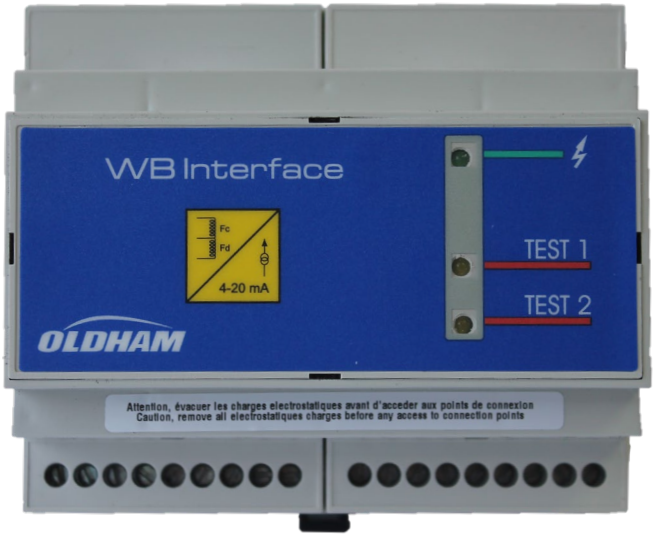
TELEDYNE
OLDHAM SIMTRONICS
Everywhereyoulook™

WB INTERFACE

WB/4-20mA CONVERTER



User Manuals in other languages are available on Website
https://teledynegasandflamedetection.com

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The information contained in this manual is accurate to our knowledge. As a result of continuous research and development, the specifications of this product may be modified at any time without prior notice.

TELEDYNE OLDHAM SIMTRONICS S.A.S.

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62027 ARRAS Cedex

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1 General Information

WARNING: ALL INDIVIDUALS WHO HAVE OR WILL HAVE RESPONSIBILITY FOR USING, MAINTAINING, OR SERVICING THIS PRODUCT MUST READ THIS ENTIRE MANUAL CAREFULLY. FAILURE TO USE THIS EQUIPMENT PROPERLY COULD RESULT IN SERIOUS INJURY OR DEATH.

1.1 User Manual

The instructions given in this manual must be read thoroughly before installation and start-up, particularly those concerning the points related to the safety of the end-user. This user manual must be made available to every person involved in the activation, use, maintenance, and repair of the unit.

The information, technical data, and diagrams contained in this manual are based on the information that is available at a given time. In case of doubt, contact *TELEDYNE OLDHAM SIMTRONICS* for additional information.

The aim of this manual is to supply simple and accurate information to the user. *TELEDYNE OLDHAM SIMTRONICS* cannot be held liable for any misinterpretations in the reading of this manual. In spite of our efforts to produce an error-free manual, it may nonetheless contain some unintentional technical inaccuracies.

In the client's interest, *TELEDYNE OLDHAM SIMTRONICS* reserves the right to modify the technical characteristics of its equipment to increase their performance without prior notice.The present instructions and their content are the inalienable property of TELEDYNE OLDHAM SIMTRONICS.

1.2 Symbols used

Icon	Significance
	This symbol indicates useful additional information.
	This symbol indicates: Earth ground connection.
	This symbol denotes: Protective earth terminal. A cable of the adequate diameter must be connected to ground and to the terminal having this symbol.

Icon	Significance
	This symbol denotes: **Attention! In the present mode of use, failure to adhere to the instructions preceded by this symbol can result in a risk of electric shock and/or death.**
	This symbol indicates: You must refer to the instructions.
	European Union (and EEA) only. This symbol indicates that this product must not be discarded with household waste, as per the EEA directive (2002/96/EC) and your own national regulations. This product must be disposed of at a collection point that is reserved for this purpose, for example, an official site for the collection of electrical and electronic equipment (EEE) in view of their recycling, or a point of exchange for authorized products that is accessible when you acquire a new product of the same type.

