

**Electrical Installation Requirements**

Care should be taken to separate the power and signal cables to prevent electrical interference and possible damage due to inadvertent connection.

**CE Conformance**

This unit conforms with the relevant EU standards when installed according to the JTL Installation Requirements for this product

**Use of Maintenance Unit**

The controller can be checked and the operation adjusted using a JTL portable maintenance unit which plugs into the controller. Each item of information has an item number. The more important items are listed in the tables overleaf.

Examples:

To read item 20 press: **ITEM** **2** **0** **ENTER**

To set item 40 to - 4.0 press:

**ITEM** **4** **0** **ENTER** **SET** **-** **0** **4** **0** **ENTER**

To correct errors press: **CANCEL**

To select next or previous items press: **+** and **-**

**Initial Commissioning and Bitswitch Settings**

The controller has 1 set of data built in to its program for use during commissioning. Set item 9 to 1234. This loads into the controller a suitable set of data for initial commissioning. Adjustments should then be made as necessary.

For communications on the JTL network set the unit number on item 1.

**LU110 Function**

The LU110 is a network product which receives broadcast data on the JTL IP network and calculates the interstage pressure setpoint and vessel pressure setpoint for an LT only transcritical plant for Arctic Circle.

**Interstage Pressure Optimisation**

The LU110 receives IP broadcast data for

- 1) LT suction pressure (item 21)
- 2) Discharge pressure (item 22)
- 3) Interstage pressure (item 23)
- 4) Interstage temperature (item 33)

Using formula the LU110 computes a pressure setpoint for the interstage compressors. This data is broadcast on the JTL IP network.

The formula uses the discharge and suction pressures to compute the setpoint within a settable range.

The calculated setpoint is modified by low interstage superheat using a minimum superheat setpoint and deadband with an integral gain to adjust the modified setpoint.

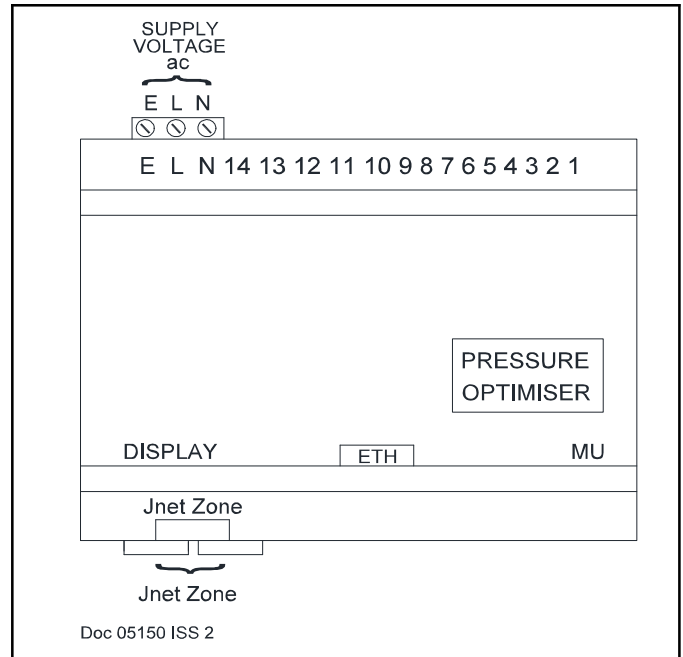
**Vessel Pressure**

The LU110 receives broadcast data for

- 1) Liquid pressure (item 24)
- 2) Compressor capacity loaded (item 204)

Using a formula the LU110 computes a pressure setpoint for the liquid. This data is broadcast on the JTL IP network.

The formula uses the liquid pressure and whether the compressors are running to calculate the liquid pressure required. The pressure can be set to one of the two pressures depending on the current candidates. The rate of change from the high to low pressure setpoint can be adjusted.



**IP Broadcast data control**

The data is transmitted and received by IP. The data is selected by setting the IP data set to non zero value. The data set must match at both the transmitting and receiving fixture.

Care should be taken to ensure that there are no duplicate data sets specified on the JTL network.

ADJUSTABLE PARAMETERS				LU110
	Item	Function	Range	Units
Interstage Pressure	40	Minimum pressure		bar
	152	Maximum pressure		bar
	144	Minimum superheat	0-10	k
	145	Superheat deadband	0-5	k
	146	Superheat integral gain	0-9.99	
Vessel Pressure	5023	Minimum pressure		bar
	5024	Maximum pressure		bar
	5029	Rate of change of setpoint		psi/sec
Broadcast data set Numbers	70	Legacy LT suction pressure	0-disabled 1-enabled	
	71	LT suction pressure	0 - 9999	
	72	Discharge pressure	0 - 9999	
	73	Interstage pressure	0 - 9999	
	74	Liquid pressure	0 - 9999	
	75	Capacity loaded	0 - 9999	
	76	Interstage temperature	0 - 9999	
	77	Liquid pressure setpoint	0 - 9999	
78	Interstage pressure	0 - 9999		
MU	9393	Display units - pressure	1 - psi, 2 - bar, 3- kPa, 4-barA	
	9392	Display units - temperature	0=Celsius 1=Fahrenheit	
Jnet Functions	1	Unit number	0.1 - 899.7	
	18	Daylight saving operation	0= standard time, 1 daylight saving time	

OTHER USEFUL ITEMS					
Item	Function	Item	Function	Item	Function
20	<b>OPTIMISING</b> Operation Mode	24	<b>LIQUID PRESSURE</b> Liquid pressure		
	<b>INTERSTAGE PRESSURE</b>	204	Capacity loaded		
21	LT suction pressure	5025	Liquid pressure setpoint		
22	Discharge pressure	5030	Forced liquid pressure		
23	Interstage pressure	5074	Liquid pressure received from		
33	Interstage temperature	5075	Capacity loaded received from		
143	Interstage superheat				
151	Interstage pressure setpoint				
161	Forced interstage pressure				
5070	Legacy LT suction pressure received from				
5071	LT suction pressure received from				
5072	Discharge pressure received from				
5073	Interstage pressure received from				
5076	Interstage temperature received from				

**Applicable Documentation**

Item Numbers      Firmware Variations      Connections Diagram  
 Doc No. 05142      Doc No. 05143      Doc No. 05145

**Supply Requirements**

230 V ac 48-62 Hz Supply 6 VA maximum inputs  
 2 mA maximum

24 Vac (optional)

Installation Information  
 Doc No.

**Note:** The information contained in this document applies to the current version of the unit supplied with it. Full operating manuals, item number and software variation information can be obtained from the supplier JTL Systems.



This unit conforms with the relevant EU standards when fitted in accordance with its installation instructions.