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ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULTS	RANGE	ITEM 9 VALUE
1. Jnet NETWORK IDENTIFICATION						
0	Unit type	FL21	Unit type			
19	Software version number					
41	Heat harvester function (from v0.00.3)	0 1	S.Flo H.H.En	Flow monitor Heat harvester	0 - 1	H.H.En
101	Unit number Pack 1				0.1 - 899.7	
201	Unit number Pack 2				0.1 - 899.7	
2. TEMPERATURES						
21	Hot water temperature					
22	Supply water temperature					
44	Hot water temperature difference					
2.1 HEAT EXCHANGE 1 TEMPERATURES						
121	Refrigerant Gas In temperature					
122	Refrigerant Gas Out temperature					
123	Output fluid flow temperature					
124	Output fluid temperature					
125	Output fluid temperature difference					
126	Tank water temperature					
127	Tank water temperature setpoint				35 - 65	60
2.2 HEAT EXCHANGER 2 TEMPERATURES						
221	Refrigerant Gas In temperature					
222	Refrigerant Gas Out temperature					
223	Output fluid temperature					
224	Output fluid return temperature					
225	Output fluid temperature difference					
226	Tank water temperature					
227	Tank water temperature setpoint				35 - 65	60
3. SENSOR SELECTION						
51	Hot water sensor selection	OFF hot	Disabled Enabled		0 - 1	hot
52	Supply water sensor selection	OFF SPy	Disabled Enabled		0 - 1	SPy
3.1 HEAT EXCHANGER 1						
131	Refrigerant Gas In 1 sensor selection	OFF G.I.1.E	Disabled Enabled		0 - 1	G.I.1.E
132	Refrigerant Gas Out 1 sensor selection	OFF G.O.1.E	Disabled Enabled		0 - 1	G.O.1.E

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133	Output fluid flow 1 sensor selection	OFF C.F.1.E	Disabled Enabled		0 - 1	C.F.2.E
134	Output fluid return 1 sensor selection	OFF C.r.1.E	Disabled Enabled		0 - 1	C.r.2.E
136	Tank 1 water sensor selection	OFF t1.En	Disabled Enabled		0 - 1	t1.En
3.2 HEAT EXCHANGER 2						
231	Refrigerant Gas In 2 sensor section	OFF G.I.2.E	Disabled Enabled		0 - 1	G.I.2.E
232	Refrigerant Gas Out 2 sensor selection	OFF G.O.2.E	Disabled Enabled		0 - 1	G.O.2.E
233	Output fluid flow 2 sensor selection	OFF C.F.2.E	Disabled Enabled		0 - 1	C.F.2.E
234	Output fluid return 2 sensor selection	OFF C.r.2.E	Disabled Enabled		0 - 1	C.r.2.E
236	Tank 2 water sensor selection	OFF t2.En	Disabled Enabled		0 - 1	t2.En
4. SITE TEMPERATURES & HUMIDITY						
Note: Temperatures can be displayed on the maintenance unit in degrees Celsius or Fahrenheit. The choice is made on item 178. All setpoint ranges are shown in Celsius.						
178	Temperature display unit choice	CELS FAhr	Celsius Fahrenheit		0 - 1	CELS
897	Site temperature (from broadcast)					
898	Site relative humidity (from broadcast)					
896	Site absolute humidity (from broadcast)					
899	Outside temperature (from broadcast)					
5. WATER FLOW DATA						
31	Average flow rate over the last 15 minutes (litres/hour)					
32	Average flow rate over the last hour (litres/hour)					
33	Average flow rate over the last 24 hours (litres/hour)					
34	Total flow over the last 24 hours (litres)					
35	Flow in last minute (litres)					
WATER FLOW SETTINGS						
40	Volume measured per pulse on IP2 (litres)				1 - 250	100.0

