JTL COMPRESSOR PACK ITEM NUMBERS	EPIC

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ITEM	**DESCRIPTION**	**CODE**	**CODE MEANING**	**FACTORY DEFAULTS**	**RANGE**	**ITEM 9 VALUE**
1. Jnet NETWORK IDENTIFICATION						
0	Unit type	EPIC	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	1 - 3	PSI
2.1 SUCTION PRESSURE						
21	Suction pressure					
146	Average suction pressure over 1 hour					
42	High suction pressure alarm level			0 (xc) 1 (xo)	10 - 50 25 - 80	20 60
41	Low suction pressure alarm level			0 (xc) 1 (xo)	-5 to +15 5 to 40	0 20
121	Pressure transducer selection	OFF S.t.En	Disabled Enabled		0 - 1	St.En
126	Absolute suction pressure transducer selection	S.t.GA S.t.Ab	Gauge (0 to 100psi) Absolute (-15 to 85psi)	0 (xc) 1 (xo)	0 - 1 0 - 1	St.GA St.Ab
2.2 DISCHARGE PRESSURE						
22	Discharge pressure					
148	Average discharge pressure over 1 hour					
52	High discharge pressure alarm level				140 - 300	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
2.3 LIQUID PRESSURE (v0.00.8 on)						
23	Liquid pressure					
149	Average liquid pressure over 1 hour					
383	Liquid pressure differential					
384	Minimum liquid pressure differential				0 - 15.0	10.0
123	Liquid pressure transducer selection	OFF L.t.En	Disabled Enabled		0 - 1	OFF

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	3. TEMPERATURES 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
31	Suction gas temperature					
131	Suction temperature	OFF t1.En	Not selected Selected		0 - 1	t1.En
32	Discharge temperature					
132	Discharge temperature	OFF t2.En	Not selected Selected		0 - 1	t2.En
33	Saturated gas temperature					
133	Saturated gas temperature	OFF t3.En	Not selected Selected		0 - 1	t3.En
35	Subcooled liquid temperature					
135	Subcooled liquid temperature	OFF t5.En	Not selected Selected		0 - 1	t5.En
37	Plant room temperature					
137	Plant room temperature	OFF t7.En	Not selected Selected		0 - 1	t7.En
144	Minimum superheat	0.0	Alarm disabled		0.0 - 20.0	0.0
141	Suction superheat					
157	Refrigerant type	3 404 4 407A 5 407B 6 507 7 408 11 407F 12 290 13 407C	R404A R407A R407B R507 R408A R407F R290 (Propane) R407C		upto v0.01.4 3 - 6 from v0.01.5 3 - 7	R404A
897	Site temperature (from broadcast v0.01.4 on)					
898	Site relative humidity (from broadcast v0.01.4 on)					
896	Site absolute humidity (from broadcast v0.01.4 on)					
899	Outside temperature (from broadcast v0.01.4 on)					

