

**CONTENTS**

1. Jnet NETWORK IDENTIFICATION .....	2
2. PRESSURES .....	2
2.1 SUCTION PRESSURE .....	2
2.2 DISCHARGE PRESSURE .....	2
3. TEMPERATURES .....	3
4. SUCTION PRESSURE CONTROL .....	3
5. COMPRESSOR CONTROL .....	4
5.1 COMMON DATA .....	4
5.2 COMPRESSOR DATA .....	4
6. DIGITAL SCROLL .....	5
7. DISCHARGE PRESSURE CONTROL .....	6
8. CONDENSER CONTROL .....	7
9. INPUTS AND OUTPUTS .....	7
10. DISPLAY FUNCTIONS .....	8
11. CLOCK CALENDAR .....	8
12. RESTORE FACTORY DEFAULTS .....	8
13. RESTORE PARAMETERS FROM NETWORK .....	9
14. SYSTEM ALARMS .....	9
15. DIAGNOSTIC & TEST FUNCTIONS .....	10
DISPLAY DATA .....	11
GRAPHICAL DISPLAY DATA .....	12

# JTL COMPRESSOR PACK ITEM NUMBERS

# UP120

ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULTS	RANGE	ITEM 9 VALUE
<b>1. Jnet NETWORK IDENTIFICATION</b>						
0	Unit type	uP12	Unit type			
19	Software version number					
1	Unit number (Suction)				0.1 - 899.9	
190	Unit number (Discharge)				0.1 - 899.9	
<b>2. PRESSURES</b>						
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
<b>2.1 SUCTION PRESSURE</b>						
21	Suction pressure					
146	Average suction pressure over 1 hour					
42	High suction pressure alarm level			0 1	10 - 50 25 - 80	20 60
41	Low suction pressure alarm level			0 1	-5 to +15 5 to 40	0 20
121	Pressure transducer selection	OFF S.t.En	Disabled Enabled		0 - 1	St.En
421	Full scale transducer value (at 20mA)				50 - 200	101.5
426	Zero scale transducer value (at 4mA)				-15 - 0	0.0
<b>2.2 DISCHARGE PRESSURE</b>						
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
362	Low discharge pressure alarm delay (mins)				0 - 20	0
122	Discharge pressure transducer selection	OFF d.t.En	Disabled Enabled		0 - 1	Dt.En
422	Full scale transducer value (at 20mA)				300 - 500	362.5
427	Zero scale transducer value (at 4mA)				-15 - 0	0.0

## JTL COMPRESSOR PACK ITEM NUMBERS

## UP120

ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULTS	RANGE	ITEM 9 VALUE
<b>3. TEMPERATURES</b>						
Note: Temperatures can be displayed on the maintenance unit in degrees Celsius or Fahrenheit. The choice is made on item 178.						
178	Temperature display unit choice	CELS FAhr	Celsius Fahrenheit		0 - 1	CELS
897	Site temperature					
898	Site relative humidity					
896	Site absolute humidity					
899	Outside temperature					
<b>4. SUCTION PRESSURE CONTROL</b>						
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 1	0 to + 20 5 to 60	8 35
151	Optimised suction setpoint					
152	Optimised suction setpoint upper limit			0 1	5 - 20 15 - 60	15 55
43	Suction pressure deadband			0 1	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 1	- 8 to +20 2 to 60	0 10
195	Enable low suction pressure safety	OFF LP.En	Disabled Enabled		0 - 1	OFF
196	Low suction pressure safety shutdown level			0 1	-5 to 10 10 to 40	0 20
197	Enable instant high discharge pressure shut down	oFF HP.En	Disabled Enabled		0 - 1	oFF
191	Integrated pressure error					
181	Suction increase next step (kW)					
182	Suction decrease next step (kW)					

