JTL FIRMWARE VARIATIONS		LCIC,LCIP
VERSION	**DESCRIPTION**	**DATE**
v0.00.4	Production Issue NOTE ITEM 163: DO NOT SET TO 100 ON THIS VERSION OF SOFTWARE, ADJUST TO 99 OR LESS.	Apr 96
v0.00.5	Item 163 allowed up to 100%. High suction pressure shutdown facility added, enabled on item 174. PI gain default raised to 20. Minimum superheat default charged to 4.0 on low temperature units. Modifier gain default changed to 10 on low temperature units. Minimum valve opening default set to 0 on low temperature units.	May 96
v0.00.6	Valve period range reduced to 2 - 6. Allows choice of pressure transducer types PTXV18 and PTXV07. Minimum superheat raised to 6.0 on all units. Pressure transducers zero offset range increased to 10 psi.	June 96
v0.00.7	Auto zero pressure facility added. PEV kept closed while network command active. Liquid hold off time not started until network command removed.	July 96
v0.00.8	Pressure transducer fault added on item 98 Pressure indication limited during high pressure as follows: 18 bar transducer on MK1 board - 200.0 psi 18 bar transducer on MK2 board - 250.0 psi 7 bar transducer on MK2 board - 100.0 psi Minimum valve opening default set to 0 on all cases. Pressure transducer type default set to 7 bar Default air off setpoints raised by 3°C Default alarm averaging period set to 90 minutes on LT cases Defrost output operation when set for defrost control corrected	July 96
v0.00.9	Pressure calibration for 7 bar transducers modified. Strategy on faulty transducers changed.	July 96
v0.01.0	Refrigeration cut off facility from network command added. Run refrigeration regardless of setpoint network command facility added. On network initiated defrost forced defrost command now sends instruction to set plant into defrost rather than acting locally. Pressure transducer fault only active on PEV control option. Drain down made operational on all defrost strategies. Pressure transducer function only available with expansion valve control Pressure transducer fault delay added Pump down sequence changed to keep defrost output off in control mode	Oct 96
v0.01.1	Pump down made available on network and contact initiated defrost Defrost information correctly initialised on power up.	Nov 96
v0.01.2	LCIP introduced for selectable dual temperature control. Shutdown added via display (LCD3 type). Excessive Superheat alarm added. Fan control selection operation on network corrected. During excessive Superheat condition the expansion valve output limited 50% of maximum output. Symmetrical delay added on pressure transducer . Fleeting alarm suppression added to all probes faulty. Network lighting control operational when unit shut down. Real time defrost operation changed to prevent 2nd defrost within the maximum defrost duration.	Apr 97

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v0.01.3	Excessive superheat alarm modified to allow higher superheats under certain conditions. Defrost termination sensor choice added on item 144. Separate termination sensor option added on item 141 with selection on item 147. Minimum defrost time added during which time defrost heater will be cycled if the termination temperature is exceeded (item 145). Thermistors allowed up to 95°C before fault indicated. Defrost gas valve shut whenever selected termination temperature is exceeded. Defrost scheduler communications failure invokes learned defrost facility when using network initiated defrost. Fan control hysteresis added. On plant fault network command the fans are stopped and the defrost termination valve "closed". Display pushbutton function mode selection sequence modified to increase security.	Aug 97
v0.01.4	Fans only shutdown function added. R408A refrigerant type added. Option to switch off lights during shutdown added on item 119. Produce cabinet defaults for no of defrosts/day and compressor starts/hour amended. Fans operation during defrost recovery in "Fans on always" mode corrected. Optimiser functions added on items 200 - 203. Air off temperature alarm tolerance added on item 34. Automatic exclusion from suction optimisation added on air sensor fault. Ht alarms disabled when alarm tolerance set to 0.0. Pressure display unit choice added on item 179. Forced defrost alarm added. Communications program by executive called more frequently to reduce communications turn round time for half duplex operation. "Active sign off" added to reduce inter-unit polling delays. Network communications performance information added on items 204 - 207.	June 98
v0.01.5	Fans delay after defrost added on item 109. Display pushbutton test (item 121) amended. Defrost strategy (item 107) default changed to NONE. Defrost relay mode (item 75) default changed to control. Hardware input information on network communications corrected. Time termination strategy corrected. High temperature alarm misoperation in v0.01.4 corrected. Watchdog restart information available on network communications.	July 98
v0.01.6	Temperature choice for display added for Celsius and Fahrenheit on item 122. Automatic network calibration of pressure transducer facility added, selected by item 177. New library software used by executive. Enhanced digital display choice added on item 129. Daylight saving operation added using choice on item 18. Maintenance unit display text improved in line with new software library features. Cabinet temperature factor allowed down to 0.	Mar 99
v0.01.7	Spelling of celsius changed on item 122. NVRAM write handling amended to write to memory after 2 minute delay. Item 9 operation enhanced by allowing NVRAM write without delay by setting value to "1066" Liquid detection control strategy removed. Force pressure average added on item 154 for maintenance purposes. Item 203 suction group available on JTL network communications. Item 206 network zero adjustment range limited to ±15 psi.	May 99

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v0.01.8	Network communication failure alarm added on item 252. Network defrost failure mode enhanced to give choice of learned defrost or fixed schedule. Learned defrost correctly activated in event of plant communications fail. Learned defrost schedule visible on items 261 - 272. Valve open logging added on items 240 and 241. Service datalogging of evaporator temperature error corrected. Factory test date added. Separate minimum superheat and minimum valve opening added for 2 temperature control on items 186 & 187. Maximum no of defrosts a day alarm extended to 12. Learned defrosts problem at midnight corrected. Error where first learned defrost is ignored corrected. Learned defrost saved correctly through a power down of controller.	June 2000
v0.01.9	Mark 2 pcb introduced. Plant data information added on items 211 - 217 for use with Mark 2 optimisers and defrost scheduling. Additional factory information added. Fans only display changed to OFF on LCD8/9 displays. Broadcast "receiving" of site wide data added. Defrost in backup mode alarm added. Input test feature added on item 100.	Nov 2001
V0.02.0	Air off alarm cancelled when no air off sensor selected. Defrost recovery period now lasts for full allowed duration, but when temperature is low enough (as before) dEFr is suppressed on display. Site number recorded. Circuit 0 not allowed on electric defrost data. Unit number range changed to 0.1 to 899.8 Time delay added on detection of defrost scheduler fault before action to override is taken. Network comms initialised to prevent transmit enable on for 10 seconds after power up on Mark 2 boards. Item 412 added to show current defrost strategy in operation. Items 411 & 413 repeat items 107 & 144 for convenience. Temperatures added on items 421 - 425 for test purposes. Note, these temperatures are NOT dependant on sensor selections. Jnet communications level upgraded to 2. Changes to factory settings invokes read of factory data by network controller. Jnet awake enhanced. JTL site number broadcast. Hardware tests fully controllable by network communications. Item 214 (414) enhanced to add gas & off cycle defrosts.	Dec 2003