



MEIRI ME52C Version G

USER MANUAL



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SAFETY INSTRUCTIONS

PLEASE READ THIS MANUAL BEFORE PROCEEDING ANY HANDLING

PRELIMINARY PRECAUTIONS



The elementary precautions, safety rules and instructions set out in the present document must be observed at all times in order to ensure the safety of persons and to prevent any damage to the device or to instruments which are connected to the latter. It is also essential that statutory requirements and safety requirements for the application concerned should be observed during use.

For reasons of safety, the device must only be used by a qualified person. The device must only be used for the purposes for which it has been designed, and within the limits of application specified. The device must not be opened, other than in the context of the operations listed in the present document. No attempt must be made to remove internal components, or to modify them in any way.

The device constitutes one link in an instrumentation channel. Equipment installers and operators must undertake the planned consideration, deployment and response to safety requirements associated with the device, with the instruments connected thereto and with instrumentation technology.

INSTALLATION PRECAUTIONS



Only the voltage required by the measuring device should be used. It must be confirmed that the instruments or the power grid delivering voltage to the device are consistent with the rating indicated on the latter.

The electrical safety of this device can only be guaranteed if the latter is correctly connected to a grounding installation, in accordance with electrical safety standards. It is essential to confirm that this fundamental safety requirement is properly fulfilled. For installation purposes, a two-pole switch must be provided, with a minimum 3 mm contact breaking gap. The device must be protected against any direct contact with water, and the maximum permissible ambient temperatures must be observed. The use of the device in direct sunlight, or in very hot, humid, dirty or dusty locations, locations

which are subject to strong vibrations or in proximity to magnetic fields may result in incorrect operation.

No objects must be placed in front of the ventilation outlets of the measuring device, or the correct ventilation of the internal components will otherwise be impaired, resulting in overheating.

If the measuring device shows signs of incorrect operation, or if any unusual odour or smoke is detected, it should be disconnected from supply immediately and serviced by a qualified MEIRI engineer.

GUARANTEE

MEIRI measuring devices are covered by a 1-year factory return guarantee for parts and labour, excepting any specific provisions.

The guarantee will not be enforceable in the following specific cases:

If the device has been operated at a voltage other than that indicated on the data plate of the device. If the user employs the device supplied in an abnormal or improper manner, or undertakes any modifications thereto. If the user causes damage by negligence, inadequate servicing, inexperience or the use of harmful products.

Replacements or repairs undertaken under the terms of the guarantee and resulting in the unavailability of the device for a period of less than seven days shall not extend the term of the guarantee. For the enforcement of the guarantee, the user must contact the MEIRI distributor who sold the device concerned. Repairs under guarantee will be undertaken in our laboratories, and the device must be returned in packaging which will ensure the safety thereof during transport. The user will assume packaging and carriage costs for the return of the device to the factory. MEIRI or its distributor will assume packaging and carriage costs for the return of the device to the user after repair in mainland France only. No compensation shall be payable in respect of the unavailability of the device associated with the conduct of repairs under the terms of the guarantee.

2 INTRODUCTION

Thank you for choosing an electronic device from the MEIRI range. This document should be read carefully, and the manual should be kept in a safe place for future reference; our guarantee will only apply if products are installed and used in accordance with the instructions indicated.

