



REGULATEURS EUROPA

Member of the
Heinzmann Group

Instruction Manual



ICENI/TB-02

Terminal Block Module (Type 2)

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1 FOREWORD

These instructions have been compiled to assist personnel responsible for the operation and maintenance of equipment manufactured by Regulateurs Europa Ltd.

Care has been taken to ensure that the equipment has been accurately represented, but it should be appreciated that, with the continued progress of design and the diversity of application, certain items may differ in detail.

It should be noted that these instructions are issued for general information and do not constitute a specification of the equipment.

Whilst reserving the right to make any alteration in design which they may consider advisable the manufacturers absolve themselves from making any such alteration retrospective.

In addition to the information given herein, practical advice and assistance is always available from the Customer Support Department at Regulateurs Europa Ltd.

2 GENERAL USE

Before carrying out any repairs, adjustments or maintenance to any equipment supplied by Regulateurs Europa Ltd, it is essential the following safety precautions be observed.

2.1 General

The operator should take care to make themselves thoroughly familiar with the operating principles, methods of adjustment and the dismantling and assembly procedures (where applicable) concerning the equipment in use.

2.2 Product Condition

Before power-up ensure that the product is in a good condition and not damaged, paying particular attention to the ICENIbus connectors on each side of the module and the field wiring connectors at the top of the module. Ensure that any wires are fitted securely into terminals.

2.3 Signal Connection

If the module requires configuration then ensure that any critical signals are disconnected from the module until configuration of the module has been performed. This will prevent unwanted or unexpected changes in signal polarity from affecting other circuitry.

2.4 Module Damage / Repair

The IcenI modules are not repairable. Where damage is found that could compromise the operation of the module, a replacement part should be sourced from Regulateurs Europa Ltd.

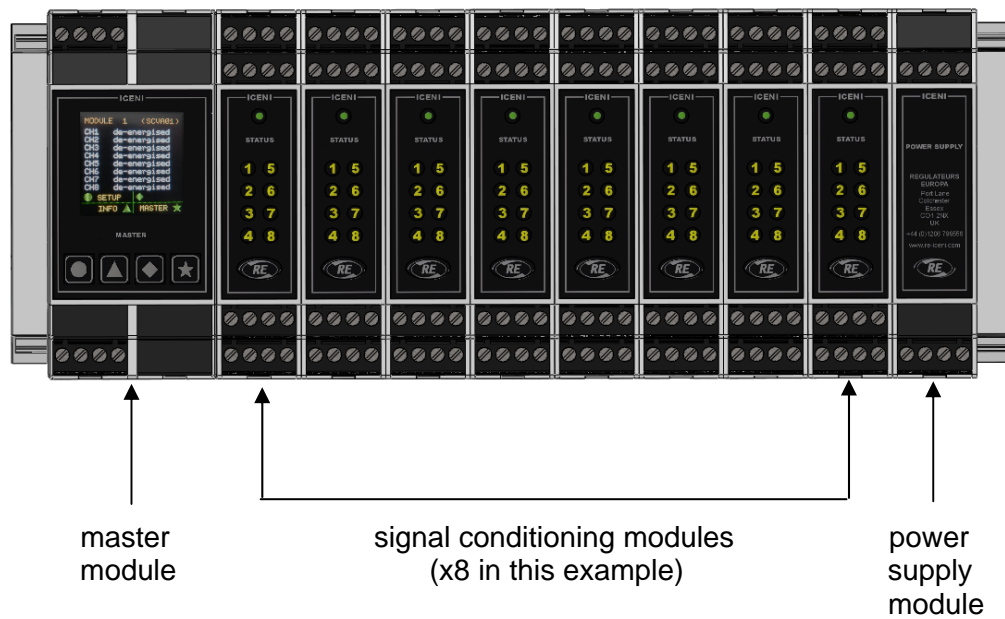
IcenI module should be disposed via an approved disposal scheme suited to electronic products and in accordance with local legislation.