1.3 Safety Instructions

Labels intended to remind you of the principal precautions of use have been placed on the unit in the form of pictograms. These labels are considered an integral part of the unit. If a label falls off or becomes illegible, please ensure it is replaced. The significance of the labels is detailed below.

	The installation and electrical connections must be carried out by qualified personnel according to the instructions of the manufacturer and the standards of the competent authorities.Failure to adhere to the instructions can have serious consequences on the safety of persons. Please be extremely rigorous as regards electricity and assembly (coupling, network connections). Cables with an operating temperature of 70°C minimum (158 °F) must be used because the temperature inside the controller can reach 70°C (158 °F).

1.4 Important Information

The modification of the material and the use of parts of an unspecified origin shall entail the cancellation of any form of warranty.The use of the unit has been projected for the applications specified in the technical characteristics. Exceeding the indicated values cannot in any case be authorized.

1.5 Liability Limits

Neither *TELEDYNE OLDHAM SIMTRONICS* nor any other associated company under any circumstances can be held liable for any damage, including, without limitations, damages for loss or interruption of manufacture, loss of information, defect of the *WB Interface*, injuries, loss of time, financial or material loss, or any direct or indirect consequence of loss occurring in the context of the use or impossibility of use of the product, even in the event that *TELEDYNE OLDHAM SIMTRONICS* has been informed of such damage.

1.6 Warranty

Under normal conditions of use and on return to the factory, parts and workmanship carry a one year warranty, excluding consumables such as backup power supplies, audio and visible alarms, etc.

1.7 Waste Electrical and Electronic Equipment (WEEE directive)

European Union (and EEA) only. This symbol indicates that, in conformity with directive DEEE (2002/96/CE) and according to local regulations, this product may not be discarded together with household waste.

It must be disposed of in a collection area that is set aside for this purpose, for example at a site that is officially designated for the recycling of electrical and electronic equipment (EEE) or a point of exchange for authorized products in the event of the acquisition of a new product of the same type as before.

2 Presentation

The WB interface is:

- equipped with a compact (58x105x90 mm) "NORYL" case. Clipping on to a standardised symmetrical DIN rail, it can easily be integrated into an electrical cabinet;
- equipped with two identical measuring channels;
- equipped, for each channel, with an analog input (supply of steady current delivering a signal in mV to a catalytic sensor) and a corresponding 4 to 20 mA current output;
- the elements required for use are grouped together on the front of the apparatus:
  - at the top for the settings and tests (Figure 1/Ref.1),
  - on the FRONT panel for the indicator lights (Figure 1/Ref.2),
  - at the bottom for the connections (Figure 1/Ref.3).

