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**JTL VARIABLE SPEED CONDENSER FAN CONTROLLER
ITEM NUMBERS**

HP260

ITEM	DESCRIPTION	CODE	CODE MEANING	DEFAULT SET	RANGE	ITEM 9 VALUE
1. Jnet NETWORK IDENTIFICATION						
0	Unit type	hP26	Unit type			
19	Software version number					
1	Unit number				0.1 - 899.9	
2. PRESSURES						
Note: Pressures can be displayed on the maintenance unit in psi, bar or kPa. The choice is made on item 179. All setpoint ranges are shown in psi. Average pressures are averaged over last hour and are updated every 4 minutes.						
179	Pressure display unit choice	1 2 3	PSI bAr PASC	p.s.i. bar kPa		PSI
2.1 DISCHARGE PRESSURE						
22	Discharge pressure					
148	Average discharge pressure over 1 hour					
52	High discharge pressure alarm level				140 - 390	250
51	Low discharge pressure alarm level				100 - 200	120
122	Discharge pressure transducer selection	oFF d.t.En	Disabled Enabled		0 - 1	Dt.En
422	Full scale transducer value (at 20mA)				300 - 500	300.0
427	Zero scale transducer value (at 4mA)				-15 - 0	0.0
2.2 HEAT RECLAIM DIFFERENTIAL PRESSURE						
24 (217)	Differential pressure					
149	Average pressure over 1 hour					
218	Minimum differential pressure				0 - 15.0	5.0
124	Differential pressure transducer selection	oFF H.t.En	Disabled Enabled	0 1	0 - 1	oFF Ht.En
424	Full scale transducer value (at 20mA)				10 - 50	14.5
3. TEMPERATURES						
Note temperatures can be displayed on the Maintenance Unit in Celsius or Fahrenheit. The choice is made on item 169.						
169	Temperature display choice	CELS FAhr	Celsius Fahrenheit		0 - 1	CELS
31	Heat reclaim return temperature					
131	Heat reclaim return temperature Sensor enable	oFF t1.En	Not selected Selected	0 1	0 - 1	oFF t1.En
32	Heat reclaim flow temperature					
132	Heat reclaim flow temperature Sensor enable	oFF t2.En	Not selected Selected	0 1	0 - 1	oFF t2.En
33	Heat reclaim gas outlet					
133	Heat reclaim flow temperature Sensor enable	oFF t3.En	Not selected Selected	0 1	0 - 1	oFF t3.En
34	Ambient temperature					

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ITEM	DESCRIPTION	CODE	CODE MEANING	DEFAULT SET	RANGE	ITEM 9 VALUE
134	Heat reclaim reclaim flow temperature Sensor enable	oFF t4.En	Not selected Selected	0 1	0 - 1	oFF t4.En
4. SITE TEMPERATURES & HUMIDITY						
Note: Temperatures can be displayed on the maintenance unit in degrees Celsius of Fahrenheit. The choice is made on item 169.						
169	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. DISCHARGE PRESSURE CONTROL						
There are the discharge pressure control strategies.						
1. Sample. To set level item 50						
2. Floating. Enabled by item 363						
3. Heat reclaim enabled by item 200						
The discharge pressure setpoint can float if item 363 is set to a non zero value. The discharge pressure is item controlled to the appropriate temperature depending on the outside ambient temperature.						
50	Discharge pressure set point				100 - 250	150
350	Maximum discharge pressure set point				175 - 380	200
34	Outside temperature					
899	Outside temperature (from JTL network)					
226	Disable use of outside temperature from network (from v0.00.3)	nt.En oFF	Enable Disable		0 - 1	nt.En
363	Floating discharge temperature differential	0.0	Function disabled		0 - 15	0.0
364	Floating discharge temperature setpoint					
365	Condenser operating temperature					
370	Optimised discharge pressure set point					
395	Analogue fan speed gain				5 - 50	10
54	Condenser control time constant				1 - 250	30
55	Discharge pressure to reduce capacity				140 - 400	300
192	Integrated discharge pressure error					
157	Refrigerant type	11 12	407F 290	R407F Propane (R290)		11 - 12 R407F

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ITEM	DESCRIPTION	CODE	CODE MEANING	DEFAULT SET	RANGE	ITEM 9 VALUE
6. CONDENSER CONTROL						
Forced functions remain forced if the Maintenance Unit remains plugged in. They are automatically cancelled 30 minutes after the Maintenance Unit is unplugged.						
368	Maximum speed at night (%)				50 - 100	100
369	Select network timer for nighttime operation	0 1 - 8	Disabled Timer number		0 - 8	0
391	Number of condenser steps running	0 - 127				
397	Number of condenser steps in backup analogue mode				0 - 127	127
300	Number of stages			0 1	0 - 4	0 3
301	Fan speed (%)					
310 (366)	Stage 1 enable level (%)				0 - 100	20
311 (367)	Stage 1 disable level (%)				0 - 100	10
312	Invert stage 1	1.oFF 1. on			0 - 1	1.oFF
320	Stage 2 enable level (%)				0 - 100	40
321	Stage 2 disable level (%)				0 - 100	20
322	Invert stage 2	2.oFF 2. on			0 - 1	2.oFF
330	Stage 3 enable level (%)				0 - 100	60
331	Stage 3 disable level (%)				0 - 100	30
332	Invert stage 3	3.oFF 3. on			0 - 1	3.oFF
340	Stage 4 enable level (%)				0 - 100	80
341	Stage 4 disable level (%)				0 - 100	40
342	Invert stage 4	4.oFF 4. on			0 - 1	4.oFF
392	Forced number of condenser steps	0	Forcing disabled		0 - 127	

