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SUCCEEDS® is the patented JTL algorithm for control of liquid injection into an evaporator using electronic expansion valves.

PREDICT® is the patented JTL pattern recognition algorithm for providing defrost on demand for the cabinets on a system

JTL CABINET CONTROLLER ITEM NUMBERS					UBPI	
ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULT	RANGE	ITEM 9 VALUE
<b>1. Jnet NETWORK IDENTIFICATION</b>						
0	Unit type	UBPI	Unit type			
19	Software Version number					
1	Unit number				0.1 - 899.8	
501	Unit number (HGD section)				0.1 - 899.8	
<b>2. TEMPERATURES</b>						
Note: The temperatures can be displayed on the maintenance unit in degrees Celsius or Fahrenheit. The choice is made on item 9392. All setpoint ranges in this document are shown in Celsius.						
20	Estimated cabinet temperature (calculated from Air on and Air off temperatures)					
33	Cabinet temperature ratio (Item 20 calculated as value between Air off and Air on using this ratio)			0, 1, 4 2, 5 3	0 - 80	50 40 60
21	Air on temperature					
36	Air on sensor selection	OFF AO.En	Disabled Enabled		0 - 1	AO.En
22 (522)	Air off temperature					
37 (537)	Air off sensor selection	OFF AF.En	Disabled Enabled		0 - 1	AF.En
23 (523)	Evaporator temperature					
38	Evaporator sensor selection	OFF EP.En	Disabled Enabled		0 - 1	EP.En
24 (524)	Suction line temperature					
39 (539)	Suction line sensor selection	OFF SP.En	Disabled Enabled		0 - 1	SP.En
25 (525)	Temperature difference (Evaporator temp - suction line temp)					
156	Operational Superheat (determined by method on item 197/161)					
141	Termination sensor temperature					
147	Termination sensor selection (Not available when set for HGD/well operation)	OFF tS.En			0 - 1	OFF
259	Saturated vapour temperature (dew)					
247	Site temperature (from broadcast)					
248	Site relative humidity (from broadcast)					
246	Site absolute humidity (from broadcast)					

JTL CABINET CONTROLLER ITEM NUMBERS					UBPI	
ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULT	RANGE	ITEM 9 VALUE
9392	Temperature display unit choice	CELS FAhr	Celsius Fahrenheit		0 - 1	CELS
<b>2.1 HGD SECTION</b>						
500	Enable HGD case monitoring	oFF H.G.d	Disabled Enabled		0 - 1	oFF
520	Estimated cabinet temperature (calculated from Air on and Air off temperatures)					
533	Cabinet temperature ratio (Item 20 calculated as value between Air off and Air on using this ratio)			0, 1, 4 2, 3, 5	0 - 80	75 0
521	Air on temperature					
536	Air on sensor selection	OFF AO.En	Disabled Enabled		0 - 1	AO.En
<b>3. TEMPERATURE ALARMS</b>						
26	Average cabinet temperature error					
526	Average HGD cabinet temperature					
32 (532)	Cabinet overtemperature alarm tolerance	0.0	Disable Ht alarm	0, 1, 3, 4 2, 5	0 - 20	10.0 5.0
480 (540)	Cabinet under temperature alarm tolerance	0.0	Disable LT alarm	0, 1, 4 2, 3, 5	0 to -40	-20.0 -5.0
481 (541)	Overtemperature warning time	00:00	Disable alarm	0, 1, 2, 4, 5 3	00:00 to 23.59	6:00 12:00
482	Cabinet overtemperature accumulated time in last 24 hours					
542	HGD overtemperature accumulated time in last 24 hours					
27 (527)	Average Air off temperature error					
34 (534)	Air off over temperature tolerance	0.0	Disable Ht alarm	0, 1, 4 2, 3, 5	0 - 30	15.0 10.0
47	Period over which averages are taken			0, 1, 4 2, 3, 5	00:30 - 03:00	01:30 01:00

JTL CABINET CONTROLLER ITEM NUMBERS					UBPI	
ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULT	RANGE	ITEM 9 VALUE
<b>4. TEMPERATURE CONTROL</b>						
275	Control temperature	0 1	A.oFF CAb.t	Optimised Air off Cabinet	0 - 1	Cab.t
30 (530)	Current Cabinet temperature Setpoint (see items 123 to 127)					
123	Enable 2nd setpoint	oFF E.2SP	Disabled Enabled		0 - 1	oFF
124	Cabinet temperature setpoint - primary (target for item 20)			0, 1, 4 2, 5 3	-30 to -15 -5 to +10 -5 to +10	-22.0 +1.0 +4.0
125	Alternative cabinet temperature setpoint - secondary Note: When load shedding is used to raise the setpoint to the alternative value the alarm tolerance remains on primary setpoint.			0-1 2 3	-30 to -15 0 to 10 0 to 10	-20.0 5.0 10.0
126	Selected setpoint in operation	Lo Hi	Main setpoint (item 124) Alternative setpoint (item 125)		0 - 1	Lo
31 (531)	Air off setpoint (starting point and lower limit for item 28)			0, 1, 4 2, 5 3	-39 to -20 10 to +5 -10 to +5	-30.0 -6.0 -4.0
28 (528)	Current Optimised Air off temperature setpoint (calculated by controller)					
29 (529)	Current Evaporator temperature setpoint (calculated by controller)					
240	Liquid line valve open percentage for last sample period					
241	Average liquid line valve open percentage over data logging interval period					

