How to install the

(Rev. 0520) Walter L. Giesler 27.7.2005

ELZET 80

ETH-BIT

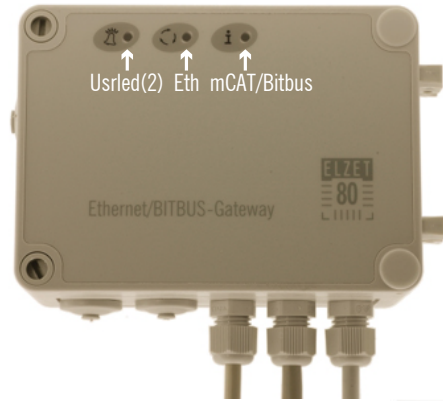## Ethernet/BITBUS-Gateway

Usrled(2) Eth mCAT/Bitbus

Ethernet/BITBUS-Gateway

Technical data:

Power requirements:

PoE supply: 44..57V @240mA (standard is 350mA)
(includes 24V@200mA supply for external loads)

24V local: 24V +/15% @150mA, fused 10A max.

Relay output loads:

Changeover relays: 6A @ 28VDC or 48VAC

Make relays: 3A @ 30VDC or 48VAC

Isolation within ETH-BIT does not allow usage at 230VAC!

Ambient temperature 0..+50°C

The i/o base board in ETH-BIT comes either as "2SER" with connectors for Ethernet and the serial lines only or as "4I4R" with additional 24V digital i/o (4 relays, 4 isolated inputs). Both use the same pcb but the terminals shown dimmed above are not part of 2SER.
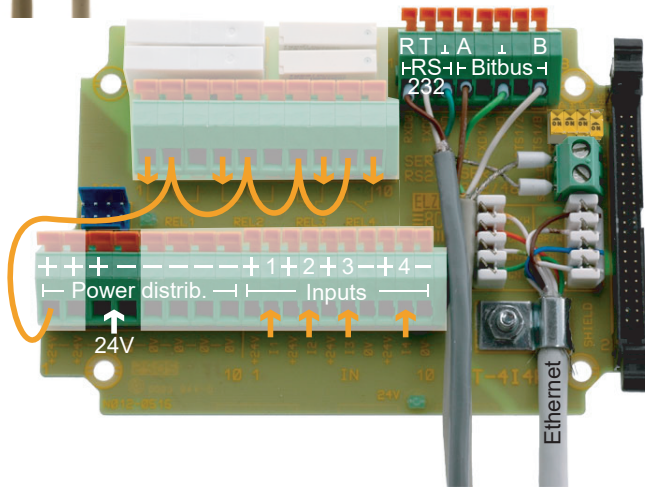

BITBUS Termination
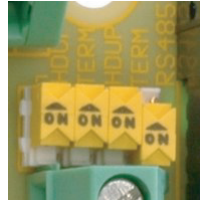
The gateway comes pre-configured for BITBUS and the switches are set for the required half-duplex RS485 (both HDUP switches "on") and active termination (one only of the TERM switches "on") assuming that

ETH-BIT will usually be placed at one end of the BITBUS network cable. **Switching off the termination does not remove the additional BITBUS "known state" termination** (D10, R11, R12) soldered to the bottom side of the board. If you require ETH-BIT for use in an already terminated bus, please order an unterminated version.

Do not switch on the second TERM switch as this is only provided for full duplex operation. Having both TERM switches on would halve the termination resistance.

No other hardware settings are to be made.
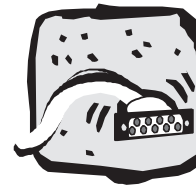
Power and I/O

All terminals named 24V are interconnected as all terminals named 0V are.

In the 2SER version, only one each terminal are provided.

In the **PoE** (Ethernet-powered) version these terminals supply 24V at 200mA for their relays and external user devices. A foldback regulator limits the available current. If you need more power (only for 4i4R), then you might feed external power into the same pins. Please note that excessive voltages fed into this port (>28V) might destroy the PoE power supply.

In the **standard**, externally powered version, please apply 24V DC +/-15% to any of the terminals marked 24V and 0V. On 4i4R the 24V and 0V will then be available for convenient wiring on multiple power distribution terminals and around the inputs. 24V is not taken to the relays as they might be used with other voltages. Hence, to use the relays with 24V a wiring like the one overlaying the photo has to be applied. The arrows mark the outputs for a make action while the open terminals are break action outputs that carry the center voltage in the idle state.

Ethernet

Using a conventional LSA tool, connect the Rx and Tx pairs (or and gn) to the terminals marked accordingly. The terminals on the right side are used only if PoE injectors use the spare lines instead of the more typical data lines - or to insert a PoE voltage (44..57V) from a local supply: BL/BLWS for +48V and BR/BRWS for 0V.

BITBUS

Of the upper right terminal block the five rightmost terminals are dedicated to RS485. For the halfduplex BITBUS, only A and B terminals are required, usually connected to pins 8 and 3 respectively of the typical 9 pin sub-D. The ground terminal in the center would go to pin 5 usually. Connect the cable shield to one of the screw terminals on the right. Having a coming and a going BITBUS line, the Y and Z terminals can be used as a convenient alternative to A and B while the two ground wires would have to go into a common terminal.

RS232

The three terminals left of BITBUS are the RS232 ports connected to SER0 of the processor. RxD goes to the TxD pin of your host (3 on a 9 pin sub-D), TxD to RxD (2) and GND to ground (5). Without any software changes, they connect to the SYSMON monitor program.

Software Setup

To get connected to the gateway, it needs to get its IP address programmed. To do this, connect a terminal program (like Hyperterm) with 19200 bit/s, 8N1 ANSI to the SER0 RS232 port. On power up of ETH-BIT it will come up with mCAT's SYSMON start messages. At the prompt, enter IPSET IP "xxx.xxx.xxx.xxx" with xxx replaced by the decimal IP address representation.

BITBUS is set to master (node 255 or FFh) and 375kBit/s by default. This corresponds to a code of 1ffh in the configuration eeprom's address 2. To set it to 62.5kBit and master, use the monitor command:

`eewrite 2 0ff`   Other settings are explained in the readme-bapitcp-node-cfg.htm file that comes with the BAPI/TCP software.

On the PC side, please install BAPI/TCP and follow the directions of the documenation that comes with this product.

If you want to program on ETH-BIT, for instance to scan BITBUS slaves automatically and present data in the web server, you should buy and install the mCAT developers CD. Information about memory usage on ETH-BIT can be found in chapter XIV-2.2.1 of the manual. To use the RS232 serial line for a local peripheral, please refer to chapter VIII-4.2 to negotiate this with SYSMON.