

JTL COMPRESSOR PACK ITEM NUMBERS					CPLS	
ITEM	DESCRIPTION	CODE	CODE MEANING	BIT	RANGE	ITEM 9 VALUE
				4321		
0	Unit type	CPLS				
1	Unit number				0.1 - 899.9	
2	Time of day				00:00 - 23:59	
6	Communications speed	4800 600	Baud rate Baud rate			
8	Bitswitch Setting					
9	Set default values selected by Bitswitch				1234 only	
<b>PROCESSOR ALARMS</b>						
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			
<b>MISCELLANEOUS DATA</b>						
19	Software Version number					
<b>PRESSURE TRANSDUCERS</b>						
21	Suction pressure					
22	Discharge pressure					
26	Absolute suction pressure transducer selection	Su.GA Su.Ab	Gauge pressure Absolute pressure		0 - 1	Su.GA
28	Suction pressure transducer selection	OFF S.SEL	Not selected Selected		0 - 1	S.SEL
29	Discharge pressure transducer selection	OFF d.SEL	Not selected Selected		0 - 1	d.SEL

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<b>TEMPERATURE PROBES</b>						
31	Suction gas Temperature					
32	Discharge gas Temperature					
33	Saturated gas Temperature					
34	Condenser air on temperature					
35	Condenser air off temperature					
36	Hot water temperature					
37	Plant room temperature					
39	Display type selection	LEd.1 LEd.2	2 displays 4 displays		0 - 1	LEd.2
<b>SUCTION PRESSURE CONTROL</b>						
40	Suction pressure setpoint	CPLS00 (v0.00.0)				
				xxxC xxxO	0 - 20 20 - 50	8 35
		CPLS01-CPLS05 (v0.00.1 - 0.00.5)				
				xxxC xxxO	0 - 20 20 - 50	4 30
		CPLS06 on (v0.00.6 on)				
				xxxC xxxO	0 - 20 15 - 50	4 25
41	Low suction pressure alarm level	CPLS00-CPLS02 (v0.00.0 - 0.00.2)				
				xxxC xxxO	- 5 to +15 10 - 40	0 25
		CPLS03-CPLS05 (v0.00.3 - 0.00.5)				
				xxxC xxxO	- 5 to +15 10 - 40	0 20
		CPLS06 on (v0.00.6 on)				
				xxxC xxxO	- 5 - 15 10 - 40	0 15
42	High suction pressure alarm level			xxxC xxxO	10 - 30 30 - 60	20 50
43	Suction pressure deadband			xxxC xxxO	0 - 5 0 - 10	2 5
44	Suction pressure increase time constant				1 - 60	30
45	Suction pressure decrease time constant				1 - 60	15

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46	Suction pressure to hold off stage 2			xxxC xxxO	50 - 100 60 - 100	60 80
47	Suction pressure to hold off stage 3			xxxC xxxO	30 - 100 50 - 100	40 60
48	Suction pressure offset during gas defrost	CPLS00 (v0.00.0)				
				xxxC xxxO	0 - 10 0 - 15	2 10
		CPLS01-CPLS05 (v0.00.1 - 0.00.5)				
				xxxC xxxO	0 - 10 0 - 15	3 5
		CPLS06 on (v0.00.6 on)				
				xCCC xCCO xCOC xCOO xOCC	0 - 10 0 - 15 0 - 10 0 - 15 0 - 10	2 2 0 0 2
<b>DISCHARGE PRESSURE CONTROL</b>						
50	Discharge pressure setpoint	CPLS00 (v0.00.0)				
					150 - 250	200
		CPLS01 on (v0.00.1 on)				
			150 - 250	180		
51	Low discharge pressure alarm level	CPLS00-CPLS05 (v0.00.0 - 0.00.5)				
					100 - 200	150
		CPLS06 on (v0.00.6 on)				
			80 - 180	100		
52	High discharge pressure alarm level	CPLS00-CPLS05 (v0.00.0 - 0.00.5)				
					150 - 300	250
		CPLS06 on (v0.00.6 on)				
			150 - 300	260		
53	Discharge pressure deadband	CPLS00 (v0.00.0)				
					0 - 20	10
		CPLS01 on (v0.00.1)				
			0 - 20	5		
54	Condenser control time constant				1 - 250	30
55	Discharge pressure to reduce capacity	CPLS00-CPLS05 (v0.00.0 - 0.00.5)				
					200 - 320	300
		CPLS06 on (v0.00.6 on)				
			200 - 320	265		
56	Gas temperature to open regulator valve				25 - 40	30