JTL CABINET CONTROLLER ITEM NUMBERS					UBPI	
ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULT	RANGE	ITEM 9 VALUE
<b>5. ELECTRONIC EXPANSION VALVE CONTROL</b>						
Note: Pressures can be displayed on the maintenance unit in psi, bar or kPa. The choice is made on item 9393. All setpoint ranges in this document are shown in psi.						
<b>5.1 OPERATIONAL SUPERHEAT</b>						
161	Superheat measurement method	1 2	2t Pt1	2 temperature Pressure transducer	1 - 2	Pt1
197	Current superheat method					
156	Operational Superheat (determined by method on item 197/161)					
152	Suction line temperature					
151	Evaporator temperature					
155	Active suction pressure (gauge)					
340	Local transducer enable	0 1	L.P.t.E L.P.t.d	Enabled Disabled	0 - 1	L.P.t.E
158	Pressure transducer zero offset				-15 to +15	0.0
159	Auto zero pressure transducer offset					
175	Pressure transducer type (selected by refrigerant type item 157)	07 34 60		PTXV07 (-1 to 7 bar) PTXV34 (-1 to 34 bar) PTXV60G (0 to 60 bar)		
177	Pressure transducer calibration method  Note: Auto zero adjustment is shown on item 159. Network zero adjustment is shown on item 206.	0 1 2	nonE A.Pt.O nEt.A	None Auto zero Network adjustment	0 - 2	nonE
178	Rate of fall of superheat to trigger auto zero sequence (°C/min)				1 - 10	3.0
341	Broadcast pressure reading (suction line 1)					
342	Broadcast pressure reading (suction line 2)					
348	Broadcast pressure timeout				30 - 300	60
349	Select broadcast pressure reading	0 1 2		Broadcast disabled Broadcast 1 enabled Broadcast 2 enabled	0 - 2	1
179	Pressure display unit choice	0 1 2 3	nonE PSI bAr PASC	Not selectable (kPa) p.s.i. bar kPa	0 - 3	PSI

JTL CABINET CONTROLLER ITEM NUMBERS					UBPI		
ITEM	DESCRIPTION	CODE		CODE MEANING	FACTORY DEFAULT	RANGE	ITEM 9 VALUE
157	Refrigerant type	1	422D	R422D	0	3 - 15	744
		2	422A	R422A			
		3	404A	R404A			
		4	407A	R407A			
		5	407b	R407B	1	3 - 15	407A
		6	507A	R507A			
		7	408A	R408A			
		8		not used	2, 3	3 - 15	407A
		9	744	R744 (CO2)			
		10	744t	R744 (Transcritical CO2)			
		11	407F	R407F	4, 5	3 - 15	744t
		12	290	R290 (Propane)			
		13	407C	R407C			
		14	R448	R448A			
		15	R449	R449A			
<b>5.2 Jnet NETWORK AUTOMATIC PRESSURE TRANSDUCER CALIBRATION</b>							
204	Unadjusted transducer suction pressure						
205	Jnet network zero adjustment status	FroZ	LivE	Adjustment frozen Adjustment live			
206	Jnet network zero adjustment						
207	Average suction pressure over last hour at evaporator (defrosts are discounted)						
208	Average suction pressure from plant via network						
209	Suction line pressure drop				0, 1, 4 2, 3, 5	0.0 - 10.0	4.0 6.0
154	Force average pressure to current pressure	CLr	F.Av.P	Off Force pressure			
<b>5.3 ELECTRONIC EXPANSION VALVE CONTROL DATA</b>							
188	Superheat control strategy	0	Succ	SUCCEEDS (Floating)		0 - 2	F-SH
		1	Suc.L	Enable upper limit			
		2	F-SH	Fixed superheat			
279	Current superheat control strategy						
189	Superheat setpoint (for fixed and upper limit depending on item 279/188)					4 - 12	6.0
140	Temperature deadband Note: for use with fixed and limited superheat strategies					0.4 - 3.0	2.0
168	Current opening % ((PI x modifier) OR override)						
172	PI output (before modification)						
277	Proportional output						
276	Integral output						
278	Valve control error						
170	Valve control gain (proportional term)				0, 1, 4 2, 3, 5	1 - 100	20 5