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ITEM	DESCRIPTION	CODE	CODE MEANING	DEFAULT SET	RANGE	ITEM 9 VALUE
7. HEATING SYSTEM						
20	Operating mode	oFF Auto HEAT rEJ.H	Manual Automatic Heating Rejecting heat			
200	Heat reclaim enable	oFF Hr.En	Disabled Enabled	0 1	0 - 1	oFF Hr.En
201	Heating system active	oFF Hr.on	Inactive Active			
202	Heating demand (kW)					
203	Heating demand (%)					
461	Heat demand input full scale (kW)				100 - 500	250
471	Heat demand minimum scale (kW)					0
204	Heat delivered to heating system (kW)					
205	Average heat delivered to heating system (kW) over the last 15 mins					
206	Heatsink capacity available (MJ)					
207	Heatsink capacity available (%)					
462	Tank capacity full scale (MJ)				50 - 500	100
472	Tank capacity minimum scale (MJ)					0
208	Buffer tank top temperature					
463	Tank top temperature full scale (oC)					60
473	Tank top temperature minimum scale (oC)					0
209	Temperature demand (oC)					
210	Coolant specific heat (x1000)				700 - 1000	1000
211	Coolant specific gravity (x1000)				1000 - 1200	1000
212	Heat reclaim pump flow (m3/hr)					
213	Heat reclaim pump flow at max (m3/hr)				10 - 200	100.0
214	Heat reclaim pump speed (%)					
219	Flow proportion for pack % (from v0.00.4)				0 - 100	50
464	Pump speed at max (%)					100
474	Pump speed at min (%)					0
215	Heat reclaim pump running	P.StP P.run	Stopped running			
216	Coolant fluid temperature difference					
217 (24)	Differential pressure					
218	Minimum differential pressure				0 - 15	5.0
220	Heat reclaim demand temperature offset				5 - 15	10.0
221	Heating demand reduction gain				0 - 250	upto v0.00.2

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ITEM	DESCRIPTION	CODE	CODE MEANING	DEFAULT SET	RANGE	ITEM 9 VALUE
						25
						from v0.00.3
						0
222	Tank capacity reduction gain				0 - 250	upto v0.00.2
						25
						from v0.00.3
						0
223	Maximum heating demand temperature				49 - 55	52.0
224	Minimum heating demand temperature				17 - 23	20.0
225	Maximum demand temperature before reductions					

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ITEM	DESCRIPTION	CODE	CODE MEANING	DEFAULT SET	RANGE	ITEM 9 VALUE
8. INPUTS AND OUTPUTS						
171	Auto/manual (IP-1)	oFF Auto	Manual controller dormant Auto mode			
172	Fan status (IP-2)	Hty Fn.Ft	Fans ok Fan fault			
173	Stage 1 status (IP-3)	S1.Ft S1.Hy	Stage 1 ok Stage 1 fault			
174	Stage 2 status (IP-4)	S2.Ft S2.Hy	Stage 2 ok Stage 2 fault			
175	Stage 3 status (IP-5)	S3.Ft S3.Hy	Stage 3 ok Stage 3 fault			
176	Stage 4 status (IP-6)	S4.Ft S4.Hy	Stage 4 ok Stage 4 fault			
177	Heating required (IP-7)	oFF HEAT	Heat not required Heat required			
178	High liquid (IP-8)	Clr Hi.L.L	No fault High liquid level			
161	Watchdog output (LN/LD-1)	oFF on	Watchdog fail Watchdog healthy			
162	High discharge pressure (LN/LD-2)	clr HidP	Discharge ok High pressure			
163	Stage 1 (LN/LD-3)	1.oFF 1.on	Stage 1 off Stage 1 on			
164	Stage 2 (LN/LD-4)	2.oFF 2.on	Stage 2 off Stage 2 on			
165	Stage 3 (LN/LD-5)	3.oFF 3.on	Stage 3 off Stage 3 on			
166	Stage 4 (LN/LD-6)	4.oFF 4.on	Stage 4 off Stage 4 on			
180	Low liquid level alarm delay (from v0.00.2)		mins		5 - 30	15
181	Low liquid level alarm clear delay (from v0.00.2)		mins		0 - 15	5
9. DISPLAY FUNCTIONS						
179	Pressure display unit choice	1 2 3	PSI bAr PASC	p.s.i. bar kPa		1 - 3 PSI
189	Backlight control (from v0.00.5)	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