# JTL COMPRESSOR PACK ITEM NUMBERS

# UP120

ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULTS	RANGE	ITEM 9 VALUE
<b>5. COMPRESSOR CONTROL</b>						
Forced functions remain forced if the Maintenance Unit remains plugged in. They are automatically cancelled 30 minutes after the Maintenance Unit is unplugged.						
<b>5.1 COMMON DATA</b>						
200	Number of compressors				0 - 3	3
205	Maximum number of compressors allowed				1 - 3	3
201	Number of steps on load					
202	Number of compressors running					
203	Total capacity loaded (in kW)					
204	Forced number of suction stages				0 - 3	
208	Minimum compressor stop time (seconds)				0 - 240	30
206	Compressor fault alarm delay (mins)				0 - 10	1
158	Compressor fault repeat alarm delay time	00:00	feature disabled		00:00-24:00	00:00
<b>5.2 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 210-249 for compressors 1 - 4.						
2x5	Compressor isolation 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 <u>effective</u> kW				1 - 100	10
2x0	Compressor loading method	Compressors 1				
		0 1 2	none 1.StP d.Scr	not controlled 1 step digital scroll		0 - 2 d.Scr
		Compressor 2-4				
		0 1	none 1.StP	not controlled 1 step		0 - 1 1.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 - 1	
2x2	Total running hours (in 10s of hours)				0 - 9999	
37x	Compressor run time last 24 hours (371 for compressor 1 etc)					
2x4	Compressor restart inhibit timer (Seconds)					

## JTL COMPRESSOR PACK ITEM NUMBERS

## UP120

ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULTS	RANGE	ITEM 9 VALUE
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)					
<b>6. DIGITAL SCROLL DATA</b>						
330	Select digital scroll	OFF d.Scr	Not selected Selected		0 - 1	0
151	Optimised suction setpoint (operational)					
153	Optimised suction setpoint					
347	Suction pressure error					
344	Digital scroll capacity loaded in effective kW					
341	Minimum cut out pressure				- 8 to +40	0
64	Digital scroll restart pressure			0 1	0 to +20 5 to 60	8 35
340	Time constant				1 - 240	30
339	Gain				1-250	100
345	Current proportional term (P)					
346	Current Integral term (I)					
331	Number of steps on load					
343	Minimum output allowed (%)				1 - 50	10
342	Maximum output allowed (%)				50 - 100	100
335	Compressor capacity in effective kW (settable on item 216)					
332	Pulse width modulation period (Secs)				10 - 20	20
337	Forced no. of steps				0 - 100	
338	Force inverter off	CP.En C.OFF	Enabled to run Inverter forced off		0 - 1	

# JTL COMPRESSOR PACK ITEM NUMBERS

# UP120

ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULTS	RANGE	ITEM 9 VALUE
<b>7. DISCHARGE PRESSURE CONTROL</b> 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. Note temperatures can be displayed on the Maintenance Unit in Celsius or Fahrenheit. The choice is made on item 178.						
178	Temperature display unit choice	0 1	CELS FAhr	Celsius Fahrenheit		0 - 1 CELS
394	Condenser Control enable	oFF C.C.on				0 - 1 C.C.on
50	Discharge pressure set point					100 - 250 150
350	Maximum discharge pressure set point					175 - 380 200
370	Optimised discharge pressure set point					
899	Outside temperature					
363	Floating discharge temperature differential	0.0		Function disabled		0 - 15 0.0
364	Effective discharge temperature setpoint					
365	Condenser operating temperature (glide midpoint)					
395	Analogue fan speed gain					0 - 100 10
54	Condenser control time constant	0		Disables integral term		0 - 250 30
55	Discharge pressure to reduce capacity					140 - 400 300
192	Integral term (I)					
194	Proportional term (P)					
157	Refrigerant type	3 4 5 6 7 11 13 14 15	404A 407A 470b 507 408 407F 407C 448A 449A	R404A R407A R407B R507 R408A R407F R407C R448A R449A		3 - 15 R448A
155	Refrigerant boiling point (dew)					
156	Refrigerant boiling point (bubble)					