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ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULTS	RANGE	ITEM 9 VALUE
	4. SUCTION PRESSURE CONTROL If suction pressure optimisation is selected then the suction pressure setpoints as set in item 40 can be adjusted upwards to the maximum by a JTL optimisation unit connected to the network. If there is no JTL optimisation unit on the network then the setpoint remains at the original set value. In the event of network failure the setpoints revert to the original set value after a time delay of 15 minutes.					
150	Select network optimised suction pressure control	oFF OPt.E	Not added Selected		0 - 1	oFF
40	Suction pressure setpoint			0 (xc) 1 (xo)	0 to + 20 5 to 60	8 35
151	Optimised suction setpoint					
152	Optimised suction setpoint upper limit			0 (xc) 1 (xo)	5 - 20 15 - 60	15 55
43	Suction pressure deadband			0 (xc) 1 (xo)	0 - 5 0 - 10	2 4
44	Suction pressure increase time constant				1 - 60	30
45	Suction pressure decrease time constant				1 - 60	15
48	Suction 1st stage hold on and fast unload setpoint			0 (xc) 1 (xo)	- 8 to +20 2 to 60	0 10
195	Enable low suction pressure safety (v0.00.5 on)	OFF LP.En	Disabled Enabled		0 - 1	OFF
196	Low suction pressure safety shutdown level (v0.00.5 on)			0 (xc) 1 (xo)	-5 to 10 10 to 40	0 20
191	Integrated pressure error					
181	Suction increase next step (kW)					
182	Suction decrease next step (kW)					
	5. COMPRESSOR CONTROL Forced functions remain forced if the Maintenance Unit remains plugged in. They are automatically cancelled 30 minutes after the Maintenance Unit is unplugged.					
	5.1 COMMON DATA					
200	Number of compressors				0 - 6	6
205	Maximum number of compressors allowed				1 - 6	6
201	Number of steps on load					
202	Number of compressors running					
203	Total capacity loaded (in kW)					
204	Forced number of suction stages				0 - 40	
208	Minimum compressor stop time (seconds)				0 - 240	30
206	Compressor fault alarm delay (mins)				0 - 10	0
158	Compressor fault repeat alarm delay time (v0.00.5 on)	00:00	feature disabled		00:00 -24:00	00:00

ITEM	DESCRIPTION	CODE		CODE MEANING	FACTORY DEFAULTS	RANGE	ITEM 9 VALUE
	5.2 COMPRESSOR DATA 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 210-269 for compressors 1 - 6.						
2x5	Compressor 1 isolation (from v0.00.5 to v0.00.9) This must be enabled for compressor 1 to run. If the inverter is enabled (item 330) and the compressor is set for step control (item 210) in the event of an inverter fault the controller will automatically revert to step control. From v0.01.0) This must be enabled for compressor 1 to run in step control. When item 210 is set to inverter controlled and the inverter is enabled (item 330) and item 215 is enabled in the event of an inverter fault the controller will automatically revert to single stage step control. Compressors 2-6 isolation (from v0.00.5) This must be enabled for the relevant compressor to run.	0 1	ISOL OPEr	disabled enabled		0 - 1	OPEr
2x3	Compressor status	rdy 0		Ready to run (no faults) Off or compressor interface fault			
2x6	Compressor capacity in effective kW					1 - 100	10
2x0	Number of steps (v0.00.0 only)			compressor 1, 3-6 compressor 2		0 -1 0 - 2	1 2
2x0	v0.00.1 on Compressor loading method (From v0.005 compressor 1 and 3 can be set for 2 steps when item 167 is set appropriately) From v0.00.8 compressors 1-3 can be set to unequal capacity steps 66/100% From v0.01.0 compressor 1 can be set to run as the inverter controlled m/c and automatically revert to a 1 stage m/c on inverter failure.	Compressors 4-6					
		0 1	none 1.StP	not controlled 1 step		0 - 1	1.StP
		Compressors 1 - 3					
		0 1 2 3 4	none 1.StP 2.StP 2.UnE 1.con	not controlled 1 step 2 steps (50/100%) 2 steps (66/100%) Inverter controlled (compressor 1 only)		v0.00.1 to v0.00.7 0 - 2 v0.00.8 to v0.00.9 0 - 3 v0.01.0 on 0 - 4	2.StP
2x1	Number of steps on load						
2x8	Force compressor off	CP.En C.OFF		Compressor enabled to run Forced off		0 - 1	
2x7	Forced number of compressor steps					0 - 4	
2x2	Total running hours (in 10s of hours)					0 - 9999	
37x	Compressor run time last 24 hours (371 for compressor 1 etc)						

ITEM	DESCRIPTION	CODE		CODE MEANING	FACTORY DEFAULTS	RANGE	ITEM 9 VALUE
2x4	Compressor restart inhibit timer (Seconds)						
2x9	Compressor number of starts per hour					4 - 20	10
35x	Average number of starts per hour last 24 hours (351 for compressor 1 etc)						

5.3 COMPRESSOR INPUT AND OUTPUT STATUS (V0.00.4)

Note 1. If combinations of input or output are present then the value displayed is added up from the individual input/output values as follows:

1 Input/Output 1
2 Input/Output 2
4 Input/Output 4
8 Input/Output 5
16 Input/Output 6
32 Input/Output 6
64 Input/Output 7
128 Input 8

167	Compressor output configuration (v0.00.5 on) (Note: When compressor 1 is set for 50% unloader then the inverter is disabled) From v0.01.0 when compressor 1 is <u>not</u> set for inverter control all compressors can be used for stage control.	0 1 2 3 4 5	CF-0 CF-1 CF-2 CF-3 CF-4 CF-5	All compressors 1 stage Compressor 2 50% unload Compressors 2 and 3 50% unload Compressor 1 50% unload Compressor 1 and 2 50% unload Compressor 1 to 3 50% unload		v0.00.5 to v0.00.6 1 - 5 v0.00.7 on 0 - 5	 CF-1 CF-1
111	Compressor input status interface 1						
112	Compressor input status interface 2						
113	Compressor output status interface 1						
114	Compressor output status interface 2						
909	Interface baud rate (v0.00.9 on) Note, for interface type IF1-6 & IF11-14 this must be set to 600 baud. For interface type IF31-35 this cannot be set to 600 baud. 2400 baud is recommended. The IF settings should be set to match this speed.	0 1 2 3 4 5	0.6 1.2 2.4 4.8 9.6 19.2	600 baud 1200 baud 2400 baud 4800 baud 9600 baud 19200 baud		0 - 5	0.6

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ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULTS	RANGE	ITEM 9 VALUE
	6. INVERTER DATA From v0.00.5 the inverter is disabled when compressor 1 is set for 50% unloader (see item 167) From v0.01.0 when compressor 1 is <u>not</u> set for inverter control all compressors can be used for stage control.					
330	Select inverter control	OFF In.1S	Not selected Inverter selected		0 - 1	0
151	Optimised suction setpoint (operational)					
153	Optimised HT suction setpoint (v0.00.9 on)					
347	Suction pressure error (v0.00.5 on)					
344	Inverter capacity loaded in effective kW					
341	Minimum cut out pressure				- 8 to +40	0
64	Inverter restart pressure (from v0.01.8)			0 (xc) 1 (xo)	0 to +20 5 to 60	8 35
340	Time constant				1 - 240	30
339	Speed gain				v0.00.1	
					1 - 25	10
					v0.00.2 on	
					1-250	100
345	Current proportional term (v0.00.2 on)					
346	Current Integral term (v0.00.2 on)					
331	Number of steps on load	0 127	Off Maximum			
332	Inverter run hours (in 10's of hours)				0 - 9999	
333	Inverter status	rdy c.hty i.hty 0	ready to run (Inverter & compressor healthy) Inverter compressor healthy Inverter healthy not ready to run			
343	Minimum steps allowed				1 -63	1
342	Maximum steps allowed				64 - 127	127
335	Inverter capacity at minimum speed in effective kW				1 - 100	5
336	Inverter capacity at maximum speed in effective kW				1 - 100	10
337	Forced no. of steps				0 - 127	
338	Force inverter off	CP.En C.OFF	Enabled to run Inverter forced off		0 - 1	
909	Interface baud rate (See section 5.3)					