JTL CABINET CONTROLLER ITEM NUMBERS					UBPI	
ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULT	RANGE	ITEM 9 VALUE
171	Valve control time constant (integral term)	0 1 - 250	Integral disabled Time constant	0, 1, 4 2, 3, 5	0 - 250	25 100
163	Maximum Valve opening % (PI)				10 - 100	100
164	Minimum Valve opening % (PI) for pressure control strategy				0 - 50	0
187	Minimum valve opening % for 2 temperature control strategy			0, 1, 4 2, 3, 5	5 - 50	5 10
166	Forced Valve opening %				0 - 100	
167	Force valve shut	OFF F.Sht	Off Forced shut		0 - 1	
169	Current Valve status	OFF PE.on	Off On			
173	Maximum time at minimum output	00:00	Not used		00:00 - 00:10	00:05
174	High suction pressure shutdown selection	OFF Hp.on	Disabled Enabled		0 - 1	HP.on
198	Evaporator temperature equalisation shutdown selection	OFF E.E.on	Disabled Enabled		0 - 1	OFF
260	Time since last awake message for equalisation backup operation (mins)				0 - 10	5
<b>5.4 ELECTRONIC EXPANSION VALVE</b> <b>LOW SUPERHEAT STATE DETECTION DATA FOR SUCCEEDS OPERATION</b> Note: This data is not used for fixed superheat operation.						
162	Minimum Superheat for pressure control strategy			0, 1, 4 2, 3, 5	0 - 10	6.0 3.0
186	Minimum superheat for 2 temperature control strategy			0, 1, 4 2, 3, 5	0 - 5.0	4.0 3.0
180	Low superheat status	OFF Or.on	Off Low superheat			
181	Time since last low superheat state (in hr:mn)					
182	Duration of last low superheat state (in secs)					
183	Duration of current low superheat state (in secs)					
184	Accumulated low superheat state time (in secs)					
243	PREDICT low superheat state current average					

JTL CABINET CONTROLLER ITEM NUMBERS					UBPI	
ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULT	RANGE	ITEM 9 VALUE
<b>5.5 ELECTRONIC EXPANSION VALVE</b>						
<b>AUTOMATIC CONTROL MODIFICATION DATA FOR SUCCEEDS OPERATION</b>						
Note: This data is not used for fixed superheat operation.						
185	Time since output last modified by low superheat state (in hr:mn)					
194	Average temperature error over past 5 mins					
190	Modifier value (%)					
191	Modifier error gain			0, 1, 4 2, 3, 5	1 - 100	10 20
192	Modifier error adjustment upper limit (%)				1 - 25	10
193	Time temperature above setpoint before modifier increased				00:01 - 00:20	00:02
195	Modifier increase time constant				1 - 100	10
196	Modifier integral term output					
<b>6. INPUTS &amp; OUTPUTS</b>						
70	Operating mode	rEfr dEfr dF.rc dr.dn Li.Ho Pu.dn Sh.dn	Refrigeration Defrost Defrost recovery Drain down Liquid hold off Pump down Shutdown			
273	Enable plant fault override to stop refrigeration	OFF En.PO	Off Enable plant fault override		0 - 1	En.PO
274	Plant fault input state (input 2)	OFF P.O.On	Off Plant fault			
72	Defrost relay (output 4)	oFF dc.on	Relay deenergised Defrost control on			
74	Fans/Heater relays (output 2)	oFF Fn.on Hr.on	Off Fans on Heater on			
395	Trim heater relay (output 3)	oFF th.on	Off Trim heater on			
106	Auxiliary output selection	0 nonE 1 FAn.S 2 Htr.S	Not used Fan control Heater		0 - 2	FAn.S
113	Lights and blinds (output 1)	on L.OFF	Lights on and blinds up Lights off and blinds down			