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ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULTS	RANGE	ITEM 9 VALUE
6. WATER HEATING						
20	Operating mode	oFF Auto	Manual Automatic			
45	Heat delivered to water (kW)					
46	Average heat delivered to water (kW) over last 15 mins					
43	Fluid pump flow at full speed (litres/hr)				100 - 2500	1000
49	Enable variable fluid pump speed input (v0.001 on)	PS.di PS.En	Disabled Enabled		0 - 1	PS.di
47	Input voltage for fluid pump at full speed (v0.00.1 on)				5.0 to 10.0	10.0
48	Input voltage for fluid pump at minimum speed (no flow) (v0.00.1 on)				0.0 to 5.0	2.0
6.1 HEAT EXCHANGER 1						
145	Heat delivered by heat exchanger 1 (kW)					
146	Average heat delivered by heat exchanger 1 (kW) over the last 15 mins					
142	Fluid pump 1 flow (litres/hr)					
143	Average fluid pump 1 flow (litres/hr)					
140	Fluid pump 1 speed (%)					
141	Fluid pump 1 running	1.oFF 1.run	Stopped Running			
6.2 HEAT EXCHANGER 2						
245	Heat delivered by heat exchange 2 (kW)					
246	Average heat delivered by heat exchange 2 (kW) over the last 15 mins					
242	Fluid pump 2 flow (litres/hr)					
243	Average fluid pump 2 flow (litres/hr)					
240	Fluid pump 2 speed (%)					
241	Fluid pump 2 running	2.oFF 2.run	Stopped Running			

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ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULTS	RANGE	ITEM 9 VALUE
7. INPUTS & OUTPUTS						
71	Plant healthy (IP1)	PL.Ft Hty	Plant fault Healthy			
72	Water flow pulse input (IP2)	OFF FLIP	Contacts open Contacts closed			
73	Auto/Manual (IP3)	OFF Auto	Manual Auto			
61	Watchdog output (LN/DQ1)	OFF On	Watchdog fail Watchdog healthy			
171	Fluid pump 1 fault	Clr C.1.Pu	No Fault Fault			
172	Fluid pump 1 running	1.oFF 1.run	Stopped Running			
271	Fluid pump 2 fault	Clr C.2.Pu	No Fault Fault			
272	Fluid pump 2 running	2.oFF 2.run	Stopped Running			
8. DISPLAY FUNCTIONS						
178	Temperature display unit choice	CELS FAhr	Celsius Fahrenheit		0 - 1	CELS
189	Backlight control	0 B.oFF 1 BL.on 2 BL.F.F 3 B.L.n.F	Backlight off Backlight on Backlight off, flashes for alarm Backlight on, flashes for alarm		0 - 3	
9. MODBUS COMMUNICATIONS						
130	Interface 1 modbus device number	0	Interface disabled		up to v0.00.2	1
					1 - 247	
					from v0.00.3	
					0 - 247	
230	Interface 2 modbus device number	0	Interface disabled		up to v0.00.2	2
					1 - 247	
					from v0.00.3	
					0 - 247	
37	Delay between modbus requests (secs) (from v0.00.3)				0 - 5	0
38	Delay before modbus retry requests (secs) (from v0.00.3)				2 - 5	2

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ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULTS	RANGE	ITEM 9 VALUE
909 (39)	Interface baud rate	0	600 baud		up to v0.00.2	9600
		1	1200 baud		0 - 5	
		2	2400 baud		from v0.00.3	
		3	4800 baud		0 - 6	
4	9600 baud					
5	19200 baud					
6	38400 baud					
10. CLOCK CALENDER						
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				2017 - 2048	
18	Daylight saving enable				0 - 1	Stnd
11. RESTORE FACTORY DEFAULTS						
966	Virtual bitswitch setting	0				
9	Set default values selected by virtual bitswitch	1234	Set default values			
		1066	Write to NVRAM without delay			
12. RESTORE PARAMETERS FROM NETWORK						
To restore the data from the network first set 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 the parameter 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	Parameter 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	