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57	Discharge pressure offset during gas defrost	CPLS00 (v0.00.0)				
					0 - 50	20
		CPLS01-CPLS05 (v0.00.1 - 0.00.5)				
					0 - 50	50
		CPLS06 on (v0.00.6 on)				
					xCCC xCCO xCOC xCOO xOCC	0 - 50 0 - 50 0 - 50 0 - 50 0 - 50
<b>OUTPUT STATES</b>						
60	Watchdog status	OFF On	Not used			
61	Dump valve control	OFF Du.on	Not used			
62	Gas temperature regulator valve control	OFF Gr.on	Not used			
63	Differential pressure relief valve control (LN/LD-1)	dp dP.rl	Diff. pressure Diff. pressure relief			
64	Cool gas valve control (LN/LD-2)	OFF CG.on	Off On			
<b>INPUT STATES</b>						
71	Auto/manual (IP-1)	OFF  Auto	Manual (pack controller dormant) Auto mode			
72	Liquid level (IP-2)	CLr Lo.Li	Liquid level o.k Low liquid level			
73	Refrigerant leak	CLr rEF.L	Not used			
74	Plant failed (IP-1)	CLr P.FLd	No failure Plant failed			

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<b>SYSTEM ALARMS</b>						
80	Group alarm 81 - 88	0 1 - 255	No alarms Check 81 - 88			
81	Low suction pressure	Clr Lo.SP	No fault Fault			
82	High suction pressure	Clr Hi.SP	No fault Fault			
83	Low discharge pressure	Clr Lo.dP	No fault Fault			
84	High discharge pressure	Clr Hi.dP	No fault Fault			
85	Low level liquid	Clr Lo.Li	No fault Fault			
86	Motor thermistor fault	Clr Th.Ft	No fault Fault			
87	Motor overload fault	Clr OL	No fault Fault			
88	Condenser fault	Clr Fn.Ft	No fault Fault			
<b>MISCELLANEOUS DATA</b>						
89	Thermistor excitation value (Factory test)		Not used			
<b>SYSTEM ALARMS</b>						
90	Group alarm 91 - 98	0 1 - 255	No alarms Check 91 - 98			
91	Pressure transducer fault	Clr Pt.Ft	No fault Fault			
92	Thermistor fault	Clr th.Ft	No fault Fault			
93	Thermistor excitation voltage	Clr PS.Ft	No fault Fault			
94	Pressure switch trip HP/LP	Clr Pr.FI	No fault Fault			
95	Defrost interface card fault	Clr Stub	No fault Fault			
96	Compressor interface card fault	Clr CP.IF	No fault Fault			
97	Compressor fault	Clr CPr.F	No fault Fault			
98	Oil pressure fault	Clr OIL.F	No fault Fault			
<b>UTILITY</b>						
99	Test digital displays	Clr SEt	Not active Test active		0 - 1	

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ITEM	DESCRIPTION	CODE	CODE MEANING	BIT	RANGE	ITEM 9 VALUE
				4321		
<b>COMMON COMPRESSOR DATA</b>						
100	Number of compressors				0 - 8	8
101	Number of steps on load					
102	Forced number of steps				0 - 24	
<b>TEMPERATURE PROBE SELECTION</b>						
103	Suction temperature	OFF t1.En	Not selected Selected		0 - 1	v00 - 05 t1.En v06- OFF
104	Discharge temperature	OFF t2.En	Not selected Selected		0 - 1	v00 - 05 t2.En v06- OFF
105	Saturated gas temperature	OFF t3.En	Not selected Selected		0 - 1	v00 - 05 t3.En v06- OFF
106	Condenser air on temperature	OFF t4.En	Not selected Selected		0 - 1	v00 - 05 t4.En v06- OFF
107	Condenser air off temperature	OFF t5.En	Not selected Selected		0 - 1	v00 - 05 t5.En v06- OFF
108	Hot water temperature	OFF t6.En	Not selected Selected		0 - 1	v00 - 05 t6.En v06- OFF
109	Plant room temperature	OFF t7.En	Not selected Selected		0 - 1	v00 - 05 t7.En v06- OFF