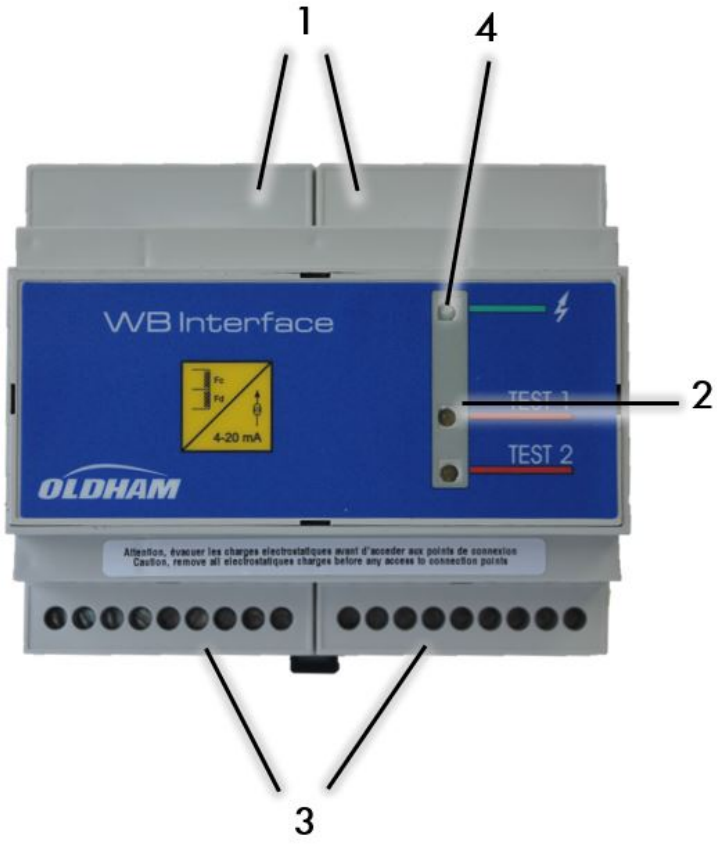


Figure 1

3 Mounting the interface

The WB interface is mounted on its symmetrical DIN rail and can be fitted in any enclosed electrical cabinet without the need for any special installation.

It must be installed in a room away from explosive atmospheres, etc.).

4 Connections

The electrical connection must be made by a specialist and comply with the regulations in force. It must conform to standard NF C 15-100.

The wires to be connected to the WB interface will have a maximum section of 2.5 mm². The WB interface is powered with a 24 V direct current (DC) supply

4.1 DC supply

24 Volt supply

The 24 Volt supply can be connected to the points marked 0 and 24 V - - - on the terminal block (see Figure 2, Ref.1).

The cable must have a minimum section of 1.5 mm².

Consumption: max. 15 W (sensors connected).

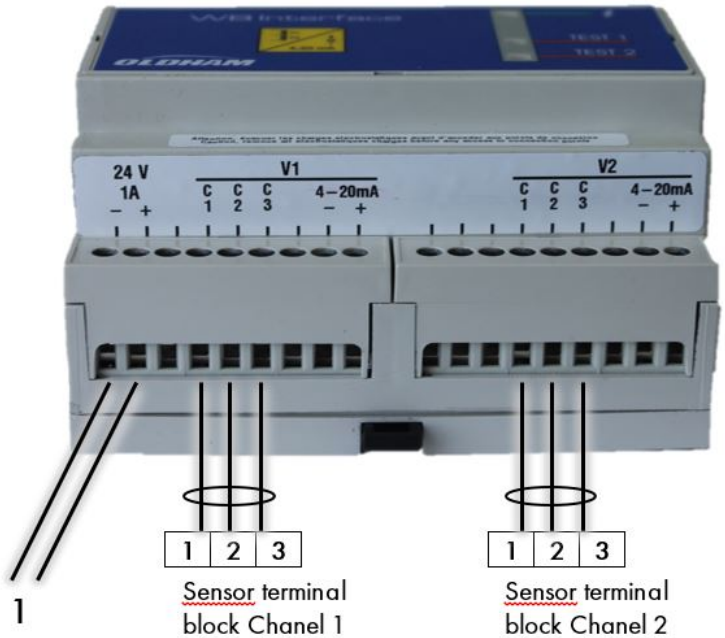


Figure 2

4.2 Flammable sensors

- Only "Wheatstone bridge" type flammable sensors can be connected to the WB interface. The following sensor types may be used: CAPTEX, CEX 300, OLC20, OLC50, etc
- Terminals C1, C2 and C3 of the WB interface and the sensors will be connected facing each other as shown in Figure 2.
- The maximum loop resistance is 16 ohms.

Example: the maximum distance between the WB interface and the sensors will be 500 m with 1.5 mm² section conductors.

4.3 The 4 / 20 mA output

The 4/20 mA output of each measuring channel will be able to be connected to an appropriatecentral measuring unit.

The maximum impedance of the current loop will be 500 ohms.

The WB interface is linked to the central unit using a shielded cable with two active conductors.The shielding will be grounded at one end only.

The connections will be made as shown in Figure 3.

