High cabinet or air off temperature            |      |
| <b>OTHER TEXT</b>                                |  |      |
| JTL  | Start-up text                                  |      |
| LitE   | Lighting status follows this text              |      |
| A.on   | Air on temperature follows this text           |      |
| A.oFF  | Air off temperature follows this text          |      |
| EVAP   | Evaporator temperature follows this text       |      |
| Suct   | Suction line temperature follows this text     |      |
| T.diF  | Superheat temperature follows this text        |      |
| L.dEF  | Time since last defrost follows this text      |      |
| n.dEF  | Time of next defrost follows this text         |      |
| SEt.P  | Cabinet temperature setpoint follows this text |      |