TCU6

TraxBus CONTROLLER

TCU6 provides all the advantages of TraxBus™ fieldbus management, without the need for a PLC and therefore without programming.
SIX burners or zone of burners can be simply controlled with an electrical interface:

- input from THERMOSTAT contact
  start / stop the burner(s)
- output contact BURNER ON
  if at least one burner within a zone is running

For all burners connected:

- input from UNLOCK button
  reset all the burners in lockout
- output contact LOCKOUT
  if at least one of linked burners is in lockout

TCU6 is an expansion unit to be used together with TraxInterface[4], connected to Service Port.

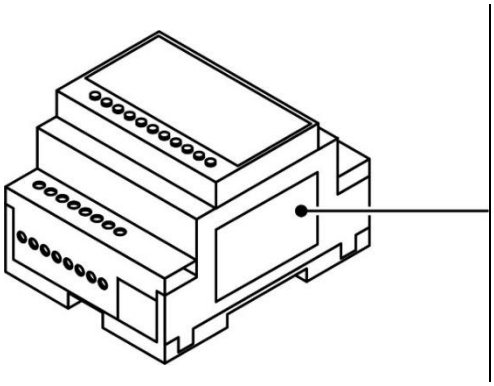
CE

SAFETY INFORMATION

Read and understand this manual before installing, operating, or servicing this unit. This unit must be installed according to this manual and local regulations. The drawings may show units without covers or safety shields to illustrate details. Disconnect power supply and follow all usual safety precautions before carrying out any operation on the device. Be sure to reinstall covers or shields before operating any devices.
The device is not user serviceable, a faulty device must be put out of order and sent back for servicing.

CONTRIVE manufactures products used as components in a wide variety of industrial systems and equipment. The selection and application of products remain the responsibility of the equipment manufacturer or end user.
CONTRIVE accepts no responsibility for the way its products are incorporated into the final system design. All systems or equipment designed to incorporate a product manufactured by CONTRIVE must be supplied to the end user with appropriate warnings and instructions as to the safe use and operation of that part.
Any warnings provided by CONTRIVE must be promptly provided to the end user.

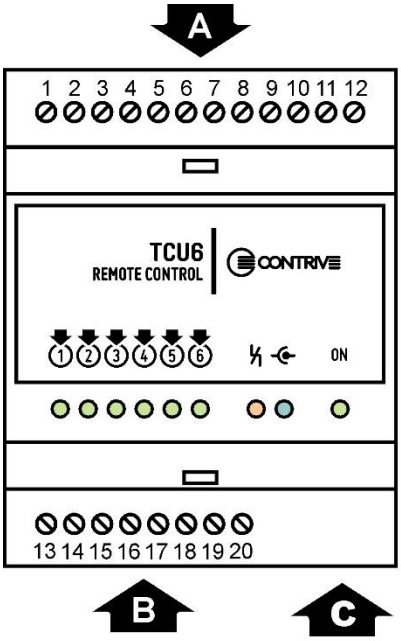
CONTRIVE guarantees for two years from the date of manufacture of its product to replace, or, at its option, to repair any product or part thereof (except fuses and with some limitations for tubes and photocells) which is found defective in material or workmanship or which otherwise fails to conform to the description of its sales order. CONTRIVE makes no warranty of merchantability or any other warranty express or implied. CONTRIVE assumes no liability for any personal injury, property damage, losses, or claims arising from misapplication of its products.