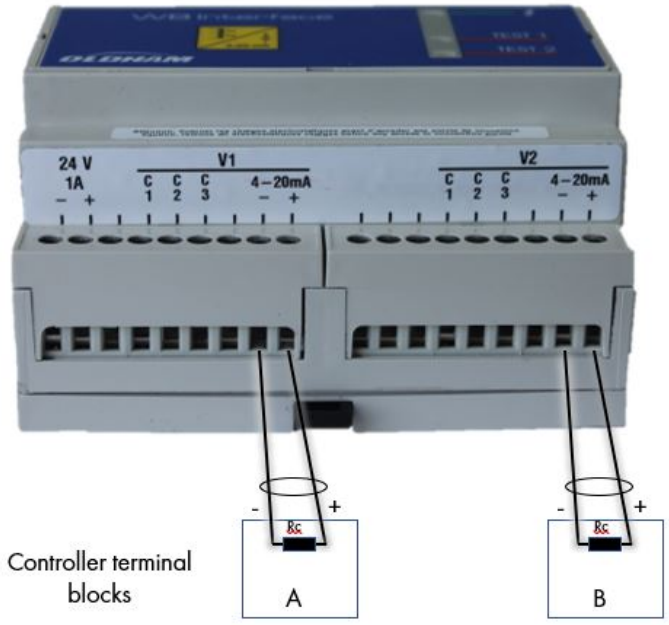


Figure 3

5 Instructions of use

5.1 Switching on

It is firstly ascertained that all connections are made and that the entire installation complies withthe current standards in force.

As soon as the WB interface is powered up, it is ready for use and the GREEN light-emitting diode is lit (Figure 1, Ref. 4)

5.2 Switching off

The device is switched off essentially by shutting down the power supply at an electrical cabinet. The green LED goes out.

5.3 Settings

The handling and setting operations described in this section are intended strictly for authorised persons only as they are liable to affect the safety of the detection function.

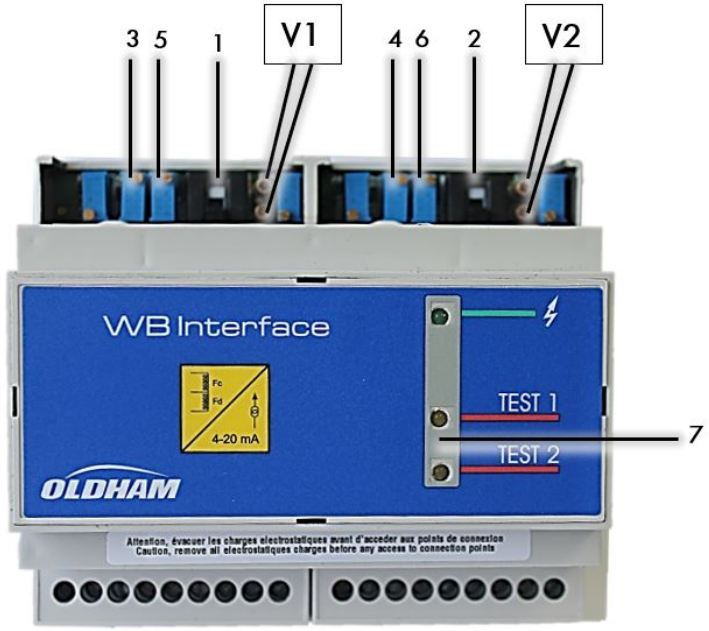
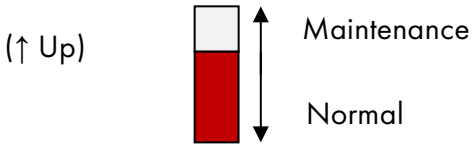


Figure 4

5.3.1 Setting the zero

- Necessary when changing sensor.
- At least once yearly and according to use.
- Connect a voltmeter to the two studs provided (MF and MES), as shown in Figure 4.