3 PRODUCT OVERVIEW

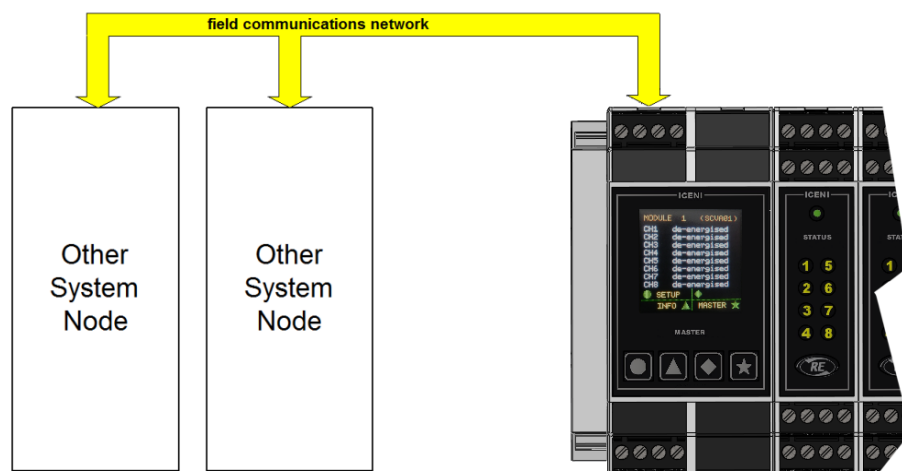
3.1 Icen Node

An Icen node comprises of a master module, between one and sixteen signal conditioning modules and at least one power supply module.

A typical Icen node:

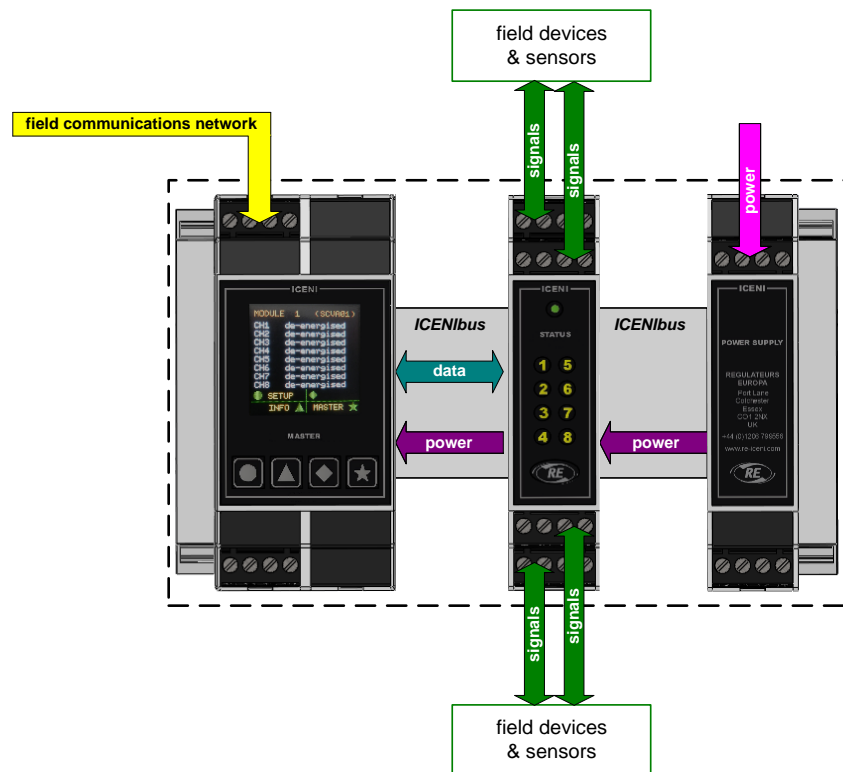


According to the mix of signal conditioning modules, the Icen node manages the measurement and generation of electrical signals to/from sensors and field devices. Information is exchanged with other nodes in a system via a field communications network connected to the Icen master module.

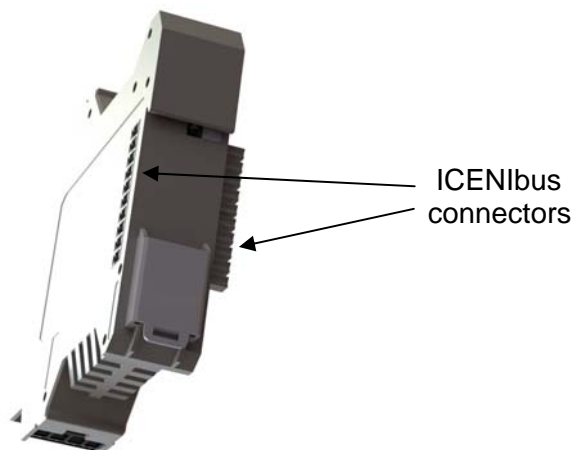


3.2 ICENibus Interface

Iceni modules are designed to plug together to form a node. The connection system used to join one module to another is called ICENibus and is used to transfer both data and power supply between modules.



All modules have a 10-way ICENibus connector on both sides of the lower housing, although for end modules (master and main power supply) one side connector will be supplied fitted with a protective cover.



