Application Note for Using the Operator Station HE500TIU050 / 10X / 11X / 20X / 3XX with the Eurotherm 605 / 620 Series Inverter)

1.0. Protocol File Name

The 605 Series and the 620 Series Inverters have different protocol files which may be identified as follows :-

605 Series
HE500TIU050 = Eurot605_R?.0xx
HE500TIU1xx = Eurot605_R?.1xx
HE500TIU2xx = Eurot605_R?.2xx
(The "?" = the TIU firmware revision)

620 Series
HE500TIU050 = Eurot620_R?.0xx
HE500TIU1xx = Eurot620_R?.1xx
HE500TIU2xx = Eurot620_R?.2xx
(The "?" = the TIU firmware revision)

2.0. Configuring the Operator Station

To verify the Automated Equipment type the Operator Station is setup for, watch the screen of the Operator Station on power up. The first screen message details the setup of the Operator Station. To configure the Operator Station for particular Automated Equipment, select the Automated Equipment in the Communication Settings from the Configure menu in *CBREEZE* software. Select the appropriate Manufacturer and the appropriate Remote Equipment Model. Then from the File menu select Update Protocol, the appropriate file name will appear in the file name field. The programmer may need to point to the correct folder name/location. If further information is required see the manual or *CBREEZE* help on update/change protocol.

3.0. Protocol Revisions

Version 1.00 Supports master only operation to the slave Inverter using the EI Bisync ASCII.

4.0. Serial Port Configuration

The link settings of 19200 baud, seven data bits and even parity with no handshaking and RS232 Communications are default in the terminal.

Communications is via the P3 port located on the front of the inverter.

Note: Before EI Bisync ASCII can be used on the P3 port the P3 Mode must be set to ASCII. This is only applicable to the 620 Series.

5.0. Node Number

Each inverter has a unique ID or node address. Each ID is split into two parts the Group ID and the Unit ID.
Inverter Group and Unit IDs are required even with a one to one RS232 link.
These can be set using the Eurotherm Operator Station Group ID 0 – 9 (Default 0) and Unit ID 0 – 15 (Default 0).

These are entered in *CBREEZE* in the Remote Node ID as GUU e.g Group 1, Unit 3 would be 103.

Note: A drive will always reply to a request from Group 0 Unit 0, so this address should not be used on a multi drop network.

6.0. Parameter Specification

Parameters are addressed using their Tag No.
See Eurotherm 605 series manual section 10 or Eurotherm 620 Series Appendix C for details.
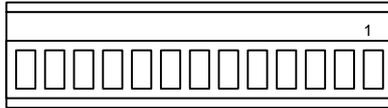
Parameters fall into several data types. These are INT, BOOL, ENUM, STRING, TAG, D_TAG, S_TAG, and WORD. The Operator Station can read all of these with the exception of STRING type.

Note some parameters are read only.

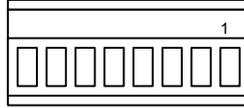For word types (%R, %AI, %AQ, %G) the start address can be any valid register id.

7.0. Connection details to Eurotherm 605 and 620 Series Inverters
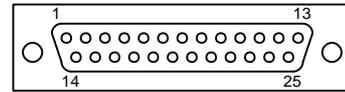
13-Pin Screw Terminal Block	8-Pin Screw Terminal	25-Pin D-Type Male
TIU100, TIU110	TIU050, 101, 102, 103, 111, 112, 113, 201, 202, 203	TIU300, 301, 302, 303, 304, 310, 311, 312, 313, 314, 320, 321, 322, 323, 324

RS232 Connection

TIU Type Signal Name	13-Pin	8-Pin	25-Pin
+5V	1		
TX 485/422+	2	1	12
TX 485/422-	3	2	13
RX 485/422+	4	3	24
RX 485/422-	5	4	25
TX RS232	6	5	2
Signal GND	7	6	7
RX RS232	8	7	3
Frame Gnd	13	8	1
RTS RS232	-	-	4
CTS RS232	-	-	5
RTS 485/422+	-	-	14
RTS 485/422-	-	-	17
CTS 485/422-	-	-	18
CTS 485/422+	-	-	19

Twisted Shielded Pair

Eurotherm
605 /620
P3 Port
RJ11

0V	1
+5V	2
TX	3
RX	4
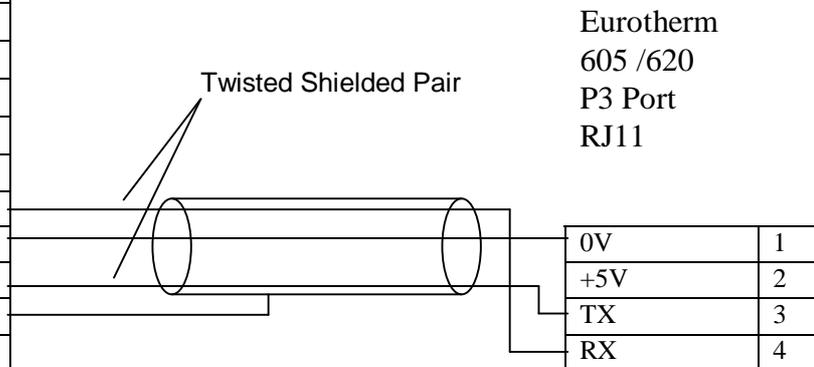
Do not connect to unlisted pins.

Recommended cable : Beldon 9503, twisted multipair, screened.
Connect the screens together at the shield / Earth pin of the PLC