JTL CABINET CONTROLLER ITEM NUMBERS	LAPE

CONTENTS

	JTL CABINET CONTROLLER ITEM NUMBERS					**LAPE**	
ITEM	**DESCRIPTION**	**CODE**	**CODE MEANING**	**BIT**	**RANGE**	**ITEM 9**	
				4321		**VALUE**	
1. Jnet NETWORK IDENTIFICATION							
0	Unit type	LAPE	Unit type				
19	Software Version number						
1	Unit number				0.1 - 899.8		
2. TEMPERATURES							
Note: The temperatures can be displayed on the maintenance unit in degrees Celsius or Fahrenheit. The choice is made on item 122. 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)			xxCC xxCO xxOC xxOO	0 - 80 0 - 80 0 - 80 0 - 80	50 50 40 60	
21	Air on temperature						
36	Air on sensor selection	OFF AO.En	Disabled Enabled		0 - 1	AO.En	
22	Air off temperature						
37	Air off sensor selection	OFF AF.En	Disabled Enabled		0 - 1	AF.En	
23	Evaporator temperature						
38	Evaporator sensor selection	OFF EP.En	Disabled Enabled		0 - 1	EP.En	
24	Suction line temperature						
39	Suction line sensor selection	OFF SP.En	Disabled Enabled		0 - 1	SP.En	
25	Superheat (Evaporator temp - suction line temp)						
141	Termination sensor temperature						
147	Termination sensor selection	OFF tS.En			0 - 1	OFF	
131	Energy saving sensor temperature						
130	Energy saving sensor enabled	OFF E.S.En	OFF Enabled		0 - 1	OFF	
247	Site temperature (from broadcast)						
248	Site humidity (from broadcast)						
122	Temperature display unit choice	CELS FAhr	Celsius Fahrenheit		0 - 1	CELS	

ITEM	DESCRIPTION	CODE		CODE MEANING	BIT 4321	RANGE	ITEM 9 VALUE
JTL CABINET CONTROLLER ITEM NUMBERS — **LAPE**
3. TEMPERATURE ALARMS
26	Average cabinet temperature error						
32	Cabinet overtemperature alarm tolerance	0.0		Disable Ht alarm	xxCC xxCO xxOC xxOO	0 - 20 0 - 20 0 - 20 0 - 20	10 10 5 10
27 (431)	Average Air off temperature error						
34	Air off over temperature tolerance	0.0		Disable Ht alarm	xxCX xxOX	0 - 30 0 - 30	15 10
47	Period over which averages are taken				xxCx xxOx	00:30 - 03:00	01:30 01:00
4. TEMPERATURE CONTROL
30	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)				xxCC xxCO xxOC xxOO	-30 to -15 -30 to -15 -5 to +10 -5 to +10	-20 -26 +1 +4
125	Alternative cabinet temperature setpoint - secondary				xxCC xxCO xxOC xxOO	-30 to -15 -30 to -15 0 to 10 0 to 10	-20 -26 5 10
126	Selected setpoint in operation	Lo Hi		Main setpoint (item 124) Alternative setpoint (item 125)		0 - 1	Lo
31	Air off setpoint (starting point and lower limit for item 28)				xxCC xxCO xxOC xxOO	- 39 to -20 - 39 to -20 - 10 to +5 - 10 to +5	- 27 - 33 - 6 - 4
48	Max starts/hour (Anti-shortcycling timer when using liquid valve relay to control a condensing unit)	0 1 2 3	unLm 10.PH 15.PH 20.PH	Unlimited 10 starts per hour 15 starts per hour 20 starts per hour		0 - 3	unLm
28	Current Air off temperature setpoint (calculated by controller)						
29	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						

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5. ELECTRONIC EXPANSION VALVE CONTROL

Note: Pressures can be displayed on the maintenance unit in psi, bar or kPa. The choice is made on item 179. All setpoint ranges in this document are shown in psi. (Note: for electronic expansion valve [PEV] control, item 160 must be set on)