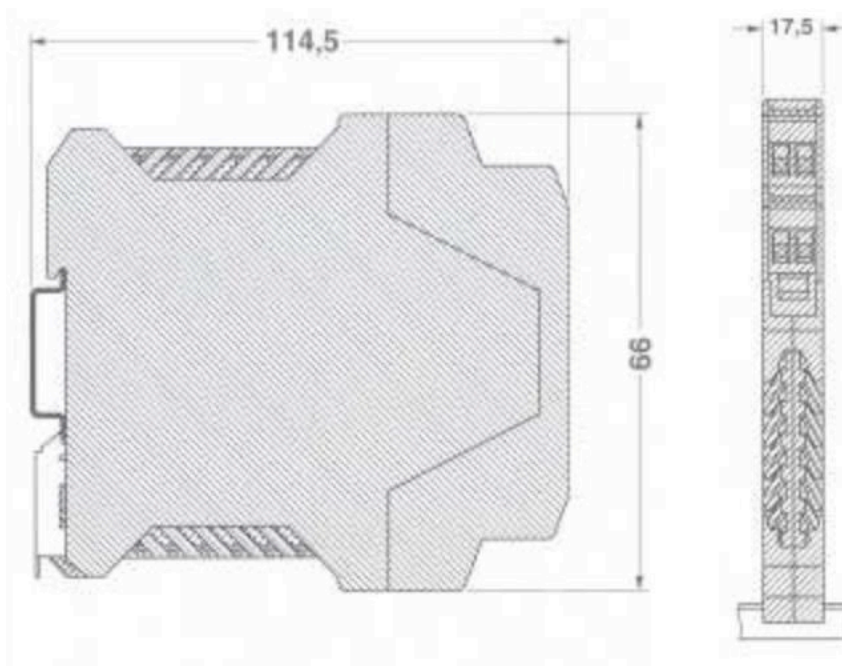
3 PRESENTATION

The ME52C is a modular analogue signal converter for installation on a DIN rail. It is chiefly designed for the adaptation of signals in order to deliver an analogue output which can be used by an acquisition system or a programmable controller.

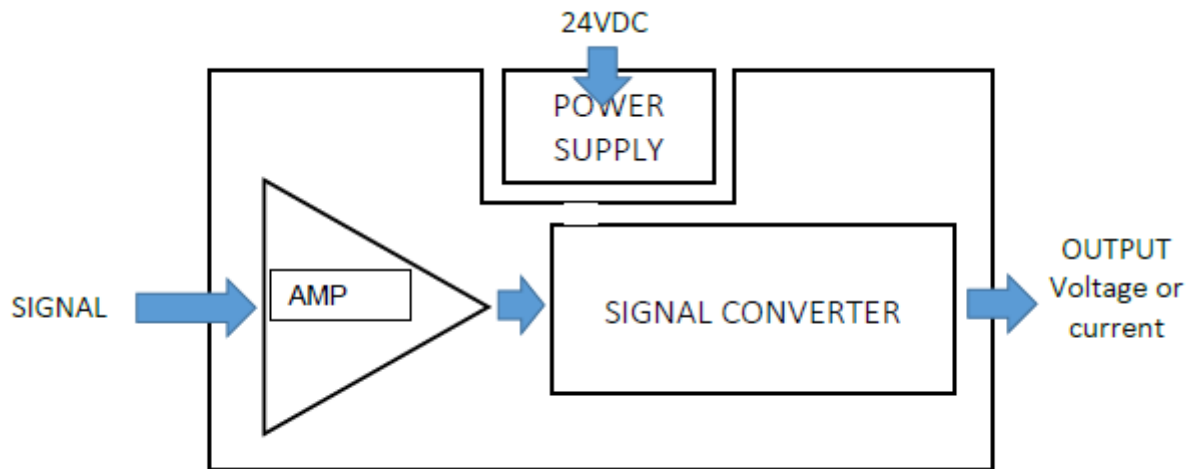
It can also be used as a voltage or current amplifier, an impedance adaptor or a galvanic isolator.

Delivered with factory-set input and output values, in accordance with the client's requirements, the ME52C is extremely simple to use, and requires no intervention by the operator.

3.1 DIMENSIONS



3.2 SCHEMATIC DIAGRAM



4 PRINCIPLE OF OPERATION

The ME52C converts and amplifies signals originating from all types of electronic devices to deliver a standardized analogue output ($\pm 10V$, 4-20mA, etc.). Calibrated in-factory according to your requirements, as specified at the time of ordering, the ME52C requires no configuration or setting.

Galvanic isolation of three ports and a specific filtering function are also available as options.