JTL CABINET CONTROLLER ITEM NUMBERS					UBPI	
ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULT	RANGE	ITEM 9 VALUE
<b>7. SUCTION PRESSURE OPTIMISATION</b>						
200	Disable suction pressure optimisation for this unit	En.SO di.SO	Enable Disable		0 - 1	En.SO
201	Exclude evaporator from suction pressure optimisation (Data to network)	OFF in.SO	Off Inhibit optimisation			
203	Related suction line from plant controls (Data from network)	nonE Lt Ht SAt	Not selected Low temperature High temperature Satellite			
202	Raw network data for optimiser from plant (Data interpreted on item 203)					
211	Evaporator suction group - Required by Mark 2 optimisers (Data to network)	0 1 2 3	nonE Lt Ht SAt	Not selected Low temperature High temperature Satellite	0 - 3	nonE
212	Operating mode	rEFr dEFr dF.rc dr.dn Li.Ho Pu.dn Sh.dn	Refrigeration Defrost Defrost recovery Drain down Liquid hold off Pump down Shutdown			
217	Plant data to network (binary value interpreted on item 211)					
<b>8. DEFROST CONTROL</b>						
<b>8.1 DATA &amp; STRATEGIES</b>						
40	Duration of last defrost					
41	Time since end of last defrost					
42	Duration of current defrost					
107 (411)	Defrost strategy	0 1 2 3 4 5 6 7 8 9	nonE n.i.L.b rt.in Prdt - n.i.F.b c.d.L.b c.d.F.b	None Not used Network initiated (learned backup) Internal clock initiated Not used Predict operation Not used Network initiated (fixed schedule backup) Coordinated defrost (learned backup) Coordinated defrost (fixed schedule backup)	0 - 9	0.0
412	Current defrost initiation strategy in operation	nonE JnEt rt.in	None Jnet network initiated Internal clock initiated			

JTL CABINET CONTROLLER ITEM NUMBERS					UBPI	
ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULT	RANGE	ITEM 9 VALUE
219	Jnet network defrost arrangement	nonE cord  dEF.S  PrEd	None Defrost co-ordinator present on network Timed defrost scheduler present on network Predict co-ordinator present on network			
69	No of defrosts required per day (Note, when the defrost strategy is set to PREDICT operation, this item is not used. When coordinated defrost is in operation this item sets the number of defrosts a day that are required.)	0 1 - 12	Function disabled No of defrosts		0 - 12	3.0
61	Pump down time				00:00 - 00:10	00:00
<b>8.2 REAL TIME INITIATED DEFROST TIMES</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)						
Time and defrost schedule can be automatically displayed as standard time or daylight saving (summer) time if desired. When daylight saving is operational the displayed schedule is automatically adjusted so that defrost still occur at the same "standard time".						
Note, if daylight saving is set on this unit then in summer time the "defrost disabled" time of 00:00 will be displayed as 00:00 offset by the daylight saving adjustment (normally 60 mins) eg 23:00.						
51	Defrost time 1	00:00 00:01 - 23:59	Defrost disabled Defrost enabled	0, 4 1 2, 5 3	00:00 - 23:59	01:00 02:00 03:00 04:00
52	Defrost time 2	00:00 00:01 - 23:59	Defrost disabled Defrost enabled	0, 4 1 2, 5 3	00:00 - 23:59	07:00 08:00 09:00 10:00
53	Defrost time 3	00:00 00:01 - 23:59	Defrost disabled Defrost enabled	0, 4 1 2, 5 3	00:00 - 23:59	13:00 14:00 15:00 16:00
54	Defrost time 4	00:00 00:01 - 23:59	Defrost disabled Defrost enabled	0, 4 1 2, 5 3	00:00 - 23:59	19:00 20:00 21:00 22:00
55	Defrost time 5	00:00 00:01 - 23:59	Defrost disabled Defrost enabled		00:00 - 23:59	00:00
56	Defrost time 6	00:00 00:01 - 23:59	Defrost disabled Defrost enabled		00:00 - 23:59	00:00
60	Defrost schedule selection	24 hr 12 hr	24 hour schedule 12 hour schedule		0 - 1	24 hr
43	Time next defrost is due					
<b>8.3 Jnet NETWORK INITIATED DEFROST</b>						
46 (215)	Jnet Network initiated defrost command status	P.dEF F.dEF nonE	Defrost Forced defrost No command			
261 to 272	Defrost schedule (12 times starting at item 261 through to 272)					

JTL CABINET CONTROLLER ITEM NUMBERS					UBPI	
ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULT	RANGE	ITEM 9 VALUE
<b>8.4 COORDINATED DEFROST INITIATION</b>						
This information is for use by defrost schedulers and for PREDICT defrost (8.5)						
69	No of defrosts required per day (Note, when the defrost strategy is set to PREDICT operation, this item is not used. When coordinated defrost is in operation this item sets the number of defrosts a day that are required.)	0 1 - 12	Function disabled No of defrosts		0 - 12	3.0
224	Time since the start of last defrost					
216	Defrost requirement to defrost coordinator					
223	Defrost requirement priority				1 - 8	1.0
211	Evaporator suction group	0 1 2 3	nonE Lt Ht SAT	Not selected Low temperature High temperature Satellite		0 - 3 nonE
214 (414)	Defrost heater choice	0 1 2 3 4 5 6	brn blac GrEY 3 - Ph  oFF.C	Electric brown phase Electric black phase Electric Grey phase Electric 3 phase Not used Not used Off cycle		0 - 6 3-ph
213	Electric circuit choice (depends on item 214)	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	cct1 cct2 cct3 cct4 cct5 cct6 cct7 cct8 cct9 cc10 cc11 cc12 cc13 cc14 cc15 cc16 cc17 cc18 cc19 cc20 cc21 cc22 cc23 cc24 cc25 cc26 cc27 cc28 cc29 cc30 cc31	Circuit 1 Circuit 2 Circuit 3 Circuit 4 Circuit 5 Circuit 6 Circuit 7 Circuit 8 Circuit 9 Circuit 10 Circuit 11 Circuit 12 Circuit 13 Circuit 14 Circuit 15 Circuit 16 Circuit 17 Circuit 18 Circuit 19 Circuit 20 Circuit 21 Circuit 22 Circuit 23 Circuit 24 Circuit 25 Circuit 26 Circuit 27 Circuit 28 Circuit 29 Circuit 30 Circuit 31		1 - 31 cct1
210	Electrical distribution Panel No.				0 - 7	0