5.1 OPERATIONAL SUPERHEAT

ITEM	DESCRIPTION	CODE	CODE MEANING	BIT 4321	RANGE	ITEM 9 VALUE
161	Control strategy	2t Pt1	2 temperature Pressure transducer		1 - 2	Pt1
156	Operational Superheat (determined by strategy set on item 161)					
152	Suction line temperature					
151	Evaporator temperature					
155	Suction pressure (guage)					
158	Pressure transducer zero offset				-10.0 to +10.0	0.0
159	Auto zero pressure transducer offset					
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.0 nEt.A	None Auto zero Network adjustment		0 - 2	nonE
178	Rate of fall of superheat to trigger auto zero sequence (°C/min)				1.0 - 10.00	3.0
179	Pressure display unit choice	0 1 2 3	nonE PSI bAr PASC	Not selectable (kPa) p.s.i. bar kPa		0 - 3	PSI
157	Refrigerant type	0 1 2 3 4 5 6 7	nonE 22 502 404A 407A 407b 507A 408A	None R22 R502 R404A R407A R407B R507A R408A		1 - 7	404A

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ITEM	**DESCRIPTION**	**CODE**	**CODE MEANING**	**BIT** **4321**	**RANGE**	**ITEM 9 VALUE**
5.2 Jnet NETWORK AUTOMATIC PRESSURE TRANSDUCER CALIBRATION						
204	Unadjusted 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			xxCx xxOx	0.0 - 10.0	4.0 6.0
154	Force average pressure to current pressure	CLr F.Av.P	Off Force pressure			

ITEM	DESCRIPTION	CODE	CODE MEANING	BIT 4321	RANGE	ITEM 9 VALUE
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ITEM	DESCRIPTION	CODE	CODE MEANING	BIT 4321	RANGE	ITEM 9 VALUE
5.3 ELECTRONIC EXPANSION VALVE CONTROL DATA					
160	Select electronic expansion valve control	OFF E.C.En	OFF Electronic expansion valve control		0 - 1	E.C.En
168	Current opening % ((PI x modifier) OR override)					
172	PI output (before modification)					
170	Valve control gain (proportional term)				1 - 100	20
171	Valve control time constant (integral term)	0 1 - 250	Integral disabled Time constant		0 - 250	20
162	Minimum Superheat for pressure control strategy				0 - 10.0	6.0
186	Minimum superheat for 2 temperature control strategy			xxCx xxOx	0 - 5.0 0 - 5.0	4.0 3.0
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			xxCx xxOx	5 - 50 5 - 50	5 10
165	Pulsed valve period control	2 3.1 3 4.7 4 6.25 5 7.8 6 9.4	Pulse width period for valve (in seconds) (n/64 x 100 s) where n=setting		2 - 6	6.25
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
5.4 ELECTRONIC EXPANSION VALVE OVERRIDE DATA					
180	Superheat override status	OFF Or.on	Off Override on			
181	Time since last override (in hr:mn)					
182	Duration of last override (in secs)					
183	Duration of this override (in secs)					
184	Accumulated override time (in secs)					
185	Time since output last modified by override (in hr:mn)					

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ITEM	**DESCRIPTION**	**CODE**		**CODE MEANING**	**BIT**	**RANGE**	**ITEM 9 VALUE**
					4321		
5.5 ELECTRONIC EXPANSION VALVE MODIFIER DATA							
194	Average temperature error over past 5 mins						
190	Modifier value (%)						
191	Modifier error gain				xxCx xxOx	1 - 100 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	00:05
195	Modifier increase time constant					1 - 100	10
196	Modifier integral term output						
6. INPUTS & OUTPUTS							
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			
71	Inputs	IP- - IP1 - IP- 2 IP12		No inputs Defrost input on Lighting override input on Both inputs on			
72	Defrost relay (function depends on item 75)	oFF dt.on dc.on		Relay deenergised Defrost termination on Defrost control on			
73	Liquid solenoid relay	OFF LS.on		Off Demanding refrig.			
74	Fans/Heater relays	oFF Fn.on Hr.on		Off Fans on Heater on			
395	Trim heater relay (v0.00.2 on)	oFF th.on		Off Trim heater on			
75	Defrost relay mode selection	d.tEr d.Con		Defrost termination Defrost control		0 - 1	d.con
106	Auxiliary output selection	0 1 2	nonE FAn.S Htr.S	Not used Fan control Heater		0 - 2	Not used

ITEM	DESCRIPTION	CODE		CODE MEANING	BIT 4321	RANGE	ITEM 9 VALUE
JTL CABINET CONTROLLER ITEM NUMBERS — **LAPE**						
7. SUCTION PRESSURE OPTIMISATION						
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		0ff Inhibit from suction 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 (Binary 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 Frain down Liquid hold off Pump down Shutdown			
217	Plant data to network (binary value interpreted on item 211)						

