



# QA-I



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## SAFETY WARNINGS AND CAUTIONS

The following warnings and cautions must be observed to ensure personal safety and prevent damage.



**Death** or **serious injury** may result from failure to heed this warning.



It is necessary to comply with national regulations when installing and picking materials for power lines.



**Material damage** or **serious personal injury** may result from failure to heed this warning.



Repairs and modifications must be carried out only by the manufacturer. It is forbidden to open the case and make any changes to the device. Tampering with the device will invalidate the warranty.



The manufacturer **declines all responsibility** for electrical safety in the event of improper use of the equipment.



It is essential to read the entire contents of this manual before carrying out any work.



The product described in this document may only be used for the specified application. The maximum performance data and environmental conditions specified in the product data sheet must be observed. Proper transport and storage, as well as professional assembly, installation, handling and maintenance are required for the correct and safe operation of the device.



Before commissioning, make sure that:

- the maximum values for all connections are not exceeded; refer to the product data sheet;
- the connection cables are not damaged or live during wiring;
- the direction of current flow and phase rotation are correct.

Use under ambient conditions other than those specified, application of signals or voltages other than those specified, may cause significant deviations from the specified measurement tolerances, which may be irreversible.

During installation, ensure that a switch or circuit-breaker is near the product and easily accessible.



Although the contents of this document have been checked for accuracy, it may contain errors or inconsistencies and we cannot guarantee its completeness or accuracy.

The unit must be uninstalled if safe operation can no longer be guaranteed (e.g. visible damage). Disconnect all connections in this case. The unit should be returned to the manufacturer or to an authorised service centre for repair.



This document is subject to periodic revision and updating. QEED reserves the right to make changes to the product and/or its technical documentation at any time in the interests of continuous quality improvement. Always consult the latest version of the documentation available on the website:



**WARNING:** High-intensity magnetic fields may alter the values measured by the transformer. Avoid installation near: permanent magnets, electromagnets, or iron masses. If irregularities are detected, reposition or move the unit to a more suitable location.

[www.qeed.it](http://www.qeed.it)

If you find any errors or missing information in this document, please notify us by e-mail to:

[technical@qeed.it](mailto:technical@qeed.it)



Failure to observe the warnings may result in damage to the equipment or failure to operate as intended.



Disposal of waste electrical and electronic equipment (applicable in the European Union and other countries with separate collection). The symbol on the product or its packaging indicates that the product should not be treated as household waste. Instead, it will be handed over to an authorised collection point for the recycling of electrical and electronic waste. Ensuring that the product is disposed of properly will prevent potential negative effects on the environment and human health, which could otherwise be caused by inappropriate waste management of the product. Recycling materials helps to conserve natural resources. For further information, please contact your local authority, waste disposal service or the retailer from whom you purchased the product.



Please note that the information on the nameplate must be observed.





## PRODUCT OVERVIEW

The QA-I is a current isolator for 0...20mA current signals that reproduces the input current signal at the output without any programming. The module handles both active and passive current signals, both in input and in output. It can run from both AC or DC power. It features full 1.5 kV galvanic isolation between power supply, input and output. Power and error output status LEDs are on the front of the case.

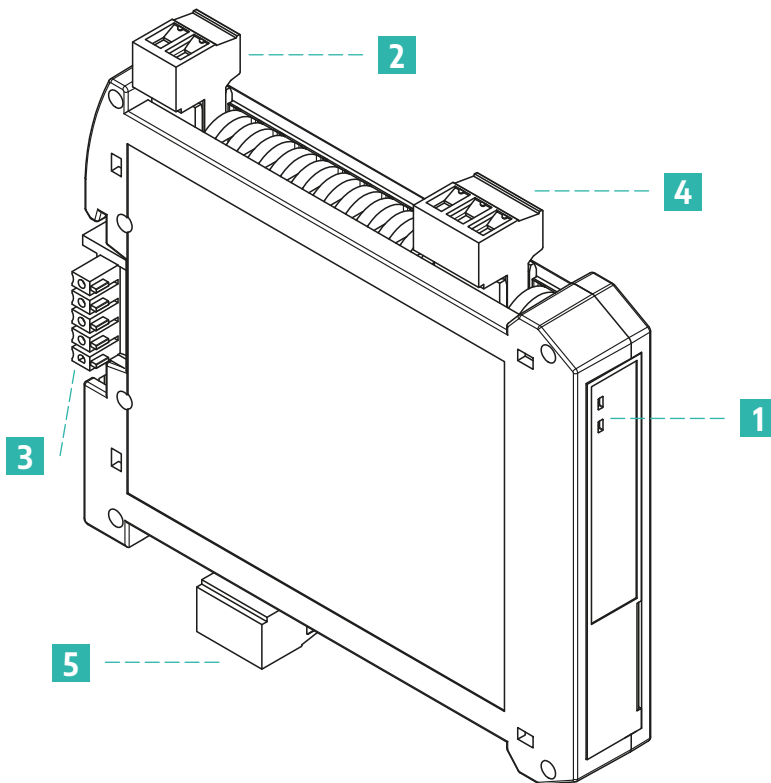
Ready for DIN rail mounting with T-BUS terminal (optional) for fast connection with hot insertion/removal option.

