

**JTL TRANSCRITICAL CO2 VALVE AND
GAS COOLER CONTROLLER WITH HEAT RECLAIM
ITEM NUMBERS**

HP380

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ITEM	DESCRIPTION	CODE	CODE MEANING	RANGE	ITEM 9 VALUE
1. Jnet NETWORK IDENTIFICATION					
0	Unit type	hP38	Unit type		
19	Software version number				
1	Unit number			0.1 - 899.9	
2. PRESSURES					
Note: Pressures are shown in psi					
Average pressures are averaged over last hour and are updated every 4 minutes.					
Pressures can be displayed on the Maintenance Unit in psi, bar or MPa. The choice is made on item 9393.					
2.1 COOLER EXIT PRESSURE					
24	Cooler exit pressure (from v0.00.3)				
148	Average cooler pressure over 1 hour				
122	Cooler pressure transducer selection	OFF d.t.En/C.E.En	Disabled Enabled	0 - 1	Dt.En/C.E.En
422	Full scale transducer value (at 20mA)			1450 - 1750	1740
101	Member of data set 1	0	Disabled	0 - 9999	0
102	Member of data set 2	0	Disabled	0 - 9999	0
2.2 COOLER INLET PRESSURE (from v0.00.3)					
23	Cooler inlet pressure				
149	Average inlet pressure over 1hour				
123	Cooler inlet pressure transducer selection	oFF C.i.En	Disabled Enabled	0 - 1	C.i.En
423	Full scale transducer value (at 20mA)			1450 - 1750	1740
103	Member of data set 1	0	Disabled	0 - 9999	0
104	Member of data set 2	0	Disabled	0 - 9999	0
2.3 COOLER CONTROL PRESSURE (from v0.00.3)					
22	Cooler control pressure				
65	Cooler control pressure calculation method	0 1 2	C.E.Pr C.i.Pr C.C.Pr	Cooler exit Cooler inlet Mixture of exit & inlet	0 - 2 C.E.Pr
66	Cooler control pressure ratio		0% - cooler exit 100% - cooler inlet	0 - 100	50
25	Cooler inlet to exit differential pressure				

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ITEM	DESCRIPTION	CODE	CODE MEANING	RANGE	ITEM 9 VALUE
3. PRESSURE ALARMS					
3.1 SUBCRITICAL COOLER PRESSURE					
52	High cooler pressure alarm level			725 - 1200	1000
51	Low cooler pressure alarm level			300 - 600	500
3.2 SUPERCRITICAL COOLER PRESSURE					
62	High cooler pressure alarm level			1200 - 1600	1450
61	Low cooler pressure alarm level			600 - 1200	800
3.3 COOLER INLET PRESSURE (from v0.00.3)					
72	High cooler inlet pressure alarm level			up to v0.00.9	
				650 - 800	725
				from v0.01.0	
				1200 - 1600	1450
71	Low cooler inlet pressure alarm level			200 - 650	300
3.4 COOLER DIFFERENTIAL PRESSURE (from v0.00.3)					
69	High cooler differential pressure alarm level	0	Disabled	0 - 500	75
4. TEMPERATURES					
Note: Temperatures are shown is Celsius. Temperatures can be displayed on the Maintenance Unit in Celsius or Fahrenheit. The choice is made on item 9392.					
9392	Temperature display choice	CELS FAhr	Celsius Fahrenheit	0 - 1	CELS
5120 (32)	Ambient temperature				
432	Outside temperature (local sensor)				
132	Outside air temperature sensor enable	OFF t2.En	Not selected Selected	0 - 1	t2.En
139	Select primary outside temperature source	L.t.bu E.t.Sn	Local Network	0 - 1	L.t.bu
39	Ambient temperature difference error (from v0.01.1)			3 - 10	5
5129	Discharge temperature (Heat exchanger gas input temperature)				
111	Discharge temperature Member of data set	0	Disabled	0 - 9999	0
230	Discharge temperature enable	oFF d.t.En	Not selected Selected	0 - 1	d.t.En
5124	Heat exchanger gas output temperature				
234	Heat exchanger gas output temperature selection	oFF S4.En	Disabled Enabled	0 - 1	S4.En
5121	Heating fluid flow temperature				