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ITEM	DESCRIPTION	CODE	CODE MEANING	BIT	RANGE	ITEM 9 VALUE	
				4321			
8. DEFROST CONTROL							
8.1 DATA & STRATEGIES							
40	Duration of last defrost						
41	Time since end of last defrost						
42	Duration of current defrost						
411 (107)	Defrost strategy	0 1 2 3 4 5 6 7 8 9	nonE SL.in n.i.L.b rt.in iP.in Prdt - n.i.F.b c.d.L.b c.d.F.b	None Suction initiated Network initiated (learned backup) Internal clock initiated External clock initiated Predict operation Not used Network initiated (fixed schedule backup) Coordinated defrost (learned backup) Coordinated defrost (fixed schedule backup)		0 - 9	0
412	Current defrost initiation strategy in operation	nonE SL.in JnEt rt.in iP.in	None Suction initiated Jnet network initiated Internal clock initiated External clock initiated			
69	No of defrosts required per day (Note, when the defrost strategy is set to PREDICT operation, this item is not available. When the defrost strategy is set to coordinated defrost this item sets the number of defrosts a day that are required.)	0 1 - 12	Function disabled No of defrosts		0 - 12	3
61	Pump down time				00:00 - 00:10	00:00

ITEM	DESCRIPTION	CODE	CODE MEANING	BIT 4321	RANGE	ITEM 9 VALUE
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ITEM	DESCRIPTION	CODE	CODE MEANING	BIT 4321	RANGE	ITEM 9 VALUE
8.2 REAL TIME INITIATED DEFROST TIMES 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".
51	Defrost time 1	00:00 00:01 - 23:59	Defrost disabled Defrost enabled	xxCC xxCO xxOC xxOO	00:00 - 23:59 00:00 - 23:59 00:00 - 23:59 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	xxCC xxCO xxOC xxOO	00:00 - 23:59 00:00 - 23:59 00:00 - 23:59 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	xxCC xxCO xxOC xxOO	00:00 - 23:59 00:00 - 23:59 00:00 - 23:59 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	xxCC xxCO xxOC xxOO	00:00 - 23:59 00:00 - 23:59 00:00 - 23:59 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					
8.3 SUCTION INITIATED DEFROST
58	Defrost initiation temperature (suction line sensor)			xxCC xxCO xxOC xxOO	-5 - +20 -5 - +20 0 - 20 0 - 20	0 0 +15 +10
8.4 CONTACT INITIATED DEFROST
65	Invert defrost input	no YES	Input=defrost No input=defrost		0 - 1	no
8.5 Jnet NETWORK INITIATED DEFROST
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)					

ITEM	DESCRIPTION	CODE		CODE MEANING	BIT 4321	RANGE	ITEM 9 VALUE
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colspan							

ITEM	DESCRIPTION	CODE		CODE MEANING	BIT 4321	RANGE	ITEM 9 VALUE
8.6 COORDINATED DEFROST INITIATION This information is for use by defrost schedulers							
69	No of defrosts required per day (Note, when the defrost strategy is set to PREDICT operation, this item is not available. When the defrost strategy is set to coordinated defrost this item sets the number of defrosts a day that are required.)	0 1 - 12		Function disabled No of defrosts		0 - 12	3
224	Time since the start of last defrost (v0.02.1 on)						
216	Defrost requirement to defrost coordinator						
223	Defrost requirement priority					1 - 8	1
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	rEd YELL bLuE 3 - Ph GAS.2 GAS.3 oFF.C	Electric red phase Electric yellow phase Electric blue phase Electric 3 phase 2 pipe gas 3 pipe gas Off cycle		0 - 6	rEd
213	Electric circuit choice (depends on item 214)	1 2 3 4 5 6 7	cct1 cct2 cct3 cct4 cct5 cct6 cct7	Circuit 1 Circuit 2 Circuit 3 Circuit 4 Circuit 5 Circuit 6 Circuit 7		1 - 7	1
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						
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			
220	Defrost coordinator status	oFF cord		No defrost coordinator Defrost coordinator present on network			