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ITEM	DESCRIPTION	CODE	CODE MEANING	DEFAULT SET	RANGE	ITEM 9 VALUE
10. MODBUS COMMUNICATIONS						
909	Interface baud rate	0 1 2 3 4 5	600 baud 1200 baud 2400 baud 4800 baud 9600 baud 19200 baud		0 - 5	9600
41	Interface 1 modbus device				1-247	1
42	Interface 2 modbus device				1-247	2
11. 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				2013 - 2034	
18	Daylight saving enable	Stnd dAY.S	Standard time Daylight saving time		0 - 1	Stnd
12. RESTORE FACTORY DEFAULTS						
966	virtual bitswitch setting	0 1	Conventional control Heat reclaim enabled			
9	Set default values To set the factory defaults into the memory of the controller, 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.	1234 1066	Load default settings Write to NVRAM immediately			
13. RESTORE PARAMETERS FROM NETWORK						
To restore the data from the network first set the virtual bitswitch on item 966 and 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	Parameter restore progress	rdy dnl.r din.p dnl.c FA.IL	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	DEFAULT SET	RANGE	ITEM 9 VALUE
14. SYSTEM ALARMS						
80	Group alarm 81 - 88	Graphical	See display data			
83	Low discharge pressure	Clr Lo.dP	No fault Fault			
84	High discharge pressure	Clr Hi.dP	No fault Fault			
85	Low liquid level (from v0.00.2)	Clr Lo.L.L	No fault Fault			
88	Condenser fault	Clr Fn.Ft	No fault Fault			
90	Group alarm 91 - 98	Graphical	See display data			
91	Pressure transducer fault	Clr Pt.Ft	No fault Fault			
92	Temperature sensor fault	Clr t.S.Ft	No fault Sensor fault			
96	Interface communications fault	Clr IF.Ft	No fault Interface fault			
910	Group alarm 911 - 918	Graphical	See display data			
915	Plant fault	Clr P.Ft	No fault Plant fault			
920	Group alarm 921-928	Graphical	See display data			
921	Heating demand fault	Clr H.C.Ft	No fault Fault			
922	Differential pressure transducer fault	Clr d.p.Tr	No fault Fault			
923	Condenser pump 1 fault	Clr C.1.PU	No fault Fault			
924	Heatsink capacity fault	Clr H.C.Ft	No fault Fault			
925	Tank top sensor fault	Clr tt.Ft	No fault Fault			
926	Low differential pressure alarm	Clr L.d.P.A	No fault Fault			

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ITEM	DESCRIPTION	CODE	CODE MEANING	DEFAULT SET	RANGE	ITEM 9 VALUE
15. DIAGNOSTIC & TEST FUNCTIONS						
6	JTL Network communications speed	4.8	Kilo Baud			
7	Communications method	HALF	2 wire			
8	Bitswitch setting	C.d.C Hr.En	Conventional control Heat reclaim			
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			
99	Test digital displays	CLr SEt	Not active Test active		0 - 1	
100	Test inputs 1 - 4 (up to v0.00.4)	- - - - 1 - - - - 2 - - - - 3 - - - - 4	No inputs Input 1 on Input 2 on Input 3 on Input 4 on			
101	Test inputs 5 - 8 (up to v0.00.4)	- - - - 5 - - - - 6 - - - - 7 - - - - 8	No inputs Input 5 on Input 6 on Input 7 on Input 8 on			
100	Test inputs (from v0.00.5)	Graphical	See display data			
199	Test relay outputs	clr SEt	Not active Active		0 - 1	
411	Transducer 1 reading					
412	Transducer 2 reading					
431	Sensor 1 reading					
432	Sensor 2 reading					
433	Sensor 3 reading					
434	Sensor 4 reading					
441	Voltage input 1 (mV)					
442	Voltage input 2 (mV)					
443	Voltage input 3 (mV)					
444	Voltage input 4 (mV)					

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ITEM	DESCRIPTION	CODE	CODE MEANING	DEFAULT SET	RANGE	ITEM 9 VALUE
451	Voltage input 1 (cV)					
452	Voltage input 2 (cV)					
453	Voltage input 3 (cV)					
454	Voltage input 4 (cV)					
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		HP260
NORMAL DISPLAY		
999.9	Pressure in psi	
--	Not selected	
ALARM TEXT (in descending priority order)		
Hi.dP	High discharge pressure	
FAn	Condenser fan problem	
OTHER TEXT		
JTL	Start-up text	

Graphical Display of Bit Data (from v0.00.5)				
Graphical display of bit data used on items where the data was shown previously as a decimal value.	Bit	Graphic	Value	<u>Note</u> Where the data is shown as a decimal value the meaning is the sum of the associated value.
	None		0	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		