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ITEM	DESCRIPTION	CODE	CODE MEANING	RANGE	ITEM 9 VALUE
5137	Heat fluid temperature alarm level (from v0.00.8)			70.0 - 90.0	80.0
231	Heating fluid flow temperature selection	oFF S1.En	Disabled Enabled	0 - 1	S1.En
5122	Heating fluid return temperature				
232	Heating fluid return temperature selection	oFF S2.En	Disabled Enabled	0 - 1	S2.En
5125	Gas cooler in temperature				
235	Gas cooler in temperature selection	oFF S5.En	Disabled Enabled	0 - 1	S5.En
5128 (31)	Operational gas cooler exit temperature				
131	Cooler exit temperature Sensor enable	OFF t1.En	Not selected Selected	0 - 1	t1.En
5123	Gas cooler bypassed temperature				
233	Gas cooler bypassed temperature selection	oFF S3.En	Disabled Enabled	0 - 1	S3.En
5126	Air handling unit coil temperature				
236	Air handling unit coil temperature selection	oFF S6.En	Disabled Enabled	0 - 1	S6.En
897	Site temperature (from network broadcast)				
898	Site relative humidity (from network broadcast)				
896	Site absolute humidity (from network broadcast)				
899	Outside temperature (from network broadcast)				
820	Outside ambient temperature from the Met Office (from v0.01.2)				
821	Time since data from the Met Office received from the network controller (from v0.01.2)				
822	Mett Office temperature trend (from v0.01.2)	OFF F.t.t.u	Disabled Enabled	0 - 1	OFF
5. CO2 STATE CONTROL					
20	Operating state	oFF Subc SuPr H.rc H.rc.b	Manual Subcritical Supercritical Heat reclaim Heat reclaim boost		
36	Adjusted ambient temperature factor (Item calculated as a value between ambient and cooler exit temperature using this factor)			0 - 50	0
37	Adjusted ambient setpoint			21 - 27	25.0

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ITEM	DESCRIPTION	CODE	CODE MEANING	RANGE	ITEM 9 VALUE
38	Adjusted ambient deadband			1 - 4	2.0
35	Adjusted ambient temperature (calculated from the ambient and cooler exit temperature)				
6. COOLER PRESSURE CONTROL					
50	Minimum pressure setpoint			575 - 725	650
350	Maximum pressure set point			1300 - 1600	1375
370	Operational pressure set point				
373	Pressure setpoint from refrigeration requirement				
73	Maximum cooler inlet pressure (from v0.00.3)			1200 - 1500	1377
74	Minimum cooler exit pressure (from v0.00.3)			500 - 600	507
67	Cooler pressure safety strategy (from v0.00.3)	0 1 2	C.E.Pr C.i.Pr both	Cooler exit Cooler inlet Both	0 - 2 C.E.Pr
24	Cooler exit pressure (from v0.00.3)				
55	Cooler exit pressure safety level to reduce capacity			1200 - 1600	1450
23	Cooler inlet pressure (from v0.00.3)				
68	Cooler inlet pressure safety level to reduce capacity (from v0.00.3)				
6.1 SUBCRITICAL COOLER PRESSURE CONTROL					
In subcritical mode the cooler acts as a conventional condenser where the transcritical valve speed is controlled by PI control against an optimised pressure setpoint calculated using the external ambient temperature and for the condenser and the design differential temperature for the condenser.					
363	Floating temperature differential			5 - 15	7.0
364	Floating temperature setpoint				
5021 (365)	Refrigerant boiling point				
5150	HP valve proportional gain			up to v0.01.0 5.00 - 99.99 from v0.01.1 1.00 - 99.99	25.00
5151	HP valve integral gain			0.01 - 1.00	up to v0.00.1 0.33 from v0.00.2 0.03