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				4321		
<b>COMPRESSOR DATA</b>						
A general form of item numbers for compressors is shown below. The "x" shown in each item number should be replaced by the compressor number. This sequence covers item numbers 110 - 189.						
1x0	Number of steps				0 - 3	1
1x1	Number of steps on load					
1x2	Running hours (in 10s of hours)				0 - 9999	
1x3	Compressor status  <u>Note:-</u>  If more than one input is present, the numbers shown in brackets are added together and displayed instead.	run (128) rdy (64) O.L (32) Lo.Pr (16) Hi.Pr (8) Oil.F (4) th.Ft (2) (0)	Running.  Ready to run (no faults). Motor overload.  Low pressure fault.  High pressure fault.  Oil pressure failure.  Motor thermistor fault. Off or compressor interface fault.			
1x4	Compressor restart inhibit timer (mins)					
1x6	Compressor capacity in effective KW	CPLS-08 on (v 0.00.8 on)				
					1 - 100	10
1x7	Forced number of compressor steps				0 - 3	
1x8	Force compressor off				0 - 1	
<b>CONDENSER CONTROL</b>						
190	Number of condenser steps				0 - 7	7
191	Number of condenser steps running					
192	Forced number of condenser steps				0 - 7	
<b>MISCELLANEOUS DATA</b>						
193	Heat reclaim input	OFF Hr.On	Heat reclaim on Heat reclaim off			
194	Analog/stepped condenser control selection	STEP A.LOG	Step control Analog control		0 - 1	STEP
195	Analog condenser control system gain		Pressure in 0.1psi to give 1% change in speed		1 - 99	10

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				4321		
<b>COMMON DEFROST CONTROL DATA</b>						
200	Number of defrost systems	CPLS00-CPLS05 (v0.00.0 - 0.00.5)				
					0 - 28	28
		CPLS06 on (v0.00.6 on)				
					0 - 28	21
201	Maximum gas defrost duration (any defrost duration set less than or equal to this time is assumed to be a gas or electric defrost system, all others are assumed to be off-cycle systems)				15 - 40	25
202	Time before gas defrosts due	CPLS00-CPLS05 (v0.00.0 - 0.00.5)				
					0 - 10	10
		CPLS06 on (v0.00.6 on)				
					0 - 10	2
203	Time before end of gas defrosts	CPLS00-CPLS05 (v0.00.0 - 0.00.5)				
					0 - 5	0
		CPLS06 on (v0.00.6 on)				
					0 - 5	1
204	Maximum number of gas/electric defrosts allowed	CPLS05 on (v0.00.5 on)				
					1 - 28	3
205	Diff pressure relief (liquid line) valve type	CPLS05 (v0.00.5)				
		n.c	Normally closed		0 - 1	n.c
		n.o	Normally open			
		CPLS06 on (v0.00.6 on)				
				xCCC	0 - 1	n.c
		xCCO	0 - 1	n.c		
		xCOC	0 - 1	n.c		
		xCOO	0 - 1	n.c		
		xOCC	0 - 1	n.o		
209	Stub defrost interfaces selection	OFF	Stub interfaces not used		0 - 1	On
		On	Stub interfaces used for defrost control			



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				4321		
<b>DEFROST DATA (v0.00.6 on)</b>						
210	Stub 1 first daily defrost			xCCx xCOx xOCC	00:00 - 23:59	12:00 12:00 12:00
220	Stub 2 first daily defrost			xCCx xCOx xOCC	00:00 - 23:59	12:20 12:30 12:15
230	Stub 3 first daily defrost			xCCx xCOx xOCC	00:00 - 23:59	12:40 13:00 12:15
240	Stub 4 first daily defrost			xCCx xCOx xOCC	00:00 - 23:59	13:00 13:30 12:30
250	Stub 5 first daily defrost			xCCx xCOx xOCC	00:00 - 23:59	13:20 14:00 12:30
260	Stub 6 first daily defrost			xCCx xCOx xOCC	00:00 - 23:59	13:40 14:30 12:45
270	Stub 7 first daily defrost			xCCx xCOx xOCC	00:00 - 23:59	14:00 15:00 12:45
280	Stub 8 first daily defrost			xCCx xCOx xOCC	00:00 - 23:59	14:20 15:30 13:00
290	Stub 9 first daily defrost			xCCx xCOx xOCC	00:00 - 23:59	14:40 16:00 13:00
300	Stub 10 first daily defrost			xCCx xCOx xOCC	00:00 - 23:59	15:00 16:30 13:15
310	Stub 11 first daily defrost			xCCx xCOx xOCC	00:00 - 23:59	15:20 17:00 13:15
320	Stub 12 first daily defrost			xCCx xCOx xOCC	00:00 - 23:59	15:40 17:30 18:00
330	Stub 13 first daily defrost			xCCx xCOx xOCC	00:00 - 23:59	16:00 18:00 18:15
340	Stub 14 first daily defrost			xCCx xCOx xOCC	00:00 - 23:59	16:20 18:30 18:15
350	Stub 15 first daily defrost			xCCx xCOx xOCC	00:00 - 23:59	16:40 19:00 18:30