JTL CABINET CONTROLLER ITEM NUMBERS					UBPI	
ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULT	RANGE	ITEM 9 VALUE
215 (46)	Jnet network initiated defrost command status (repeats item 46)	P.dEF F.dEF nonE	Defrost Forced defrost No command			
217	Evaporator data to plant					
220	Defrost coordinator status	oFF cord	No defrost coordinator Defrost coordinator present on network			
<b>8.5 JTL PREDICT DEFROST INITIATION</b> See also information in 8.4						
225	Minimum time between defrosts (hours)				2 - 12	6
226	Maximum time between defrosts (hours)				6 - 72	24
<b>8.5.1 PREDICT 1 OPERATION</b> PREDICT 1 operation is associated with SUCCEEDS superheat control as set on Item 188						
242	PREDICT low superheat state initiation level (%)				0 - 100	25.0
243	PREDICT low superheat state current average (%)					
<b>8.5.2 PREDICT 3 OPERATION</b> PREDICT 3 operation is associated with fixed superheat control as set on Item 188						
227	Number of samples to discard from top & bottom of sorted list				0 - 3	1
228	PREDICT 3 volatility integral setpoint				2.0 - 12.0	6.0
229	PREDICT 3 volatility integral					
230	Current PREDICT 3 volatility					
231	Long run PREDICT 3 volatility					
232	Ratio of current PREDICT 3 volatility/long run volatility					
233	Mean value from PREDICT 3 sampling array					
234	Minimum value from PREDICT 3 sampling array					
235	Maximum value from PREDICT 3 sampling array					
236	Average reading in last complete PREDICT 3 sample (frame)					
237	Latest reading					
281 to 296	Array of superheat readings in current samples (frame)					
301 to 316	Array of average reading samples (frames)					

JTL CABINET CONTROLLER ITEM NUMBERS					UBPI	
ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULT	RANGE	ITEM 9 VALUE
321 to 336	Sorted array of average reading samples (frames)					
<b>8.6 DEFROST TERMINATION</b>						
144	Termination method selection (Termination sensor not available when selected for HGD/well case operation)	1 2 3 4	EuAP A.OFF tEr tot	Evaporator sensor Air off sensor Termination sensor Time only		1 - 4  A.off
141	Termination sensor temperature					
147	Termination sensor selection	OFF tS.En	Disabled Enabled		0 - 1	OFF
50	Defrost termination temperature (the sensor used is available on item 144)			0, 1, 4 2, 5 3	0 - 20	15.0 12.0 20.0
145	Minimum defrost duration (Defrost heater cycles on termination temperature (item 50) as required during this time)				00:00 - 00:30	00:10
57	Maximum defrost duration			0, 1, 4 2, 5 3	00:05 - 00:59	00:20 00:20 00:40
59	Drain down duration				00:00 - 00:10	00:05
49	Liquid hold off duration (starts when drain down completed)				00:00 - 00:10	00:00
<b>8.7 DEFROST 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 (Note, when item 412 is indicating Jnet network initiated defrost. Forced defrost sends the command to the plant for action. It is NOT actioned locally)	OFF Fd.on	Off Forced defrost on		0 - 1	
78	Inhibit defrost	OFF no.dF	Off No defrosts		0 - 1	
79	Forced refrigeration	OFF Fr.on	Off Forced refrigeration		0 - 1	
222	Enable forced defrost requirement to defrost coordinator	oFF F.r.En	Disabled Enabled		0 - 1	0
221	Forced defrost requirement to defrost coordinator (requires item 222 set to 1)	0 - 63	Forced value			