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ITEM	DESCRIPTION	CODE	CODE MEANING	RANGE	ITEM 9 VALUE
6.2 SUPERCRITICAL COOLER PRESSURE CONTROL					
In supercritical mode the transcritical valve is controlled by PI control against a calculated pressure setpoint calculated using a formula which takes a multiple of the external ambient temperature and adds a constant.					
63	OAT multiplier			0 - 30	15
64	OAT constant			400 - 1400	700
5152	HP valve proportional gain			up to v0.01.0	10.00
				5.00 - 99.99	
				from v0.01.1	
				1.00 - 99.9	
5153	HP valve integral gain			0.01 - 1.00	0.10
6.3 HIGH PRESSURE VALVE OUTPUT					
371	Valve opening (%)	0 - 100			
194	Cooler pressure control proportional term (P)				
192	Cooler pressure control integral term (I)				
5154	Pressure difference to allow valve to shut			15 - 75	29
5155	Minimum valve opening (%)			0 - 25	10
380	Minimum pressure error differential (from v0.01.1)			15 - 75	29
381	Current minimum valve output (from v0.01.1)				
5156	Maximum valve opening (%)			50 - 100	100
372	Forced output			0 - 100	
379	Valve output smoothing	0	disabled	0 - 5	3
7. COOLER EXIT TEMPERATURE CONTROL					
140	Cooler exit temperature set point				
339	Maximum gas cooler exit temperature (from v0.01.1)			35 - 40	35
338	Minimum gas cooler exit temperature (from v0.01.1)			5 - 15	10
143	Minimum cooler exit temperature differential			0 - 10.0	5.0
31	Cooler exit temperature				
151	Cooler exit temperature error				
152	Average cooler exit temperature error				
153	Cooler exit temperature tolerance			0 - 5.0	2.0
154	Cooler exit temperature alarm period			00.30 - 06.00	60

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ITEM	DESCRIPTION	CODE	CODE MEANING	RANGE	ITEM 9 VALUE
7.1 SUBCRITICAL COOLER TEMPERATURE CONTROL					
In SUBCRITICAL mode the cooler fans are controlled by PI control against a calculated temperature set point which endeavours to maintain the liquid level at a set level of subcooling					
141	Cooler superheat subcooling				
144	Cooler subcooling set point			0 to -10	-3.0
138	Control Strategy	2	E.t.C.S	Condenser pressure set point	2
22	Cooler pressure				
5160	Fan speed proportional gain			1.00 - 99.99	5.00
5161	Fan speed integral gain			0.01 - 1.00	0.10
7.2 SUPERCRITICAL COOLER TEMPERATURE CONTROL					
In supercritical mode the cooler acts as a gas cooler where the fan speed is controlled by PI control against a calculated temperature set point calculated using a formula which takes a multiple of the external ambient temperature and adds a constant.					
146	OAT multiplier			1.0 - 1.6	1.0
147	OAT constant			0 - 10	4.0
5162	Fan speed proportional gain			1.00 - 99.99	5.00
5163	Fan speed integral gain			0.01 - 1.00	0.10
7.3. COOLER FAN OUTPUT					
Forced functions remain forced if the Maintenance Unit remains plugged in. They are automatically cancelled 30 minutes after the Maintenance Unit is unplugged.					
5058 (391)	Output (%)				
5080 (195)	Cooler exit temperature proportional term (P)				
5081 (193)	Cooler exit temperature integral term (I)				
359	Maximum fan speed (%) (from v0.00.2)			50 - 100	100
368	Maximum speed at night (%)			50 - 100	100
369	Select network timer for nighttime operation	0 1 - 8	Disabled Timer number	0 - 8	0
360	Maximum fan speed reduction temperature			0 - 20	5
361	Minimum fan speed reduction temperature			-10 - 10	-5
362	Current maximum fan speed due to temperature				
327	Minimum fan speed reduction temperature profile high value (from v0.01.2)			0 - 25	15
328	Minimum fan speed reduction temperature profile low value (from v0.01.2)			-10 - 10	0
358	Minimum fan speed (%) (from v0.00.2)			0 - 25	20