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ITEM	**DESCRIPTION**	**CODE**	**CODE MEANING**	**BIT** **4321**	**RANGE**	**ITEM** **9** **VALUE**	
8.7 JTL PREDICT DEFROST INITIATION							
225	Minimum time between defrosts (hours)				2 - 8	6	
226	Maximum time between defrosts (hours)				6 - 72	24	
227	Number of samples to discard from top & bottom of sorted list				0 - 3	1	
228	PREDICT volatility integral setpoint				2.0 - 12.0	6.0	
229	PREDICT volatility integral						
230	Current PRECICT volatility						
231	Long run PREDICT volatility						
232	Ratio of current PREDICT volatility/long run volatility						
233	Mean value from PREDICT sampling array						
234	Minimum value from PREDICT sampling array						
235	Maximum value from PREDICT sampling array						
236	Average reading in last complete PREDICT 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)						
321 to 336	Sorted array of average reading samples (frames)						

ITEM	DESCRIPTION	CODE		CODE MEANING	BIT 4321	RANGE	ITEM 9 VALUE

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ITEM	DESCRIPTION	CODE		CODE MEANING	BIT 4321	RANGE	ITEM 9 VALUE
8.8 DEFROST TERMINATION							
144	Termination method selection	1 2	EuAP A.OFF	Evaporator sensor Air off sensor	xxCX xxOC	1 - 4	EuAP
		3 4	tEr tot	Termination sensor Time only	xxOO	1 - 4	tot
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)				xxCC xxCO xxOC xxOO	0 - 20 0 - 20 0 - 20 0 - 20	15 15 12 20
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				xxCC xxCO xxOC xxOO	00:05 - 00:40 00:05 - 00:40 00:05 - 00:59 00:05 - 00:59	00:20 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
8.9 DEFROST FORCING FUNCTIONS 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 then 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			

ITEM	DESCRIPTION	CODE		CODE MEANING	BIT 4321	RANGE	ITEM 9 VALUE
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ITEM	DESCRIPTION	CODE		CODE MEANING	BIT 4321	RANGE	ITEM 9 VALUE
9. FAN CONTROL							
108	Fan control (106 must be set to FAn.S)	1 2 3	F.on F.oFF F.c.d.d	Fan runs always Fan off during defrost Fan controlled during defrost		1 - 3	F.on
146	Temperature to turn fan off during defrost. Depends on item 108				xxCx xx0x	-12.0 to -2.0 0.0 to 20.0	-7.0 10.0
109	Fan delay after defrost	00:00		Fans cycle on evap temperature		00:00 - 00:10	00:00
150	Temperature to bring fan on after defrost. Depends on item 108				xxCx xx0x	-20.0 to -10.0 -5.0 to 5.0	-15.0 0.0
130	Fan control sensor enabled	OFF E.S.En		OFF enabled		0 - 1	OFF
131	Fan control sensor temperature						
132	Fan control setpoint				xxCC xxC0 xx0C xx00	-30 to -15 -30 to -15 -5 to +8 -5 to +8	-25.0 -30.0 0.0 2.0
10. TRIM HEATER CONTROL (v0.00.2 on)							
390	Control strategy	1 2 3 4 5	nonE oFF 24hr trad nEt.A	No control Off when isolated Fixed adjustment Fixed with non-trading adjustment Network adjustment		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 (v0.00.2 on)	oFF th.on		Off Trim heater on			

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ITEM	DESCRIPTION	CODE	CODE MEANING	BIT 4321	RANGE	ITEM 9 VALUE
11. Jnet NETWORK LIGHTING CONTROL 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	Over ride input	OFF L.O.IP	No input Over ride input on			
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
120	Lighting override timer (time delay before lighting off/blinds close on network control)				00:30 - 02:00	02:00
116	Manual lights on	OFF P.on	OFF Lights on			
117	Manual lights off	OFF P.off	OFF Lights 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	
12. Jnet COMMAND FUNCTIONS						
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 in event of plant fault	Off	Disabled		0 - 1	Off
135	Display Jnet network commands	nonE O.S.df PL.Ft P.C.Ft	No command Other associated systems on defrost Plant fault Plant comms fault			