5 CHARACTERISTICS

GENERAL CHARACTERISTICS OF ME52C		
Housing dimensions	H*L*D	99*17.5*112mm
Base depth of DIN rail		114.5 mm
Weight		110 grams
Fixing	In accordance with standard EN50022	DIN rail
Connection	Removable screw terminal block	3*3 terminals
Main power supply		
Main power supply		18-36 V d.c.
Insulation of power supply	Between 0V and GND (60 s max.)	1000 V d.c.
	Between 0V and ground	400 V d.c.
	Between GND and ground	400 V d.c.
Typical consumption	Excluding output	45mA
Input	As requested	
Output	As requested	
Output current	At output voltage U	±5 mA
Voltage output	Maximum dynamic variation	±10 V
	Short-circuit current	±20 mA
Current output	Maximum dynamic variation	±20 mA
	Reserve voltage margin on load	±10 V
Input impedance	Between one input and ground	1.3 MΩ
	Between the two inputs	2.6 MΩ
Output impedance		0.2 Ω
Low-pass filter	Typical cut-off frequency at -3dB	30 kHz
Supply voltage rejection	Typical	120 dB
Accuracy	Over full scale	0.1%
Protection rating		
Protection rating		IP20
Service temperature		
Service temperature		-10 to +70°C
Storage temperature		
Storage temperature		-20 to +85°C

6 PRODUCT FUNCTIONS

Combined table of input and output signals

Input	Voltage output			Current output			
	±5 V	±10 V	0-10 V	±10 mA	±20 mA	0-20 mA	4-20 mA
±100 mV	●	●	●	●	●	●	●
±1 V	●	●	●	●	●	●	●
±5 V	●	●	●	●	●	●	●
±10 V	●	●	●	●	●	●	●
0-10 V	●	●	●	●	●	●	●
±15 V	●	●	●	●	●	●	
±30 V		●			●	●	●
±10 mA	●	●	●	●	●	●	●
±20 mA	●	●	●	●	●	●	●
0-20 mA	●	●	●	●	●	●	●
±100 mA	●	●	●	●	●	●	●
±300 mA	●	●	●	●	●	●	●

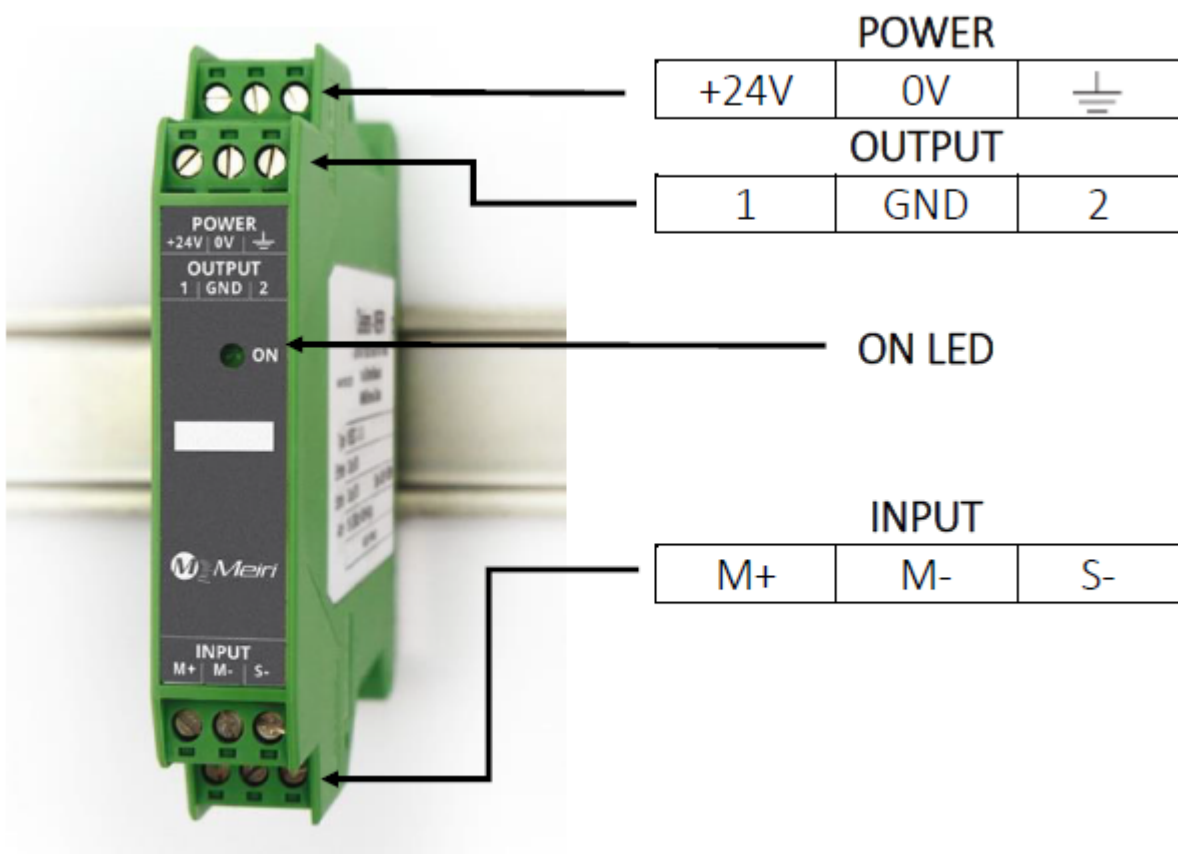
N.B.: This table is provided by way of an example – other values are available on request.