# JTL COMPRESSOR PACK ITEM NUMBERS

# UP120

ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULTS	RANGE	ITEM 9 VALUE
<b>8. CONDENSER FAN DATA</b>						
Forced functions remain forced if the Maintenance Unit remains plugged in. They are automatically cancelled 30 minutes after the Maintenance Unit is unplugged.						
391	Number of condenser steps running					
359	Maximum fan speed (%)				50 - 100	100
368	Maximum speed at night (%)				50 - 100	100
369	Select network timer for night time operation	0 1 - 8	Disabled Timer number		0 - 8	8
358	Minimum fan speed (%)				0 - 25	0
357	Discharge pressure cut out (depends on item 358 being >0)				100 - 200	116.0
397	Number of condenser steps in backup analogue mode				0.1 - 100	100
392	Forced number of condenser steps				0.0 - 100.0	
393	Input status	0 FAn	Fan not ok Fan ok			
<b>9. INPUTS AND OUTPUTS</b>						
20	Operating mode	oFF Auto	Manual Automatic			
170	Inputs	Graphical	See display data			
171	Auto/manual (DI1)	OFF Auto	Manual (pack controller dormant) Auto mode			
213	Compressor 1 input (DI2)	oFF rdy	Fault Ready to run			
223	Compressor 2 input (DI3)	oFF rdy	Fault Ready to run			
233	Compressor 3 input (DI4)	oFF rdy	Fault Ready to run			
243	Compressor 4 input (DI5)	oFF rdy	Fault Ready to run			
172	Plant healthy (DI6)	PL.Ft P.Hty	Fault Plant ok			
173	Condenser input (DI7)	Fn.Ft F.Hty	Fault Condenser ok			
174	Low refrigerant (DI8)	CLr Lo.Li	Normal Low Level			
175	Low level refrigerant alarm delay minutes				15 - 240	30
160	Outputs	Graphical	See display data			
161	General alarm (LN1/DQ1)	clr Gn.AL	No Alarm Alarm			
162	PWM output (LN2/DQ2)	unLd LoAd	Unload compressor 1 Load compressor 1			

JTL COMPRESSOR PACK ITEM NUMBERS						UP120	
ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULTS	RANGE	ITEM 9 VALUE	
163	Compressor 1 output (LN3/DQ3)	Off run.1	Off Run compressor 1				
164	Compressor 2 output (LN4/DQ4)	Off run.2	Off Run compressor 2				
165	Compressor 3 output (LN5/DQ5)	Off run.3	Off Run compressor 3				
166	Compressor 4 output (LN6/DQ6)	Off run.4	Off Run compressor 4				
<b>10. DISPLAY FUNCTIONS</b>							
179	Pressure display unit choice	1 2 3	PSI Bar KPa	p.s.i bar kPa		1 - 3	PSI
188	Enable 2 <sup>nd</sup> display	oFF 2.dPy	Disabled Enabled			0 - 1	oFF
189	Backlight control	0 1 2 3	B.oFF BL.on BL.FF BL.n.F	Backlight off Backlight on Backlight off, flashes for alarm Backlight on, flashes for alarm		0 - 3	B.oFF
<b>11. CLOCK CALENDAR</b>							
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	Stnd dAY.S	Standard time Daylight saving time			0 - 1	Stnd
<b>12. RESTORE FACTORY DEFAULTS</b>							
966	Virtual bitswitch setting	0 1	LT HT	0 1			
9	Set default values selected by Bitswitch  Note: Setting the virtual bitswitches alone has no effect.	1234	Set default values	0 1	LT HT		
		1066	Write to NVRAM without delay				



## JTL COMPRESSOR PACK ITEM NUMBERS

## UP120

ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULTS	RANGE	ITEM 9 VALUE
<b>13. RESTORE PARAMETERS FROM NETWORK</b>						
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	
<b>14. SYSTEM ALARMS</b>						
80	Group alarm 81 - 88	Graphical	See display data			
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 fan 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			
97	Compressor fault	CLr CPr.F	No fault Fault			
900	Group alarm 901 - 908	Graphical	See display data			
901	Compressor 1 fault	CLr C1.F	No fault Fault			
902	Compressor 2 fault	CLr C2.F	No fault Fault			
903	Compressor 3 fault	CLr C3.F	No fault Fault			
904	Compressor 4 fault	CLr C4.F	No fault Fault			
910	Group alarm 910 - 918	Graphical	See display data			

## JTL COMPRESSOR PACK ITEM NUMBERS





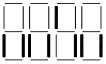



## UP120

ITEM	DESCRIPTION	CODE	CODE MEANING	FACTORY DEFAULTS	RANGE	ITEM 9 VALUE
915	Plant fault	CLr P.Flt	No fault Fault			
<b>15. DIAGNOSTIC &amp; TEST FUNCTIONS</b>						
6	JTL Network communications speed	4.8	Kilo Baud			
7	Communications method	HALF	2 wire			
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 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)			
8	Virtual Bitswitch Setting	0 1	Lt Ht	0 1		
99	Test digital display	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					
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			

<b>DISPLAY DATA</b>		<b>UP120</b>
<b>NORMAL DISPLAY</b>		
999.9	Pressure in psi	
--	Not selected	
<b>ALARM TEXT (in descending priority order)</b>		
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	
<b>OTHER TEXT</b>		
+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	