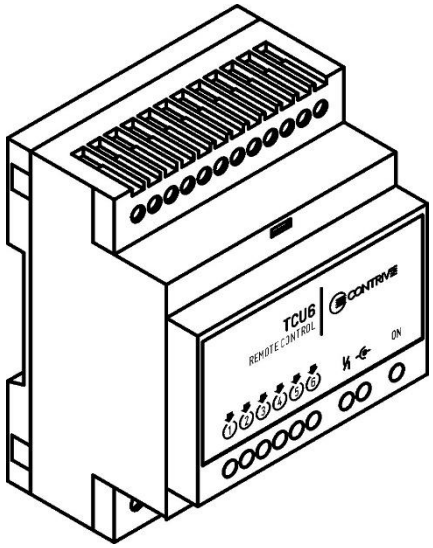


RECEIVING

Please perform the following tasks after receiving the TCU6:

- Inspect the unit for damage. If the unit appears damaged upon receipt, contact the shipper immediately.
- Verify receipt of the correct unit by checking the label on the right side of the unit.
- If you have received the wrong model or the device does not function properly, contact your supplier.





OUTPUT AND POWER SUPPLY TERMINALS	**A**
INPUT TERMINALS	**B**
RJ45 CONNECTOR TO TraxInterface[4]	**C**

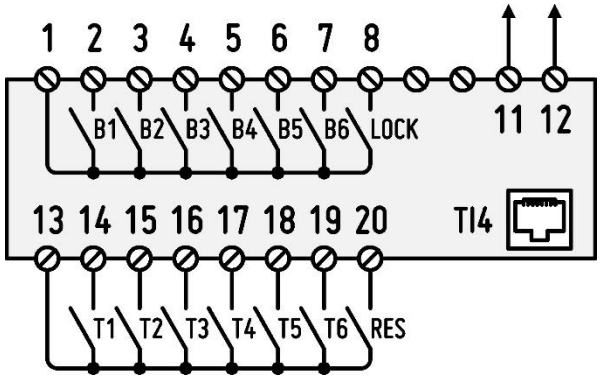
ON POWER INDICATOR GREEN

LINK INDICATOR BLUE
- ON|OFF → NOT WORKING
- BLINK → LINKED TO TraxInterface[4]

LOCKOUT / RESET INDICATOR
- GREEN → RESET OFF — NO LOCKOUT
- YELLOW → RESET ON — LOCKOUT
- RED → RESET OFF — LOCKOUT

ZONE 1…8 STATUS INDICATOR
- GREEN → THERMOSTAT ON — BURNER(S) OFF
- YELLOW → THERMOSTAT ON — BURNER(S) ON
- RED → THERMOSTAT OFF — BURNER(S) ON

