

<b>JTL FIRMWARE VARIATIONS</b>		<b>LP210/220</b>
<b>VERSION</b>	<b>DESCRIPTION</b>	<b>DATE</b>
v0.00.0	Original issue	Sept 2010
v0.00.1	Misaligned input errors corrected. Download parameter operation supported.	May 2011
v0.00.2	Adjustments to download parameters operation in fault conditions. Refrigerant type 408A added. Refrigerant table for R407A adjusted slightly for dew.	July 2011
v0.00.3	Maximum number of compressors increased to 10 (except Co2) Download parameter fail status error corrected.	Aug 2011
v0.00.4	LP220 introduced with low refrigerant and low oil level inputs. Test items (411 & 431-439) added for temperatures and pressures. Compressor stage change timer reduced from 10s to 5s. Compressor start times reduced from 20s to 5s. If starts per hour set to 0 then starts per hour function disabled. Manual input no longer sets compressor fault alarm. Pressure alarms not set when transducer is faulty. High suction pressure output no longer set during low suction pressure condition.	June 2012
v0.00.5	Inverter fault enabled for display on network. Inverter compressor fault sets compressor fault. Minor improvement in temperature conversion to reduce jitter. Error in inverter run hours calculation corrected.	Oct 2012
v0.00.6	Compressor availability data added on MU & comms. Loaded 1 stage only added for availability clarity. Instant high discharge pressure compressor shutdown operation added selected by item 197. Unload compressor code adjusted to correctly unload the last stage when the inverter is running. Standardized log data items 930 to 946 operation added. Comms protocol level raised to 4.	Jan 2013
v0.00.7	Standardized log data dependancies changed.	Jan 2013
v0.00.8	R407F refrigerant added. General alarm relay added selectable on relay 2 Compressor fault added to critical alarm function on relay output. Data changed flag only set on actual data change. Comms level raised to 5	July 2013
v0.00.9	Mk2 build supported. ADC test items added for test use.	Aug 2013
v0.01.0	Phoenix capability added at Phoenix 3 level. Start address for PROM check sum redefined. End address for PROM checksum corrected. Special cases added for initial power up (1 <sup>st</sup> minute) in both Phoenix and non Phoenix modes. Call to write NVRAM added on default write of unit nos and factory settings. Unsafe data timer initial value extended to 120 sec. Start time moved to Jan 1 <sup>st</sup> 2012 Communications drivers for Phoenix use added. Display backlight control added. R407C, R290, R448A and R449A refrigerants added. Graphic display of alarm flag bits added Temperature difference display functions corrected for fahrenheit use. Sensors 2 & 3 added to fixture datalogs.	July 2016
v0.01.1	Restart inverter pressure setting added. start year 2016. Safety discharge pressure unload delay increased to 5s per stage. Safety discharge pressure unload sets inverters to minimum speed and unloads the inverter when no further staged compressors are available to unload. Exclude from suction optimisation network mode added.	April 2017
v0.01.2	Default settings for inverter restart pressure corrected.	April 2017