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351	Minimum supercritical fan speed (%) (from v0.01.2)			0 - 50	30
352	Compressor capacity loaded to increase fan speed by 1% in supercritical mode (kW) (from v0.01.2)			0 - 20	5
329	Compressor capacity loaded to increase fan speed by 1% in subcritical mode (kW) (from v0.01.2)			0 - 20	5
324	Compressor capacity loaded (from v0.01.2)				
325	Compressor capacity loaded member of data set (from v0.01.2)			0 - 9999	0
326	Compressor capacity loaded of recieved from unit number (from v0.01.2)				
323	Default compressor capacity loaded (from v0.01.2)			0 - 500	100
5165	Minimum fan speed on heat reclaim boost (from v0.00.6).			0 - 20	5
357	Discharge pressure cut out (depends on item 358 being >0)			500 - 700	600
353	Current minimum fan speed (%)				
354	Upper limit for minimum fan speed (%)			0 - 40	30
349	Pressure differential for fan speed adjustment (from v0.00.8)			15 - 75	15
355	Rate of change of minimum fan speed adjustment (%/4 secs)			0 - 1.0	0.1
345	Cooler pressure to override maximum fan speed strategy (from v0.01.1)	0 1 2	C.E.Pr C.i.Pr both	Cooler exit Cooler inlet Both	0 - 2 C.E.Pr
346	Cooler pressure to override maximum fan speed (from v0.01.1)			1200 - 1500	1377
347	Rate of change of maximum fan speed in override (%/4secs) (from v0.01.1)	0	Function disabled	0 - 1.0	0.1
348	Current maximum fan speed (from v0.01.1)				
356	Fan control strategy when transcritical valve closed.	0 1 2	oFF St.Fn Lo.Fn	Run normally Stop fans Run fans at minimum speed	0 - 2 oFF
397	Backup output (%)			0 - 100	100
5046 (392)	Forced output (%)			0 - 100	
5164	Fan output voltage for zero speed			0.0 - 2.0	0.0
393	Input status	Fn.Ft Hty	Fan Fault Fan ok		
389	Fan output smoothing	0	Disabled	0 - 5	3

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ITEM	DESCRIPTION	CODE	CODE MEANING	RANGE	ITEM 9 VALUE
8. ADIABATIC COOLING CONTROL (from v0.01.1)					
5170	Enable adiabatic cooling	oFF A.C.En	Disabled Enabled	0 - 1	oFF
5171	Minimum off time (mins)			2 - 10	5
5172	Minimum runt time (mins)			5 - 30	10
5173	Minimum ambient temperature to allow adiabatic cooling to run			2 - 10	5
5174	Gas cooler exit temperature error to run adiabatic cooling			1 - 5	3
5175	Adiabatic cooling trigger delay (mins)			5 - 30	15
5180	Period between automatic test (weeks)	0	Tests disabled	0 - 4	2
5181	Automatic test day of week		0 - Sunday	0 - 6	Mon
5182	Automatic test time of day			00:00 to 23:59	12:00
5183	Automatic test repeat cycles			0 - 5	0
5184	Force test	oFF F.tSt	Off Run test	0 - 1	
5185	Time since cooling last ran				
5186	Minimum ambient temperature to allow adiabatic testing (v0.01.2)			2 - 10	5
9. HEAT RECLAIM CONTROL					
228	Heat reclaim	n.rEF h.r.o h.r.b h.r.b.u h.r.b.d h.r.n.S	Normal refrigeration Heat reclaim on Heat reclaim boost on Increase boost pressure Decrease boost pressure Heat demand not satisfied		
200	Heat reclaim enable	oFF H.r.En	Disabled Enabled	0 - 1	H.r.En
227	Heat reclaim boost enable	oFF H.b.En	Disabled Enabled	0 - 1	H.b.En
241	Select timer for heat recovery enable (from v0.00.8)	0 1 - 8	Timer enabled Timer number	0 - 8	0
242	Select timer from energy reduction (from v0.00.8)	0 1 - 8	Timer enabled Timer number	0 - 8	0
201	Heating system active	oFF H.r.on	Inactive Active		
5114	Heat reclaim minimum pressure set point			600 - 1100	1087
5118	Minimum supercritical boost setpoint (from v0.00.6).			1087 - 1200	1160
5115	Heat reclaim boost pressure set point			1000 - 1350	1232
5116	Rate of change of pressure on heat reclaim (psi/sec)			0.1 - 10.0	1.0