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				4321		
360	Stub 16 first daily defrost			xCCx xCOx xOCC	00:00 - 23:59	17:00 19:30 18:30
370	Stub 17 first daily defrost			xCCx xCOx xOCC	00:00 - 23:59	17:20 20:00 18:45
380	Stub 18 first daily defrost			xCCx xCOx xOCC	00:00 - 23:59	17:40 20:30 18:45
390	Stub 19 first daily defrost			xCCx xCOx xOCC	00:00 - 23:59	18:00 21:00 19:00
400	Stub 20 first daily defrost			xCCx xCOx xOCC	00:00 - 23:59	18:20 21:30 19:00
410	Stub 21 first daily defrost			xCCx xCOx xOCC	00:00 - 23:59	18:40 22:00 19:15
420	Stub 22 first daily defrost			xCCx xCOx xOCC	00:00 - 23:59	19:00 22:30 06:00
430	Stub 23 first daily defrost			xCCx xCOx xOCC	00:00 - 23:59	19:20 23:00 06:15
440	Stub 24 first daily defrost			xCCx xCOx xOCC	00:00 - 23:59	19:40 23:30 06:15
450	Stub 25 first daily defrost			xCCx xCOx xOCC	00:00 - 23:59	20:00 00:00 06:30
460	Stub 26 first daily defrost			xCCx xCOx xOCC	00:00 - 23:59	20:20 00:30 06:30
470	Stub 27 first daily defrost			xCCx xCOx xOCC	00:00 - 23:59	20:40 01:00 06:45
480	Stub 28 first daily defrost			xCCx xCOx xOCC	00:00 - 23:59	21:00 01:30 06:45

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				4321		
<p>A general form of item numbers for defrost systems is shown below.  The "x" shown in each item number should be replaced by the system number up to system 9.  Systems 10 - 19 use items 300 - 399 and systems 20 - 28 use items 400 - 489.</p>						
2x1	Duration of defrost (mins)			xCCx xCOx xOCC	5 - 60	20 30 15
2x2	Defrost pattern	0 1 - 6 7 8	No defrosts.  Number of equally spaced daily defrosts.  3 defrosts per day, but the 3rd is missing.  4 defrosts per day, but the 4th is missing.	xCxC xCxO xOCC	0 - 8	2 4 1
2x3	Forced defrost	OFF Fd.on	No forced defrost Forced defrost on		0 - 1	
2x4	Forced refrigeration	OFF Fr.on	No forced refrig. Forced refrig. on		0 - 1	
2x5	Defrost mode	0 dEF dr.dn F.dEF F.rEF d.inh FAIL	Refrig. Defrost Drain down Forced defrost. Forced refrig. Defrost inhibited (see item 204) Defrost interface fail			
2x6	Drain down time	CPLS00-CPLS05 (v0.00.0 - 0.00.5)				
					0 - 15	5
		CPLS06 on (v0.00.6 on)				
				xCxx xOxx	0 - 15 0 - 15	5 0
2x8	No of evaporators on this defrost system	0 1 - 10	Defrost terminated on time only.  JTL units terminate defrost on temp. and inform pack		0 - 10	2
2x9	No of JTL-controlled evaporators terminated					

**BITSWITCH SETTINGS**

4321

- x**CCC** LT compressor pack - Gas defrost
- x**CCO** HT compressor pack - Gas defrost
- x**COC** LT compressor pack - Elec defrost
- x**COO** HT compressor pack - Elec defrost
- x**OCC** LT compressor pack - "MIGROS"

where **C** = CLOSED or ON  
**O** = OPEN or OFF  
 x = Don't care

Note 1: For unmarked switches  
 C = dot visible  
 O = dot not visible

Note 2: Setting the bitswitches alone has no effect.  
 Use **ITEM 9** to set the default values after the switches are set.

<b>DISPLAY DATA</b>		<b>CPLS</b>
<b>NORMAL DISPLAY</b>		
999.9	Pressure in psi	
99.99	Compressor/Condenser stages running	
99	System on defrost	
<b>ALARM TEXT (in descending priority order)</b>		
P.FLd	Plant failed	
Hi.SP	High suction pressure	
Hi.dP	High discharge pressure	
Stub	Defrost interface fault	
Lo.Li	Low liquid level	
CPr	Compressor fault	
Lo.dP	Low discharge pressure	
Lo.SP	Low suction pressure	
FAn	Condenser fan problem	
<b>OTHER TEXT</b>		
JTL	Start-up text	