WIRING DIAGRAM



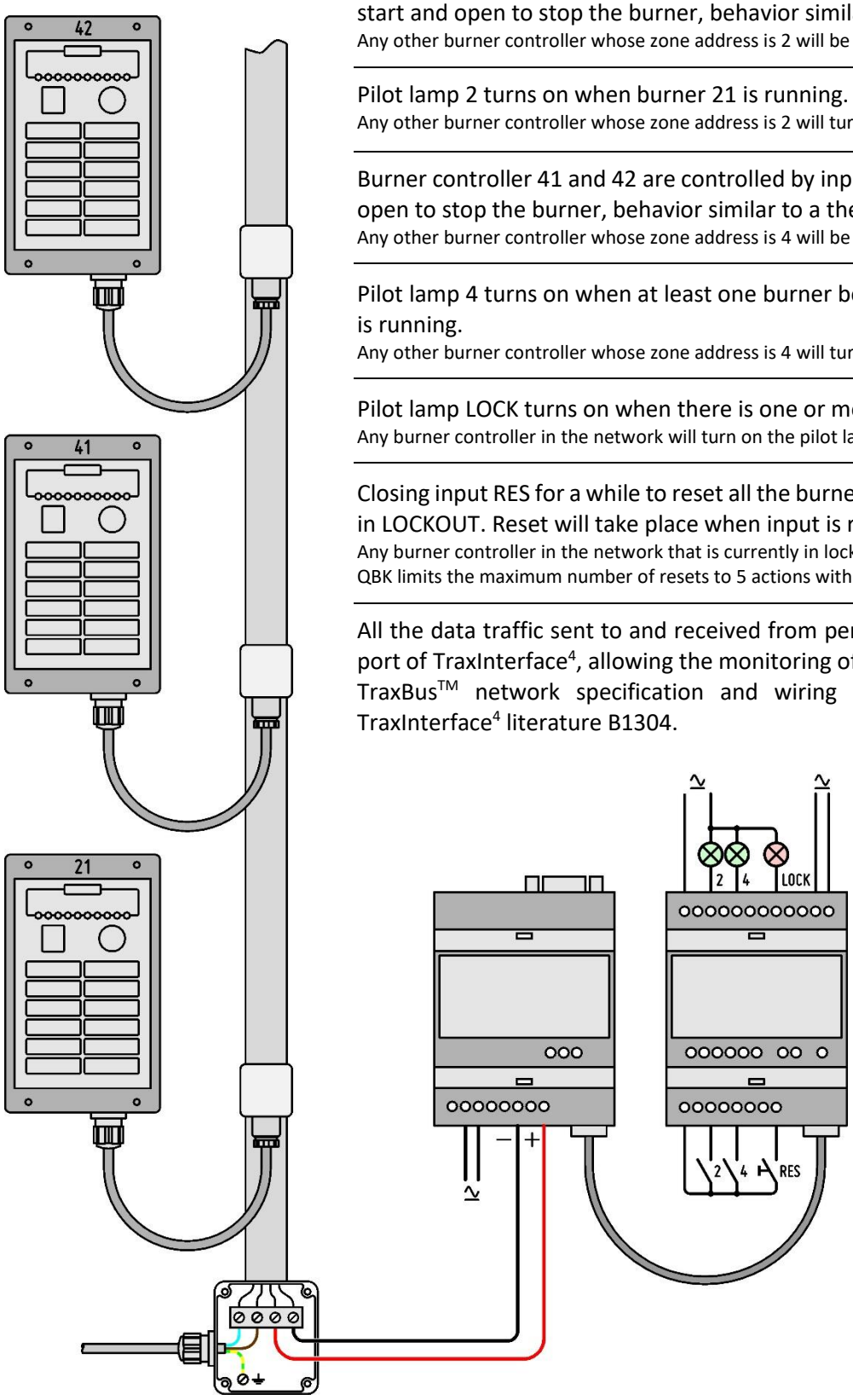
TI4	RJ45 LINK TO TraxInterface[4] SERVICE PORT

MAX LENGTH 30 cm - SHIELDED CABLE ONLY

1	OUTPUTS COMMON	
2	ZONE 1 ON	AT LEAST ONE BURNER RUNNING
3	ZONE 2 ON	AT LEAST ONE BURNER RUNNING
4	ZONE 3 ON	AT LEAST ONE BURNER RUNNING
5	ZONE 4 ON	AT LEAST ONE BURNER RUNNING
6	ZONE 5 ON	AT LEAST ONE BURNER RUNNING
7	ZONE 6 ON	AT LEAST ONE BURNER RUNNING
8	LOCKOUT	AT LEAST ONE BURNER LOCKOUT
11	POWER SUPPLY	AC/DC POLARITY INDEPENDENT
12	POWER SUPPLY	AC/DC POLARITY INDEPENDENT
13	INPUTS COMMON	
14	THERMOSTAT ZONE 1	RUN/HALT BURNERS
15	THERMOSTAT ZONE 2	RUN/HALT BURNERS
16	THERMOSTAT ZONE 3	RUN/HALT BURNERS
17	THERMOSTAT ZONE 4	RUN/HALT BURNERS
18	THERMOSTAT ZONE 5	RUN/HALT BURNERS
19	THERMOSTAT ZONE 6	RUN/HALT BURNERS
20	UNLOCK	RESET ANY LOCKED BURNER

2 ZONE CONTROL EXAMPLE

Link the TCU6 to TraxInterface[4] by means of RJ45 cord. Provide power supply to TraxInterface[4] and TCU6.
Configure TraxInterface[4] and change the communication speed or keep the default value of 4800 baud.
This application manages 3 burner controllers: one unit only is belonging to zone 2 and two units belonging to zone 4.
It is possible to have up to 250 units assigned to up to 6 zones.
Set the address of remote units, assigning at least the zone identifier (the unit identifier could be different or the same for all units belonging to a zone).