3.3 Field Wiring Interface

As standard, Icen modules are supplied with screw-clamp field wiring connectors, although cage-clamp variants are available as an option.

For ICENI/TB-02 there are four connectors marked 1-4, 5-8, 9-12 and 13-16 to match the numbers marked on the Icen housing. This arrangement identifies the connector to its location on the module.

When fitted properly, the field wiring connectors are held securely in the module housing. In order to remove a terminal, a small flat bladed screwdriver should be inserted between the top of the connector and the module housing to enable the connector to be carefully levered free. This will release the connector without damage.

4 ICENI/TB-02 KEY FEATURES

The ICENI/TB-02 module is a component of an IcenI node and provides a convenient path for commoned signals to be routed from one side of the node to the other.

The ICENI/TB-02 module provides the following key features:

- Two signal pathways each with four interlinked terminals routed from one side of the module to the other.
- Up to four ICENI/TB-02 modules per node in addition to up to a further sixteen IcenI signal conditioning modules.

5 PRODUCT SPECIFICATION

5.1 Electrical Properties

5.1.1 Power Supply Input

Maximum ICENIbus consumption: 5mA

5.1.2 General

Number of signal pathways: 2

Number of interlinked terminals per pathway: 8 (4 per side)

Maximum terminal current (continuous): 1A

Maximum pathway current (continuous): 4A

5.1.3 Signal Isolation

Signal pathway to signal pathway: 500V

Signal pathway to external power supply: 1kV

Signal pathway to other modules: 1kV

5.1.4 Field Wiring Termination

4 x 4-way free part sockets with screw terminals. (Cage-clamp option available)

Wiring cross section / strip length 0.14 to 0.5mm² / 7mm

5.2 Mechanical Properties

5.2.1 Temperature Range

Operating: -20°C to +70°C (-4°F to +158°F)

Storage: -40°C to +85°C (-40°F to +185°F)

5.2.2 Material

Enclosure: Polyamide

Labels: Polyester

Membrane overlay: Polyester

5.2.3 Weight

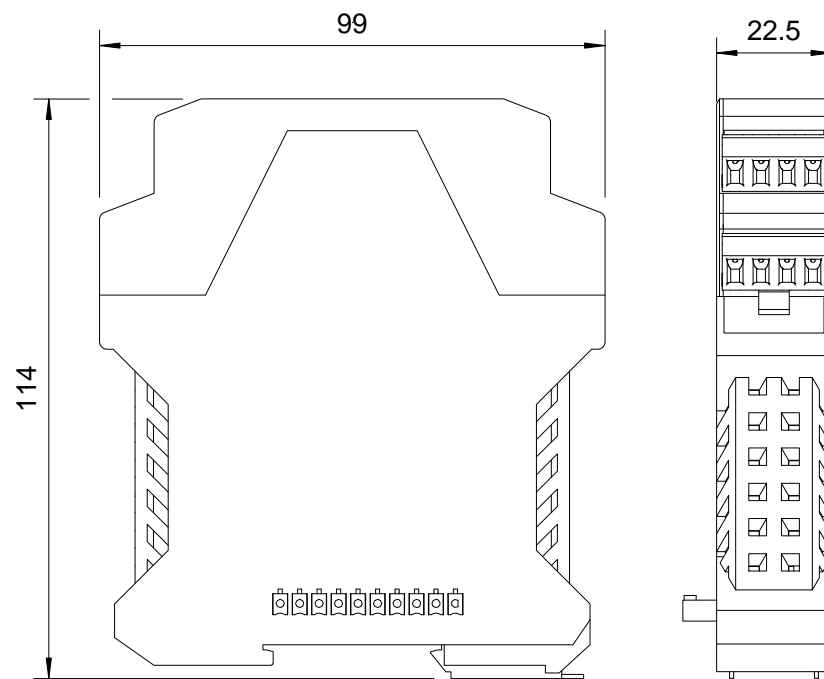
Module weight
(including free part screw terminals): 120g (approx.)

5.2.4 Ingress Protection

Assembled node: IP20

5.2.5 Dimensions

(Dimensions shown in mm)



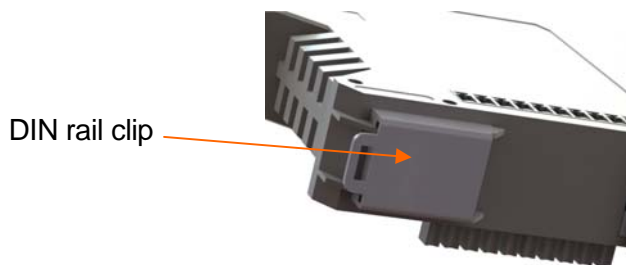
6 UNPACKING & INITIAL PREPARATION FOR USE

6.1 Unpacking

The module should be removed from the sealed bag inside the protective cardboard carton. All packaging should be disposed of in an appropriate way.