JTL CABINET CONTROLLER ITEM NUMBERS					UBPI	
ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULT	RANGE	ITEM 9 VALUE
<b>9. FAN CONTROL</b>						
108	Fan control (106 must be set to FAn.S)  Note: When "Fan runs always" is selected the fans DO NOT stop during or after defrost.	1 2 3 4 5	F.on F.oFF F.c.d.d F.c.d.t F.on.d	Fan runs always Fan off during defrost Fan controlled during defrost on evaporating temperature Fan controlled during defrost on termination temp (v0.00.8 on) Fan on during defrost	0, 1, 4 2, 3, 5	1 - 5  F.oFF F.on
146	Temperature to turn fan off during defrost. Depends on item 108				0, 1, 4 2, 3, 5	-12 to -2 0 to 20 -7.0 10.0
153	Fan control after defrost (106 must be set to FAn.S) Temperature set on item 150  If item 109 is non zero the fans will start on time if the temperature is not reached.	0 1 2 3	F.r.i.d F.r.o.t F.r.E.t F.r.t.t	Fans restart immediately Fans restart on time delay Fans restart on evaporate temperature Fans restart on termination temperature.		0 - 3  F.r.i.d
150	Temperature to bring fan on after defrost. Depends on item 153				0, 1, 4 2, 3, 5	20 to -10 -5 to 5 -15.0 0.0
109	Fan delay after defrost (106 must be set to Fans)			Fan sequence depends on item 153		00:00 - 00:10 00:00
<b>10. TRIM HEATER CONTROL</b>						
390	Control strategy	1 2 3 4 5	nonE oFF 24hr trad Jnet	No control Off when isolated Fixed adjustment Fixed with non-trading adjustment Network adjustment		up to v0.00.1 1 - 4 oFF v 0.00.2 on 1 - 5 oFF
391	Actual output (% of full power)					
392	Fixed output. Used for strategy 3 and as a base for strategies 4 & 5.					0 - 100% 50%
393	Non-trading hours adjustment					0 - 100% 75%
394	Network delivered adjustment					
395	Trim heater relay		oFF th.on	Off Trim heater on		
396	Load shedding adjustment					0 - 100% 100%

JTL CABINET CONTROLLER ITEM NUMBERS					UBPI	
ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULT	RANGE	ITEM 9 VALUE
<b>11. Jnet NETWORK LIGHTING CONTROL</b>						
Forced functions remain forced if the Maintenance Unit remains plugged in. They are automatically cancelled 30 minutes after the Maintenance Unit is unplugged.						
110	Select Jnet network lighting control	OFF LC.on	off Lighting control function selected		0 - 1	LC.on
113	Lights and blinds	on L.OFF	Lights on and blinds up Lights off and blinds down			
111	Jnet network lighting unit network command	LU.Co nonE	Lighting off command No command			
112	Select timer for lights off broadcast	0 1 - 8	Disabled Timer number		0 - 8	0
118	Lighting contactor type selection (shown for lights-on state)	n.o n.c	normally open normally closed		0 - 1	n.c
119	Lights off during shutdown selection	OFF En.L.S	Off Lights off during shutdown		0 - 1	Off
114	Force lights on	OFF L.on	Off Lights on		0 - 1	
115	Force lights off	OFF L.OFF	Off Lights off		0 - 1	
<b>12. Jnet COMMAND FUNCTIONS</b>						
62	Jnet network controlled Shutdown selection	oFF Sh.dn	Disabled Enabled		0 - 1	oFF
63	Jnet network command for shutdown	nonE Sh.dn FAn.S	No command Shutdown Fans only shutdown			
133	Enable plant to override temperature control and run refrigeration regardless of the temperature setpoint	Off nrc.E	Disabled Enabled		0 - 1	Off
134	Enable Jnet Network command to cut off refrigeration and/or defrost in the event of a plant fault	0 1 2 3	Off In.d.r In.r.F In.dF		0 - 3	Off
135	Jnet network commands	nonE O.S.df  PL.Ft P.C.Ft	No command Other associated systems on defrost Plant fault Plant comms fault			
238	Select times for shutdown control	0 1-8	Disabled Timer number		0 - 8	0
239	Shutdown command status	Clr t.S.dn	Normal Shutdown			