7 ENTRY INTO SERVICE


7.1 PRECAUTIONS

Before connecting or disconnecting the measuring device to/from other electronic components, the latter must be isolated from supply. Disconnect all cables before removing or moving the device. The setting components must not be handled too roughly. N.B.: removable screw terminal blocks with a foolproofing function permit rapid and straightforward disconnection/reconnection.

7.2 CONNECTIONS



POWER

+24V	Main power supply
0V	0V main power supply
	Ground

ON LED

Power supply indicator light

OUTPUT

1	Analogue output
GND	Output ground
2	DCC

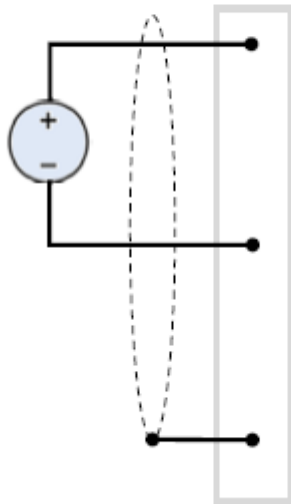
INPUT

M+	(+) Measuring input
M-	(-) Measuring input
S-	(-) Input ground

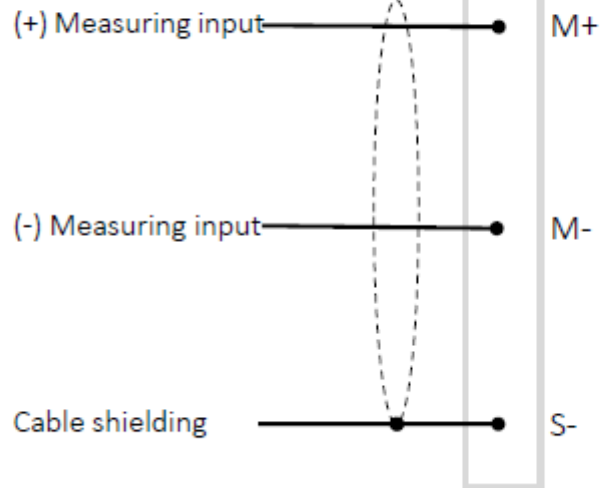
7.2 CONNECTIONS

ME52C CONNECTIONS

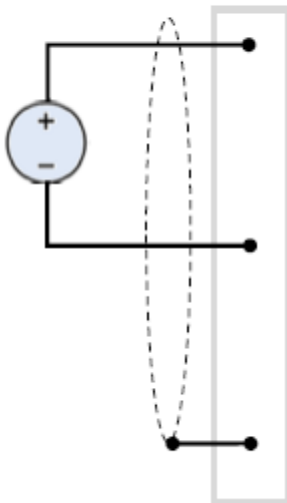
Differential voltage



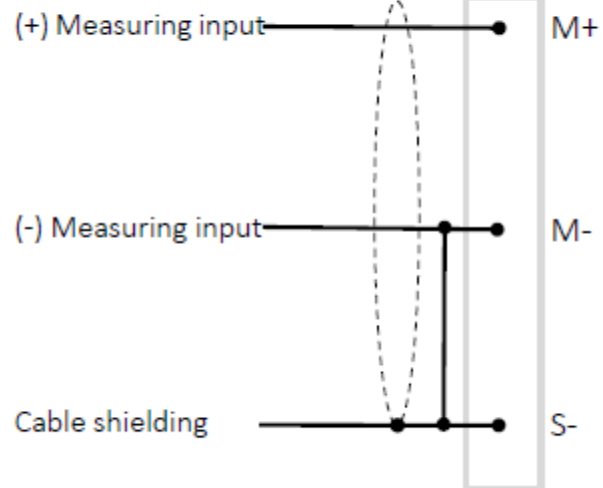
ME52C



Ground reference voltage or current



ME52C



8 SERVICING