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ITEM	DESCRIPTION	CODE		CODE MEANING	FACTORY DEFAULTS	RANGE	ITEM 9 VALUE
7. DISCHARGE PRESSURE CONTROL From v0.01.4 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 setpoint					100 - 250	150
350	Maximum discharge pressure setpoint (from v0.01.4)					175 - 250	200
899	Outside temperature (from v0.1.4)						
363	Floating discharge temperature differential from (v0.01.4)	0.0		Function disabled		0 - 15	0.0
364	Effective minimum discharge temperature (from v0.01.4)						
365	Condenser operating temperature (from v0.01.4)						
370	Optimised discharge pressure point						
386	Control pressure selection (v0.00.8 on)	0 1	diS.P Li.P	Discharge pressure Liquid pressure		0 - 1	diS.P
394	Analogue/stepped condenser control selection	1 2 3 4	A.LOG CS-A CS-b CS-C	Analogue control Sequence A Sequence B Sequence C		1 - 4	CS-A
53	Discharge pressure deadband					0 - 20	5
395	Analogue fan speed gain					5 - 50	10
54	Condenser control time constant					1 - 250	30
55	Discharge pressure to reduce capacity					140 - 320	300
192	Integrated discharge pressure error						
8. 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.							
8.1 STEP CONTROL							
390	Number of condenser steps					0 - 14	7
391	Number of condenser steps running						
392	Forced number of condenser steps					0 - no of steps (item 390)	
8.2 ANALOGUE CONTROL							
368	Maximum speed at night (%) (v0.00.9 on)					50 - 100	100
369	Select network timer for nightime operation (v0.00.9 on)	0 1 - 8		Disabled Timer number		0 - 8	0
391	Number of condenser steps running						
397	Number of condenser steps in backup analogue mode					up to v0.00.3	
						0 - 99	99
						v0.00.4 on	
						0 -127	127
392	Forced number of condenser steps					0 - 127	

ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULTS	RANGE	ITEM 9 VALUE
	8.3 CONDENSER INPUT & OUTPUT STATUS Note 1. If combinations of input or output are present then the value displayed is added up from the individual input/output values as follows: 1 Input/Output 1 2 Input/Output 2 4 Input/Output 4 8 Input/Output 5 16 Input/Output 6 32 Input/Output 6 64 Input/Output 7					
	STEP CONTROL STATUS					
389 388 396 387	Output status interface 1 Output status interface 2 Input status interface 1 Input status interface 2	1 1 - 2 1 - 3 1 - 4 1 - 5 1 - 6 1 - 7 1.7 1 - 2.7 1 - 3.7 1 - 4.7 1 - 5.7	1 on 1 & 2 on 1, 2 & 3 on 1, 2, 3 & 4 on 1, 2, 3, 4 & 5 on 1, 2, 3, 4, 5 & 6 on 1, 2, 3, 4, 5, 6 & 7 on 1 & 7 on 1, 2 & 7 on 1, 2, 3 & 7 on 1, 2, 3, 4 & 7 on 1, 2, 3, 4, 5 & 7 on			
	ANALOGUE CONTROL STATUS					
393	Interface inputs and relay outputs (from v0.01.1)	In- - - - 1 - - - - 2 plus any combination of above	Inverter ok Inverter run relay on Run all condensor fans			
909	Interface baud rate (see section 5.3)					
	9. INPUTS AND OUTPUTS					
20	Operating mode	oFF Auto	Manual Automatic			
170	Input states	iP - - iP 1 - iP - 2	No input Input 1 Input 2			
171	Auto/manual (IP-1)	OFF Auto	Manual (pack controller dormant) Auto mode			
159	Input 2 function (from v0.01.4)	0 Lo.Li 1 E.oPt	Low liquid level Enable suction optimiser		0 - 1	Lo.Li
172	Liquid level/Enable optimiser (IP-2)	CLr Lo.Li E.oPt	No input Low liquid level Enable suction optimiser			
175	Low level liquid alarm delay (minutes)					
160	Watchdog output (LN/LD-2)	OFF On	Watchdog fail Watchdog healthy			

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ITEM	**DESCRIPTION**	**CODE**		**CODE MEANING**	**FACTORY DEFAULTS**	**RANGE**	**ITEM 9 VALUE**
10. DISPLAY FUNCTIONS							
179	Pressure display unit choice	1 2 3	PSI bAr PASC	p.s.i. bar kPa		1 - 3	PSI
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					2004 - 2034	
18	Daylight saving enable	Stnd dAY.S		Standard time Daylight saving time		0 - 1	Stnd
12. RESTORE FACTORY DEFAULTS							
966	Virtual bitswitch setting From version 0.01.5 the physical bitswitches have been replaced by virtual bitswitches. Set this item in place of using the bitswitches which are redundant.	0 1		LT HT	0 1		
9	Set default values selected by Bitswitch	1234		Set default values	0 1	LT HT	
	Note: Setting the bitswitches alone has no effect.	1066		Write to NVRAM without delay		where C = CLOSED or ON O = OPEN or OFF x = Don't care For umarked switches C = dot visible O = dot not visible	

ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULTS	RANGE	ITEM 9 VALUE
13. RESTORE PARAMETERS FROM NETWORK (from v0.01.5) 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	
14. SYSTEM ALARMS						
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			
88	Condenser fault	CLr Fn.Ft	No fault Fault			
90	Group alarm 91 - 98	0 1 - 255	No alarms Check 91 - 98			
91	Pressure transducer fault	CLr Pt.Ft	No fault Fault			
92	Temperature sensor	CLr tS.Ft	No fault Fault			
93	Temperature sensor fault	CLr PS.Ft	No fault Fault			
94	Low superheat	CLr Lo.Sh	No fault Fault			
96	Compressor interface card fault	CLr CP.F	No fault Fault			
97	Compressor fault OR Auto input not present	CLr CPr.F	No fault Fault			
98	Compressor inverter fault	CLr InL.F	No fault Fault			
900	Group alarm 901 - 908 (v0.00.8 on)	0 1 - 255	No alarms Check 901 - 908			

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ITEM	**DESCRIPTION**	**CODE**	**CODE MEANING**	**FACTORY DEFAULTS**	**RANGE**	**ITEM 9 VALUE**
901	Compressor 1 fault (v0.00.8 on)	CLr C1.F	No fault Fault			
902	Compressor 2 fault (v0.00.8 on)	CLr C2.F	No fault Fault			
903	Compressor 3 fault (v0.00.8 on)	CLr C3.F	No fault Fault			
904	Compressor 4 fault (v0.00.8 on)	CLr C4.F	No fault Fault			
905	Compressor 5 fault (v0.00.8 on)	CLr C5.F	No fault Fault			
906	Compressor 6 fault (v0.00.8 on)	CLr C6.F	No fault Fault			
910	Group alarm 910 - 918 (v0.00.8 on)	0 1 - 255	No alarms Check 910 - 918			
915	Auto input not present (PLANT FAULT) (v0.00.8 on)	CLr P.FLt	No fault Fault			
916	Low liquid differential pressure (v0.00.8 on)	CLr Lo.L.P	No fault Fault			
15. 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 (from v0.01.0)					
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	Lt Ht	0 (xC) 1 (xO)		
89	Thermistor excitation value (Factory test)		Not used			
99	Test digital displays	CLr SEt	Not active Test active		0 - 1	
100	Test inputs	- - - - 1 - - - - 2 - -	No inputs Input 1 on Input 2 on			
199	Test relay outputs	clr SEt	Not active Active		0 - 1	

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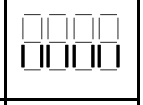
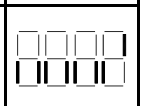
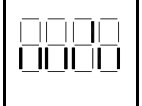
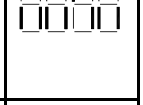
ITEM	**DESCRIPTION**	**CODE**	**CODE MEANING**	**FACTORY DEFAULTS**	**RANGE**	**ITEM 9 VALUE**
10	Processor alarms (11 - 17) (see graphical display of bit data)	0 1 - 255	No alarms Check 11 - 17			
11	Static RAM fault	CLr rA.Ft	No fault Fault			
12	Program/counter fault	CLr PC.Ft	No fault Fault			
13	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	EPIC
NORMAL DISPLAY	
999.9	Pressure in psi
--	Not selected
ALARM TEXT (in descending priority order)	
P.FLd	Plant failed
Hi.dP	High discharge pressure
rEF.L	Refrigerant loss
CPr	Compressor fault
FAn	Condenser fan problem
Hi.SP	High suction pressure
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