JTL CABINET CONTROLLER ITEM NUMBERS					UBPI	
ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULT	RANGE	ITEM 9 VALUE
<b>13. DISPLAY FUNCTIONS</b>						
122	Temperature display unit choice	CELS FAhr	Celsius Fahrenheit		0 - 1	CELS
136	Enable fans only operation from display switch	Off E.d.Fo	Disable Enable		0 - 1	E.d.Fo
138	Enable Shutdown from display switch	OFF E.d.Sd	Disable Enable		0 - 1	Off
121	Display switch status	Si - - Si1 - Si- 2 Si12	OFF Position 1 Position 2 Both			
502	Enable 2nd display	oFF 2.dPY	Disabled Enabled		0 - 1	oFF
199	Backlight control	0 1 2 3	B.oFF BL.on BL.F.F BL.n.F	Backlight off Backlight on Backlight off, flashes for alarm Backlight on, flashes for alarm	0 - 3	
<b>14. LOAD SHEDDING</b>						
600	Enable load shedding	0 1	off L.S.En	Disabled Enabled	0 - 1	oFF
601	Inhibit defrost	0 1-8		Disabled Global plant input no	0 - 8	0
602	Inhibit refrigeration	0 1-8		Disabled Global plant input no	0 - 8	0
603	Fans off	0 0-8		Disabled Global plant input no	0 - 8	0
604	Lights off	0 0-8		Disabled Global plant input no	0 - 8	0
605	Raise set point to alternative (item 125)	0 0-8		Disabled Global plant input no	0 - 8	0
607	Reduce trim heat	0 0-8		Disabled Global plant input no	0 - 8	0
<b>15. CLOCK CALENDAR</b>						
<p>Note, the time and date can be displayed as standard or daylight saving (summer) time. This choice is made on item 18. When daylight saving is chosen and the controller is connected to a JTL Network Controller supporting daylight saving operation, the change is made automatically to the current EU directive.</p>						
2	Time of day				00:00 - 23:59	
3	Day of week	Sun - Sat	0 = Sunday 1 = Monday etc			
4	Date				01:01 - 31:12	
5	Year				2019 - 2099	
18 (9395)	Daylight saving enable	Stnd dAY.S	Standard time Daylight saving time		0 - 1	Stnd













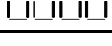
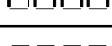
JTL CABINET CONTROLLER ITEM NUMBERS					UBPI	
ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULT	RANGE	ITEM 9 VALUE
<b>16. RESTORE FACTORY DEFAULTS</b> To set the factory defaults into the memory of the controller, first set the virtual bitswitches as shown, then set item 9 to the set default value of "1234". This should be done on initial commissioning of the unit or when the unit is being installed as a replacement part.						
966	Virtual bitswitch setting	0 1 2 3 4 5	Frozen food (CO2) Frozen food Chiller Produce (off cycle) Frozen food (Transcritical CO2) Chiller (Transcritical CO2)			
9	Set default values selected by bitswitch	1234	Set default values			
	Note: Setting the virtual bitswitches alone has no affect	1066	Write to NVRAM without delay			
<b>17. RESTORE PARAMETERS FROM NETWORK</b> To restore the data from the network first set the factory defaults and set the appropriate unit number on item 1. Then check item 965 to see if this facility is available on the network. The information on item 965 is received from a network broadcast every few minutes. If the restore parameter facility is available and operational then item 965 will be set to a non zero number e.g. 2. To request restore parameters set item 964 to 1234. Item 963 displays parameters restore progress. When all parameters are downloaded item 964 is cleared to 0.						
965	Master database port	0 1 - 4	Not in use NC port no			
964	Set restore parameters from network	1234	Request restore			
963	Parameters restore progress	rdy dnl.r din.P dnl.c FAIL	Restore function possible Restore requested Restore in progress Restore complete Restore fault			
959	Requested template	0 1-9999	As commissioned Template number		0 - 9999	

JTL CABINET CONTROLLER ITEM NUMBERS					UBPI	
ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULT	RANGE	ITEM 9 VALUE
<b>18. SYSTEM ALARMS</b>						
80	Group alarm 81 - 88	Graphical	See display data			
81	Cabinet overtemperature	CLr C.Ht	No fault Fault			
82	Air off overtemperature	CLr A.Ht	No fault Fault			
83	Air on sensor fault	CLr AO.Pr	No fault Fault			
84	Air off sensor fault	CLr AF.Pr	No fault Fault			
86	Plant alarm	CLr AL.iP	No fault Plant alarm			
87	Shutdown alarm	CLr Sh.dn	No fault Fault			
88	All sensors faulty, deselected or disconnected	CLr t.SEn	No fault Fault			
490	Group alarms 491 - 498	Graphical	See display data			
491	Low temperature	CLr C.Lt	No fault Fault			
492	Overtemperature warning	CLr C.I.Ht	No fault Fault			
493	Overtemperature warning timeout	CLr C.I.to	No fault Fault			
494	High pressure shutdown	CLr H.P.Sd	No fault High pressure shutdown			
495	Evaporator temperature equalisation shutdown	CLr E.E.Sd	No fault Evaporator equalisation shutdown			
90	Group alarm 91 - 98	Graphical	See display data			
91	Termination sensor fault	CLr dt.Pr	No fault Fault			
92	Evaporator sensor fault	CLr EP.Pr	No fault Fault			
93	Suction line sensor fault	CLr SL.Pr	No fault Fault			
94	Expected defrosts have not been detected (Note, This alarm normally depends on the setting in item 69. When the defrost initiation strategy is set to PREDICT the alarm occurs 3 hours after the defrost requirement has been set when no defrost has occurred).	CLr dEF.F	No fault Fault			
97	Excessive Superheat fault	CLr Hi.Sh	No fault Fault			
98	Pressure transducer fault	CLr Pt.FL	No fault Fault			
250	Group alarms 251 - 258	Graphical	See display data			