6.2 Node Assembly

The module is designed to clip and fit onto TS 35 DIN terminal rail (both standard and deep types) with other IcenI modules to form a node. A metal clip is provided on the base of each module for this purpose.



An IcenI node can be mounted in both vertical and horizontal orientations according to terminal rail layout. Assembly of the IcenI node can be achieved in one of two ways:

- The IcenI node (including the ICENI/TB-02 module) can be assembled on a bench and then fitted into place on the DIN rail with a slight tilting action. It is important that the metal DIN rail latch on the underside of each module engages properly with the rail to retain the modules in place.
- The ICENI/TB-02 module can be fitted with other modules one at a time on the DIN rail with a slight tilting action. It is important that the metal DIN rail latch on the underside of each module engages properly with the rail to retain the module in place. The modules can then be pressed together tightly to ensure that each module plugs into its neighbour to form the node.

6.3 Node Disassembly

Disassembly of the IcenI node is essentially the reverse of the procedure above and can be achieved in one of two ways:

- Each module can be separated from the next on the rail. The metal DIN rail latch can then be operated with a small screwdriver and the modules removed with a tilting action, one by one.
- The metal DIN rail latches for all modules can be released in turn with a small screwdriver until the IcenI node is free to be removed with a tilting action. The modules can then be separated from each other.

6.4 Module Positioning Within a Node

In addition to a master and power supply modules, and up to sixteen signal conditioning modules, a node may also contain up to four ICENI/TB-02 modules positioned anywhere between master and power supply modules.

Typical node configurations might be as follows (yellow indicates the position of the ICENI/TB-02 modules):

- a) A node containing eight signal conditioning modules with four ICENI/TB-02 modules individually positioned between signal conditioning modules.

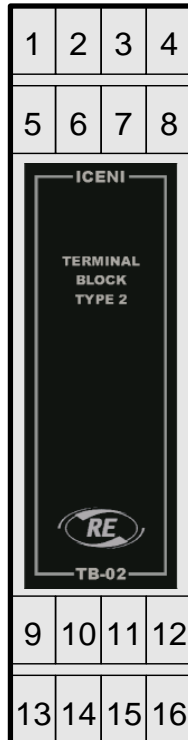


- b) A node containing eight signal conditioning modules with four ICENI/TB-02 modules grouped together and positioned between signal conditioning modules.



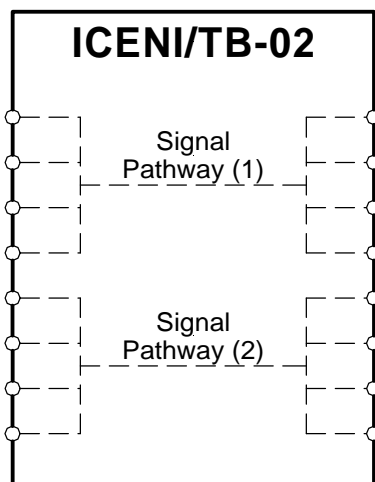
7 FIELD WIRING TERMINATION

7.1 Terminal & Connector Layout



SIGNAL PATHWAY	TERMINALS
1	1, 2, 3, 4, 13, 14, 15 & 16
2	5, 6, 7, 8, 9, 10, 11 & 12

7.2 Wiring Schematic



7.3 Earthing / Grounding

The metal terminal rail to which the Iceni node is attached should be connected to a 'clean' earth / ground point. In many applications this would be the chassis of the product.

8 MODULE OPERATION

8.1 General

The circuitry in the ICENI/TB-02 module is used during the configuration of the IcenI signal conditioning modules by the IcenI master.

With the exception of the configuration process, the ICENI/TB-02 module has no active role in the IcenI node other than to provide a path for signals from one side of the node to the other with signal communting.

8.2 Signal Conditioning Module Configuration

ICENI/TB-02 modules have no affect on the module numbering scheme of signal IcenI conditioning modules allocated during configuration. Numbering continues to start from the left at module 1, increasing by one each time a signal conditioning module is fitted.

An example of this is shown below.



9 CONTACT

For sales or support enquiries, the following contact details should be used. The product part number and serial number (where available) should be referenced.

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10 REVISION HISTORY

REVISION	DATE	AUTHOR	CHANGES
1	22.04.14	MMB	Original



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