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ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULTS	RANGE	ITEM 9 VALUE
13. SYSTEM ALARMS						
80	Group alarm 81 - 88	Graphical	See display data			
86	Cooler Interface fault (from v0.00.4)	CLr CL.iF	No fault Fault			
87	Cooler Interface fault (up to v0.00.3)	CLr CL.iF	No fault Fault			
87	Plant failed (from v0.00.4)	CLr P.FLd	No fault Fault			
88	Plant failed (up to v0.00.3)	CLr P.FLd	No fault Fault			
90	Group alarms 91-98	Graphical	See display data			
91	Hot water sensor fault	CLr hot.P	No fault Fault			
92	Supply water sensor fault	CLr SPy.P	No fault Fault			
98	Thermistor power supply fault	CLr PS.Ft	No fault Fault			
110	Group alarm 111 -118	Graphical	See display data			
111	All sensors faulty, deselected or disconnected	CLr t.SEn	No fault Fault			
190	Group alarms 191-198	Graphical	See display data			
191	Refrigerant Gas in 1 sensor fault	CLr G.I.1.F	No fault Fault			
192	Refrigerant Gas out 1 sensor fault	CLr G.O.1.F	No fault Fault			
193	Fluid flow 1 sensor fault	CLr C.F.1.F	No fault Fault			
194	Fluid return 1 sensor fault	CLr C.r.1.F	No fault Fault			
195	Fluid pump 1 fault	CLr C.1.Pu	No fault Fault			
196	Tank 1 water sensor fault	CLr t1.FL	No fault Fault			
290	Group alarms 291-298	Graphical	See display data			
291	Refrigerant Gas in 2 sensor fault	CLr G.I.2.F	No fault Fault			
292	Refrigerant Gas out 2 sensor fault	CLr G.O.2.F	No fault Fault			
293	Fluid flow 2 sensor fault	CLr C.F.2.F	No fault Fault			
294	Fluid return 2 sensor fault	CLr C.r.2.F	No fault Fault			
295	Fluid pump 2 fault	CLr C.2.Pu	No fault Fault			

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ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULTS	RANGE	ITEM 9 VALUE
296	Tank 2 water sensor fault	CLr t2.FL	No fault Fault			
14. DIAGNOSTIC & TEST FUNCTIONS						
6	JTL Network communications speed	4.8	Kilo Baud			
7	Communications method	HALF	2 wire			
967	Latest unit no polled on zone					
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					
89	Sensor excitation value (Factory test)		Not used			
99	Test digital displays	CLr SEt	Not active Test active		0 - 1	
100	Test inputs	I--- i1-- I-2- i-3 i123	No inputs Input 1 on Input 2 on Input 3 on All inputs on			
199	Test output relays	CLr SEt	Not active Test active		0 - 1	
875	Phoenix CPU supply voltage (mV)					
876	Phoenix battery voltage (mV)					
877	Phoenix CPU temperature					
878	PIC identification number					
879	PIC firmware variation					
501	Temperature sensor 1 reading					
502	Temperature sensor 2 reading					

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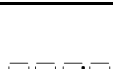





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ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULTS	RANGE	ITEM 9 VALUE
518	Temperature sensor open circuit indication	up to v0.00.3				
		0	No fault			
519	Temperature sensor short circuit indication	32	Sensor 2			
		64	Sensor 1			
		from v0.00.4				
		Graphical	See display data			
10	Processor alarms (11 - 17)	Graphical	See display data			
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		FL210
NORMAL DISPLAY		
999.9	Heat in kW to water system	
-	Not selected	
ALARM TEXT (in descending priority order)		
P.FLd	Plant failed	
CL.iF	Interface fault	
t.SEn	All sensors faulty	
FLO	Flow fault	
C.1.Pu	Fluid pump 1 fault	
C.2.Pu	Fluid pump 2 fault	
hot	Hot water supply fault	
SPy	Supply water sensor fault	
t.1.FL	Tank 1 water sensor fault	
t.2.FL	Tank 2 water sensor fault	
OTHER TEXT		
JTL	Start-up text	

Graphical Display of Bit Data

Graphical display of bit data used on items where the data was shown previously as a decimal value.

Bit	Graphic	Value	Note
None		0	Where the data is shown as a decimal value the meaning is the sum of the associated value. e.g. Bits 2 and 5 set would be displayed as 18 (16+2)
1		1	
2		2	
3		4	
4		8	
5		16	
6		32	
7		64	
8		128	