### Input

- Current: active or passive, up to 20mA, input impedance 20Ω, MAX resolution 2μA

### Output

- Current: 0...20 mA active or passive, maximum load resistance 600Ω



- 1 Status LEDs
- 2 Power supply terminals
- 3 T-BUS terminal for both power supply and Modbus RTU communication (optional)
- 4 Input terminals
- 5 Output terminals

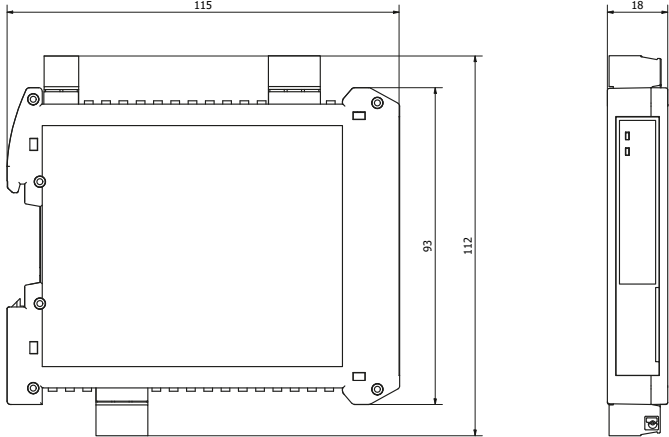



## TECHNICAL SPECIFICATIONS

### Electrical characteristics

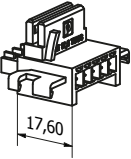
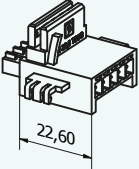
Power supply	10 ÷ 40 V <sub>DC</sub> or 20 ÷ 28 V <sub>AC</sub> @ 50/60Hz
Current consumption	250mA max
Isolation	1.5kV galvanic isolation between input, analogue output and power supply
Precision class	0,1% F.S.
Temperature coefficient	<100ppm/°C
Retransmitted output	Analogue programmable passive and active current (max. voltage 24V). Supply for passive sensors: 13V <sub>DC</sub> , 30mA max
Resolution	16 bit
Input	Current analogue: 20Ω input impedance, MAX resolution 2μA
Output	Analogue current 0 ÷ 20mA - 4 ÷ 20mA, programmable, maximum load resistance 600 Ω
Visual interface	Status LEDs

### General data

Working temperature	-15 ÷ 60° C
Storage temperature	-40 ÷ 85° C
Relative humidity	10 ÷ 90% not condensing
Elevation	Up to 2000m a.s.l.
Protection degree	IP20
Measurements	115 x 113 x 18mm 
Weight	116 g
Terminal cable cross-section	0.05 ÷ 1.5 mm <sup>2</sup> (30 ÷ 14 AWG)
Approvals and certifications	EN61000-6-4/2006 + A1 2011; EN61000-6-2/2005; EN61010-1/2010  
Installation	Inside electrical panels and mounted on a DIN rail










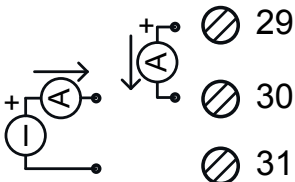






**Order codes**

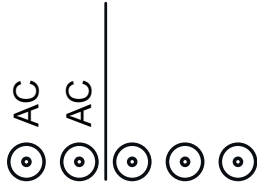
Product	QA-I
T-BUS	 <p>QA-TBUS-17,5 width 17,6mm</p>
	 <p>QA-TBUS-22 width 22,6mm</p>

**CONNECTION AND INSTALLATION**

For the connection of several instruments with reduced wiring, the unit is designed for DIN rail mounting, with or without T-BUS connector.

The functionality of the terminals is described below:

<p>16  AC    MAX 2 VA 10-40 Vdc</p> <p>17  AC    20-28 Vac</p>	<p>Device power supply. <b>Please note:</b> Wiring must be protected against short circuits and/or accidental faults</p>
<p>2  </p> <p>3  </p> <p>4 </p>	<p>Analogue input connections:</p> <ul style="list-style-type: none"> <li>- Active current input: terminal 2 (positive) and 3</li> <li>- Passive current input: terminal 2 (positive) and 4</li> </ul>
<p>OUT MAX 24V</p>  <p>29 </p> <p>30 </p> <p>31 </p>	<p>Analogue output connections:</p> <ul style="list-style-type: none"> <li>- in active current: connect terminal 29 (positive) and 30 (max 24Vdc allowed)</li> <li>- in passive current: collegare i morsetti 30 (positivo) and 31 (analogue output sensor power supply: 13Vdc, max 30mA)</li> </ul>
<p>RELAY MAX 250Vac MAX 5A</p> <p>NO  25</p> <p>COM  26</p> <p>NC  27</p>	<p>Digital output SPDT 5A / 250VAC changeover relay</p> <p>25 normally open (NO)</p> <p>27 normally closed (NC)</p> <p>The default setting is NO</p> <p>Relay 250Vac MAX and 5A MAX</p>



T-BUS connection (requires optional T-BUS accessory):  
the T-BUS accessory can be fitted to the module base to provide both power supply and serial communication (see figure below).  
The number of modules supported by the bus depends on the power supply used (please check the power consumption of the modules)



Figure 1: DIN-rail installation with T-BUS

### STATUS LEDS

Function	Status	Meaning
Power (green)	ON	Powered device
Fail (yellow)	ON	Presence of an anomaly/error on the module (hardware issue, out of scale measurement, incorrect electrical connection, etc...)



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As standards, specifications, and design change from time to time, please ask for confirmation of the information given in this publication.