Burner controller having address 21 is controlled by input contact 2: close to start and open to stop the burner, behavior similar to a thermostat.
Any other burner controller whose zone address is 2 will be controlled.

Pilot lamp 2 turns on when burner 21 is running.
Any other burner controller whose zone address is 2 will turn on the pilot lamp, if running.

Burner controller 41 and 42 are controlled by input contact 4: close to start and open to stop the burner, behavior similar to a thermostat.
Any other burner controller whose zone address is 4 will be controlled.

Pilot lamp 4 turns on when at least one burner belonging to zone 4 (41 and 42) is running.
Any other burner controller whose zone address is 4 will turn on the pilot lamp, if running.

Pilot lamp LOCK turns on when there is one or more burners in LOCKOUT.
Any burner controller in the network will turn on the pilot lamp, if in lockout.

Closing input RES for a while to reset all the burner controllers that are currently in LOCKOUT. Reset will take place when input is released.
Any burner controller in the network that is currently in lockout will restart.
QBK limits the maximum number of resets to 5 actions within a span of 15 minutes.

All the data traffic sent to and received from peripheral is echoed to the main port of TraxInterface[4], allowing the monitoring of bus activity.
TraxBus™ network specification and wiring information available within TraxInterface[4] literature B1304.

TECHNICAL DATA

POWER SUPPLY

VOLTAGE	15…26 VAC / 18…36 VDC
FREQUENCY	0 … 200 Hz
POWER CONSUMPTION	2 W MAX
ISOLATION	1000 V DC / 1 sec
TERMINALS	2 x 2,5 mm^2 (AWG14)

AN EXTERNAL FUSE CAPABLE OF DISCONNECTING CIRCUIT IN THE EVENT OF SHORT CIRCUIT OR OVER-CURRENT CONDITION SHOULD BE PROVIDED

ENVIRONMENT

OPERATING TEMPERATURE	-20 … 60 °C
STORAGE TEMPERATURE	-40 … 85 °C
ENCLOSURE	POLYCARBONATE UL94-V0
PROTECTION CLASS	IP20
RELATIVE HUMIDITY	30 … 90% NON CONDENSING
DIMENSIONS (W x H x D)	71 x 90 x 58 mm
MOUNTING POSITION	ANY

LINK PORT

TYPE	SYNCHRONOUS HALF DUPLEX
CONNECTOR	RJ45 MODULAR JACK

INPUTS

VOLTAGE	5 VDC
CURRENT	5 mA MAX
TERMINALS	8 x 2,5 mm^2 (AWG14)

MAXIMUM PERMISSIBLE CONNECTION LENGTH FOR INPUT LINES AND BETWEEN DEVICE AND LOW VOLTAGE SUPPLY SOURCE IS 3m

OUTPUTS

NOMINAL VOLTAGE	250 VAC
NOMINAL CURRENT	3 A
BREAKING VOLTAGE	277 VAC
BREAKING CAPACITY	750 VA MAX
MINIMUM CONTACT LOAD	1 mA @ 5 VDC
INSULATION (IEC60664)	277VAC POLLUTION DEGREE 2 CATEGORY AS BASIC INSULATION III CATEGORY AS REINFORCED INSULATION II
SURGE VOLTAGE COIL-CONTACTS	5000 VRMS
DIELECTRIC STRENGHT	3000 VRMS COIL-CONTACT 750 VRMS OPEN CONTACT
TERMINALS	8 x 2,5 mm^2 (AWG14

TO PREVENT RELAY CONTACTS FROM DAMAGING, A PROTECTION SHOULD BE PROVIDED (FUSE OR SIMILAR), ACCORDING TO RELAY BREAKING CAPACITY

CONTRIVE S.r.l. I-24040 SUISIO (Bergamo) via Enrico Fermi 18