JTL CABINET CONTROLLER ITEM NUMBERS					UBPI	
ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULT	RANGE	ITEM 9 VALUE
251	Forced defrost activated	CLr F.dEF	No fault Forced defrost			
252	Network communications failure	CLr FAIL	No fault Comms failure			
258	Backup defrost strategy in operation	CLr d.bAc	No fault Backup defrost			
510	Group alarms 511 - 518	Graphical	See display data			
511	HGD cabinet over temperature	CLr C.Ht	No fault Fault			
512	Air off overtemperature	CLr A.Ht	No fault Fault			
513	HGD air on sensor fault	CLr AO.Pr	No fault Fault			
514	Air off sensor fault	CLr AF.Pr	No fault Fault			
515	Sensor power supply fault	CLr PS.Ft	No fault Fault			
516	Plant alarm	CLr AL.iP	No fault Plant alarm			
517	Shutdown alarm	CLr Sh.dn	No fault Fault			
518	All sensors faulty, deselected or disconnected	CLr t.SEn	No fault Fault			
550	Group alarms 551 -558	Graphical	See display data			
551	HGD low temperature	CLr C.Lt	No Fault Fault			
552	HGD Overtemperature warning	CLr C.I.Ht	No fault Fault			
553	HGD Overtemperature warning timeout	CLr C.I.to	No fault Fault			
554	High pressure shutdown	CLr H.P.Sd	No fault High pressure shutdown			
555	Evaporator temperature equalisation shutdown	CLr E.E.Sd	No fault Evaporator equalisation shutdown			

JTL CABINET CONTROLLER ITEM NUMBERS					UBPI	
ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULT	RANGE	ITEM 9 VALUE
<b>19. DIAGNOSTIC &amp; TEST FUNCTIONS</b>						
44	Power off duration					
6	Communications speed (in kilo baud)	4.8	Baud rate			
7	Communications (Half duplex)	HALF	2 wire			
967	Latest unit no polled on zone					
973	Latest polling interval This time shows the polling interval between the last two untimed network broadcast message sequences to this unit.	min:sec				
974	Time since last awake message	min:sec				
8	Virtual bitswitch setting	F.C02 F.hFc Chil OFF.C F.tr.C C.tr.C	Frozen food (CO2) Frozen food (HFC) Chiller Produce (off cycle) Frozen food (transcritical CO2) Chiller (Transcritical CO2)			
89	Sensor excitation value (Factory test)		Not used			
99	Test digital display	CLr SEt	Not active Test active		0 - 1	
100	Test inputs	iP - - iP1 - iP - 2 iP12	No inputs Input 1 on Input 2 on Both inputs on			
101	Test output relays	CLr SEt	Not active Test active		0 - 1	
121	Display switch status	Si - - Si1 - Si- 2 Si12	OFF Position 1 Position 2 Both			
421	Temperature sensor 1 reading					
422	Temperature sensor 2 reading					
423	Temperature sensor 3 reading					
424	Temperature sensor 4 reading					
425	Temperature sensor 5 reading					
428	Temperature sensor open circuit indication	0 1 2	No fault Sensor 5 Sensor 4			
429	Temperature sensor short circuit indication	4 8 16	Sensor 3 Sensor 2 Sensor 1			
204	Unadjusted suction pressure					
10	Processor alarms (11 - 17)	Graphical	See display data			
16	NVRAM fault	CLr h.Ft	No fault Fault			

DISPLAY DATA		UBPI
	Fans running	
	Defrost recovery	
	Defrost	
	Fault condition	
- 99°	Cabinet temperature (item 20 rounded)	
dEF	Defrost & defrost recovery	
Off	Unit Shutdown or fans only mode (indicated by fan symbol)	
--	Display data error	
<b>ALARM TEXT (in descending priority order)</b>		
SEn	All sensors faulty, deselected or disconnected	
Ht	High cabinet temperature	
Lt	Low cabinet temperature	
A.IP	Plant alarm	
<b>OTHER TEXT</b>		
JtL	Start-up text	
Lo	Switched to primary setpoint	
Hi	Switched to secondary setpoint	

GRAPHICAL DISPLAY OF BIT DATA		
	bit	Graphic
Graphical display of bit data used on items where the data was shown previously as a decimal value	None	
	1	
	2	
	3	
	4	
	5	
	6	
	7	
	8	