Before any cleaning or servicing operation, the device should be disconnected from supply by removing the plug or turning off the switch on the electrical installation. If the measuring device is soiled, it should be cleaned using a clean and dry cloth. Do not use liquid cleaning agents such as benzene or thinners, or inflammable products. Never use paint thinners, solvents, servicing products or cleaning pads which are impregnated with chemical products. MEIRI cannot assume liability for any deterioration caused by the incorrect use of the measuring device or by modifications made by the use, nor for any loss or destruction of data.

9 TROUBLESHOOTING

Before returning your ME52C to our after-sales service, ensure that cables are correctly fitted, both on the sensor and on the installation to which it is connected. Also ensure that the use of the device is appropriate to your application.

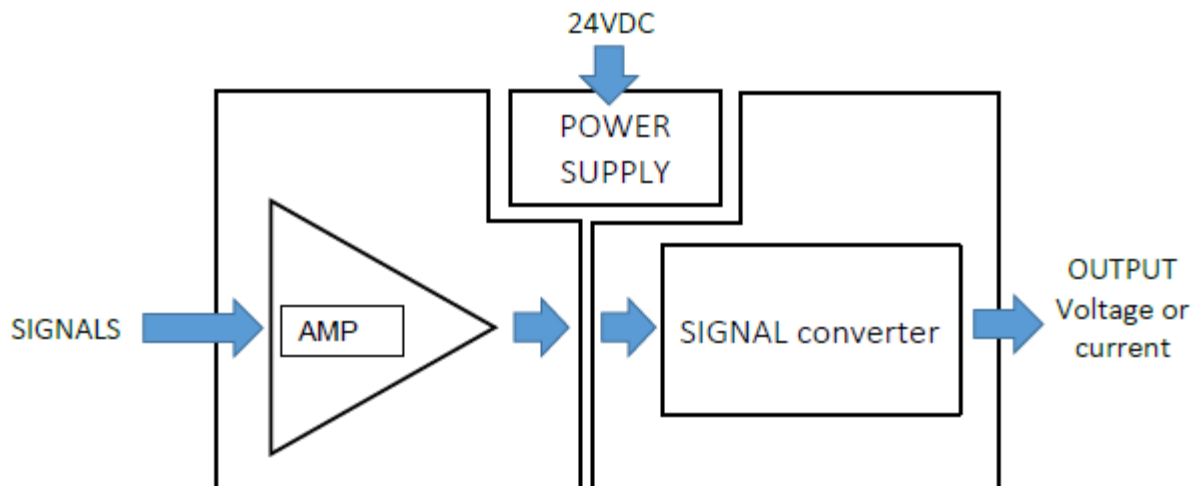
A number of troubleshooting tips are set out in the table below:

SYMPTOM	POTENTIAL SOLUTION
The measured value fluctuates, or is not stable.	<ul style="list-style-type: none"> - Use shielded cables for the connection of sensors; connect shielding to the input ground on the module (S-). - Be aware of ground loops. Connect the device to the instrument ground at a single point on your instrumentation chain.
Impossibility of zero-setting by the shunting of inputs.	<ul style="list-style-type: none"> - As the various ME52C models may have a high input impedance, shunting M+ and M- will not be sufficient to reset the input to 0. The input ground pole (S-) must also be connected to the instrument poles.

10 OPTIONS

10.1 ISO OPTION

The ME52C is available in an insulated 3-port version.



CHARACTERISTICS OF ISO VERSION

Main power supply		22-26 V d.c.
Insulation of power supply	Between 0V and GND (60 s max.)	1000 V d.c.
	Between 0V and ground	400 V d.c.
	Between GND and ground	400 V d.c.
Input/output insulation	Between input ground and output GND	400 V d.c.

Note: it is not possible to progress from a non-insulated module to an insulated module.

10.2 FILTER OPTION

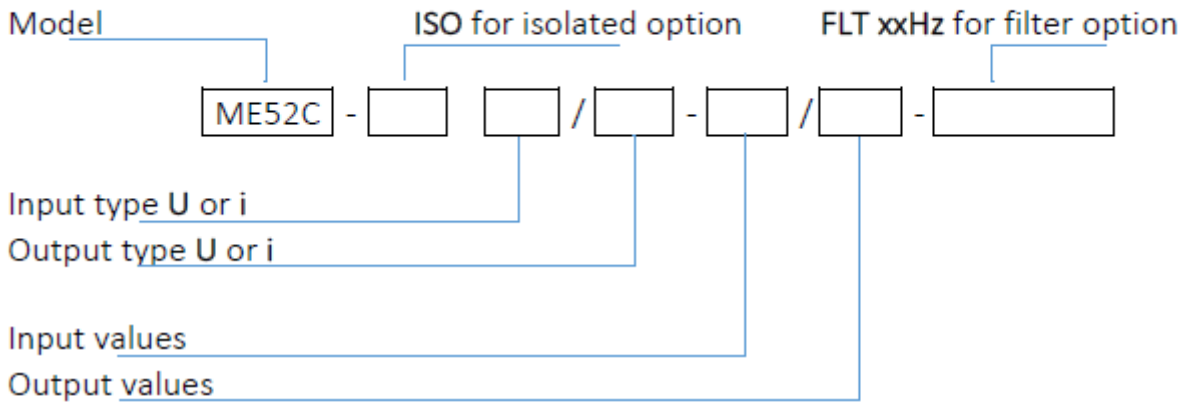
A filter option is available for each model in the ME52C range. The filter rating is fixed, and may be set between 10 Hz and 20 kHz as required.

CHARACTERISTICS OF FILTER OPTION

Type	Low-pass Butterworth filter	6 th order
Cut-off frequency	As requested	10 Hz to 20 kHz
Accuracy	Off cut-off frequency at -3dB	±10 %

11 ORDER REFERENCE

CREATE YOUR REFERENCE



EXAMPLES

ME52C - U/U - $\pm 10V$ / $\pm 10V$
 ME52C - i/U - 4-20mA / $\pm 10V$
 ME52C - U/i - $\pm 10V$ / ± 20 mA
 ME52C - ISO U/U - $\pm 100mV$ / 0-10V
 ME52C - i/U - $\pm 10mA$ / $\pm 10V$ - FLT 100Hz

END OF DOCUMENT