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ITEM	DESCRIPTION	CODE	CODE MEANING	RANGE	ITEM 9 VALUE
5117	Rate of change of pressure on heat reclaim boost (psi/sec)			0.1 - 10.0	1.0
5119	Rate of change of pressure on return to normal (psi/sec) (from v0.00.8)			0.1 - 10.0	1.0
5138	Bypass valve slew rate on return to normal refrigeration (%/sec) (from v0.00.8)			0.1 - 10.0	2.0
5139	Heat reclaim supercritical temperature constant (from v0.00.8)			2.0 - 10.0	5.0
9.1 HEAT EXCHANGER BYPASS VALVE					
5121	Heating fluid flow temperature				
5100	Heating fluid flow temperature set point			40.0 - 65.0	50.0
5136	Heating fluid flow temperature deadband (from v0.00.7)			0.0 - 2.0	1.0
5101	Minimum bypass valve closing			0 - 25	0
5102	Maximum bypass valve closing			25 - 100	100
5103	Bypass valve proportional gain (up to v0.00.6)			0.01 - 99.99	10.0
5104	Bypass valve integral gain (up to v0.00.6)			0.1 - 1.00	0.10
5106	Forced bypass valve output			0 - 100.0	
5107	Bypass valve forced shut				
5109	Bypass valve closing				
5110	Bypass valve proportional term (up to v0.00.6)				
5111	Bypass valve integral term (up to v0.00.6)				
5113	Bypass valve output slew rate (%/sec)			0.1 - 10.0	0.5
9.2 GAS COOLER BYPASS VALVE					
226	Gas cooler bypass	oFF Gcb.E	Disabled Enabled	0 - 1	Gcb.E
22	Cooler pressure				
370	Operational pressure set point				
5087	Gas cooler bypass differential			0 - 50	15
5088	Minimum bypass valve opening (from v0.00.2)			0 - 25	0
5089	Maximum bypass valve opening (from v0.00.2)			up to v0.00.5	
				25 - 100	100
				from v0.00.6	
				1 - 100	100
5053	Bypass valve proportional gain (up to v0.00.5).			0.01 - 99.99	10.00
5054	Bypass valve integral gain (up to v0.00.5).			0.0 - 1.00	0.10

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ITEM	DESCRIPTION	CODE	CODE MEANING	RANGE	ITEM 9 VALUE
5056	Forced bypass valve output			0 - 100.0	
5057	Bypass valve forced shut				
5059	Bypass valve position				
5083	Bypass valve proportional term (up to v0.00.5).				
5084	Bypass valve integral term (up to v0.00.5).				
5086	Bypass valve output slew rate (%/sec)			0.1 - 10.0	0.5
9.3 HEAT DELIVERY CALCULATIONS					
5130 (204)	Heat delivered from heat exchanger				
5131 (205)	Average heat delivered from heat exchanger (kW) over the last 15mins				
5132	Heating fluid specific heat (x1000)			700 - 1000	1000
5133	Heating fluid specific gravity (x1000)			1000 - 1200	1000
5134	Heating fluid pump flow at max (m3/hr)			1.0 - 200.0	10.0
215	Heating fluid pump running	P.StP P.run	Stopped running		
5135 (216)	Heating fluid temperature difference				
10. INPUTS AND OUTPUTS					
20	Operating mode	oFF Subc SuPr H.rc H.rc.b	Manual Subcritical Supercritical Heat reclaim Heat reclaim boost		
170	Inputs	Graphical	See display data bit1 = input 1		
171	Auto/manual (IP-1)	OFF Auto	Manual controller dormant Auto mode		
172	Adiabatic cooling system healthy (IP-2) (from v0.01.1)	A.C.Ft Hty	Fault Healthy		
173	Fans healthy (IP-3)	Fn.Ft Hty	Fan fault Fans ok		
174	HP valve healthy (IP-4)	tn.Ft Hty	Valve fault Valve ok		
160	Outputs	Graphical	See display data bit1 = output 1		
161	Adiabatic system control (LN/LD1) (from v0.01.1)	OFF En.A.C	Off Enable Adiabatic system		
162	HP valve state (LN/LD-2)	Clr En.H.P	Off HP valve enabled		
163	Watchdog output (LN/LD-3)	OFF On	Watchdog valve Watchdog healthy		