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ITEM	**DESCRIPTION**	**CODE**	**CODE MEANING**	**BIT** **4321**	**RANGE**	**ITEM 9 VALUE**
	13. DISPLAY FUNCTIONS					
122	Temperature display unit choice	CELS FAhr	Celsius Fahrenheit		0 - 1	CELS
136	Enable fans only operation from display pushbuttons	Off E.d.Fo	Disable Enable		0 - 1	Off
137	Controller state	run FAn.O	Operational Fans only			
138	Enable Shutdown from display pushbuttons	OFF E.d.Sd	disable Enable		0 - 1	Off
139	Controller State	run OFF	Operational Shutdown			
121	Display switch status	Si - - Si1 - Si- 2 Si12	OFF Position 1 Position 2 Both			
	14. CLOCK CALENDAR 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.					
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				1992 - 2022	
18	Daylight saving enable	Stnd dAY.S	Standard time Daylight saving time		0 - 1	Stnd
	15. RESTORE FACTORY DEFAULTS To set the factory defaults into the memory of the controller, first set the 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.					
9	Set default values selected by Bitswitch Note: Setting the bitswitches alone has no effect.	1234	Set default values	xxCC xxCO xxOC xxOO	Frozen food Ice cream Chiller Produce (off cycle) where C = CLOSED or ON O = OPEN or OFF x = Don't care For unmarked switches C = dot visible O = dot not visible	
		1066	Write to NVRAM without delay			

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colspan="7"	**JTL CABINET CONTROLLER ITEM NUMBERS** — **LAPE**					

ITEM	DESCRIPTION	CODE	CODE MEANING	BIT 4321	RANGE	ITEM 9 VALUE
	**16. SYSTEM ALARMS**					
80	Group alarm 81 - 88	0 1 - 255	No alarms Check 81 - 88			
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			
85	Sensor power supply fault	CLr PS.Ft	No fault Fault			
87	Shutdown alarm	CLr Sh.dn	No fault Fault			
88	All sensors faulty, deselected or disconnected	CLr t.SEn	No fault Fault			
90	Group alarm 91 - 98	0 1 - 255	No alarms Check 91 - 98			
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			
96	Energy saving sensor fault	CLr E.S.Pr	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	0 1 - 255	No alarms Check 251 - 258			
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			

	JTL CABINET CONTROLLER ITEM NUMBERS				**LAPE**	
ITEM	**DESCRIPTION**	**CODE**	**CODE MEANING**	**BIT** **4321**	**RANGE**	**ITEM 9 VALUE**
	17. DIAGNOSTIC & TEST FUNCTIONS					
44	Power off duration					
6	Communications speed (in kilo baud)	4.8	Baud rate			
7	Communications (Half duplex)	HALF	2 wire			
973	Latest polling interval This time shows the polling interval between the last two successful network awake messages to this unit.	min:sec				
974	Time since last awake message	min:sec				
975	Network receive timer Each time a message is read correctly the timer is set to 10 it counts down. If the timer reaches 0 then the communications module is reset.	seconds	(counts down to 0)			
976	Network receive bad character counter The counter counts down from a preset number. When the counter reaches 0 the communications module is reset.		(counts down to 0)			
977	Transmit control line status for the operation of the Jnet network communications.	Hi Lo	Transmit Receive			
8	Bitswitch setting	0 1 2 3	Frozen food Ice cream Chiller Produce (off cycle)	xxCC xxC0 xx0C xx00		
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					
204	Unadjusted suction pressure					

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\multicolumn{5}{c}{**JTL CABINET CONTROLLER ITEM NUMBERS**}	**LAPE**

ITEM	DESCRIPTION	CODE	CODE MEANING	BIT 4321	RANGE	ITEM 9 VALUE
10	Processor alarms (11 - 17)	0 1 - 255	No alarms Check 11 - 17			
11	Static RAM fault	CLr rA.Ft	No fault Fault			
12	Program/counter fault	CLr PC.Ft	No fault Fault			
13	Stack pointer fault	CLr SP.Ft	No fault Fault			
14	Background loop fault	CLr bL.Ft	No fault Fault			
15	PROM checksum fault	CLr Pr.Ft	No fault Fault			
16	NVRAM fault	CLr n.Ft	No fault Fault			
17	Instruction TRAP fault	CLr tP.Ft	No fault Fault			

	DISPLAY DATA		LAPE

GRAPHICS DISPLAY	
☢	Fans running
⌣	Defrost recovery
💧💧	Defrost
🔧	Fault condition

NORMAL DISPLAY	
- 99^c	Cabinet temperature (item 20 rounded)
dEF	Defrost
dEFr	Defrost recovery
Off	Unit Shutdown or fans only mode (indicated by fan symbol)
FAnS	Fans only mode
--	Display data error

ALARM TEXT (in descending priority order)	
t.SEn	All sensors faulty, deselected or disconnected
Ht	High cabinet or air off temperature
ISOL	Unit shutdown

OTHER TEXT	
JTL	Start-up text
Lo	Switched to primary setpoint
Hi	Switched to secondary setpoint