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164	High discharge pressure (LN/LD-4)	clr HidP	Discharge ok High pressure		
260	interface outputs	Graphical	See display data		
261	LN/DQ1 Run pump	oFF run.P	Off Run pump		
262	LN/DQ2 Energise gas cooler bypass	oFF C.b.En	Off Energised		
263	LN/DQ3 Energise heat exchanger bypass	oFF H.b.En	Off Energised		
270	Interface inputs	Graphical	See display data		
271	DI1 Pump fault	CLr C.Pu.F	No fault Fault		
272	DI2 Heat system healthy	P.L.Ft Hty	Fault Healthy		
273	DI3 Activate heat recovery	oFF H.r.r.i	Off Activate		
274	DI4 Activate heat recovery boost	oFF H.r.r.b	Off Activate boost		

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			2018 - 2048	
18	Daylight saving enable	Stnd dAY.S	Standard time Daylight saving time		

12. DISPLAY FUNCTIONS

9392	Temperature display unit choice	CELS FAhr	Celsius Fahrenheit	0 - 1	Cels
9393	Pressure display unit choice	0 1 2 3 4	PASC PSI bAr KPA bArA	MPa p.s.i bar kPa Bar absolute	0 - 4 psi
189	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	B.oFF

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13. RESTORE FACTORY DEFAULTS					
966	Virtual bitswitch setting				
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		
14. RESTORE PARAMETERS FROM NETWORK					
<p>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.</p>					
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	
15. SYSTEM ALARMS					
80	Group alarm 81 - 88	Graphical	See display data		
83	Low cooler exit pressure	Clr Lo.dP	No fault Fault		
84	High cooler exit pressure	Clr Hi.dP	No fault Fault		
87	High cooler exit temperature	Clr Hi.C.E	No fault Fault		
88	Cooler 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 th.Ft	No fault Fault		
93	High cooler pressure differential fault (from v0.00.3)	Clr Hi.C.d	No fault Fault		
95	Adiabatic cooling fault (from v0.01.1)	Clr A.C.Ft	No fault Fault		
96	Healthy system interface fault	Clr Pt.Flt	No fault Fault		
98	Ambient temperature difference error (from v0.01.1)	Clr A.t.d.E	No fault Fault		

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GAS COOLER CONTROLLER WITH HEAT RECLAIM
ITEM NUMBERS**







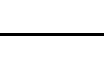
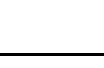
HP380

ITEM	DESCRIPTION	CODE	CODE MEANING	RANGE	ITEM 9 VALUE
910	Group alarm 911-918	Graphical	See display data		
915	Plant fault	Clr P.Fit	No Fault Fault		
920	Group alarms 921-928	Graphical	See display data		
921	Heating system fault	Clr Hr.FL	No Fault Fault		
923	Heating pump fault	Clr Pu.FL	No Fault Fault		
927	High heating fluid flow temperature (from v0.00.8)	Clr Hi.F.t	No Fault Fault		
16. DIAGNOSTIC & TEST FUNCTIONS					
6	JTL Network communications speed	4.8	Kilo Baud		
7	Communications method	HALF	2 wire		
8	Bitswitch setting				
954	Current zone no				
967	Latest unit no polled on zone				
973	Latest polling interval This time shows the polling interval between the last two untimed broadcast messages.	min:sec			
974	Time since last awake message	min:sec			
99	Test digital displays	Clr SEt	Not active Test active	0 - 1	
100	Test inputs	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				
10	Processor alarms (11 - 17)	Graphical	See display data		
14	Background loop fault (v0.0.2 on)	Clr BL.Ft	No Fault Fault		
16	NVRAM fault	Clr n.ft	No Fault Fault		

DISPLAY DATA		HP380
NORMAL DISPLAY		
999.9	Pressure in bar	
-	Not selected	
ALARM TEXT (in descending priority order)		
P.FLd	Plant failed	
Hi.dP	High cooler exit pressure	
FAn	Cooler fan problem	
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
None	
1	
2	
3	
4	
5	
6	
7	
8	