If in the course of setting, you wish to **inhibit the alarms on the central measuring unit** (relay), flick the maintenance switch (of the channel concerned) up (Figure 4, ref. 1 and ref. 2) which will block the corresponding 4/20 mA output **at 2 mA** and the **amber "TEST" LED** will light up (rep7,Figure 4)



Once the settings are complete, remember to put the switch back to the normal position

- Make sure that the atmosphere is gas free (if this is not the case, air needs to be injected).
- Adjust the ZERO using the ZERO potentiometer: Figure 4, Ref. 3 (channel 1) or Figure 4, Ref. 4 (channel 2). The voltmeter should read "40 mV".
- N.B. Once set, the corresponding 4 / 20 mA output will deliver 4 mA (maintenance switch in"normal" position).

5.3.2 Adjusting the gas span

- Necessary when changing sensor.
- At least once yearly and according to use.
- Connect a voltmeter to the two studs provided (MF and MES), as shown in Figure 4.
- Prepare the calibration kit and attach the gas infeed pipe to the sensor.
- Set the calibration gas flow to 60 l/h before injecting.
- Inject the gas: to achieve a correct setting, OLDHAM recommends using a content at least equalto 30% of the scale (30% LEL of the gas concerned).
- Wait at least 30 seconds for the reading to stabilise.
- Adjust the span using the Span potentiometer: Figure 4, Ref. 5 (channel 1) or Figure 4, Ref. 6 (channel 2). The voltmeter should now read "**xx mV**" according to the concentration of theinjected gas (see example below).

Once set, and with the gas, the corresponding 4 / 20 mA output will deliver **xx mA.** (maintenance switch in "normal" position)

REMINDERS:

- Calibration gas used = methane (CH4)
- LEL of CH4 = 5%
- Content used = 2.5% CH4 (50% LEL)
- Therefore the value to be set and read on the voltmeter will be: U = 40 mV + 160 mV x 2.5/5 = 40 mV + 80 mV = 120 mV

In this specific case, once set, and with the gas, the 4 / 20 mA output will deliver 12 mA (maintenance switch in "normal" position).

When the settings are complete:

- stop the gas injection
- remove the gas infeed pipe
- check that the signal returns to ZERO (40 mV on the voltmeter)

6 Technical Specifications

Manufacturer:	OLDHAM
Type:	INTERFACE WB
Function:	4...20 mA converter for explosive gas sensors in a Wheatstone bridge
Capacity:	1 or 2 sensors
Measurement	
Measurement	Continuous
Display	None
Visual alarms	
	Sensor 1 test: amber Sensor 2 test: amber
Electrical power supplies	
DC	21.5 to 30Vdc
Consumption	15W
Protection	fuse
Measurement line	
Cable	3 conductors
Maximum line length	500 m (with 1.5 mm^2 conductor)
Maximum loop resistance	16 ohm
Mechanical	
Mounting	On symmetrical DIN rail
Various	
Technology	SMC (Surface-Mounted Components)
Mains power indicator	Green LED
Case	NORYL
Warranty	1 year
Dimensions	58x105x90 mm
Weight	0.360Kg
Case protection	IP30
Conditions of use	
Ambient temperature	+10 °C to + 45 °C
Humidity	5 % to 95 % uncondensed
Altitude	≤ 2000 metrers

7 Cleaning and maintenance

7.1 Cleaning

Do not use alcohol- or ammonia-based liquids to clean the controller. If necessary, clean the exterior of the enclosure with a damp cloth.

7.2 Fuse replacement

Fuse replacement should only be performed by qualified personnel and power must be first switched off.

Fuses shall comply with IEC 60127 standard (time-delay fuse, low breaking capacity, 250Vac).

Procedure:

- remove the rear cover from the unit by pushing aside the four clips at the corners of the housing,
- extract the circuit from the housing,
- change the fuse shown in Figure 5/Ref. 1,
- refit all parts

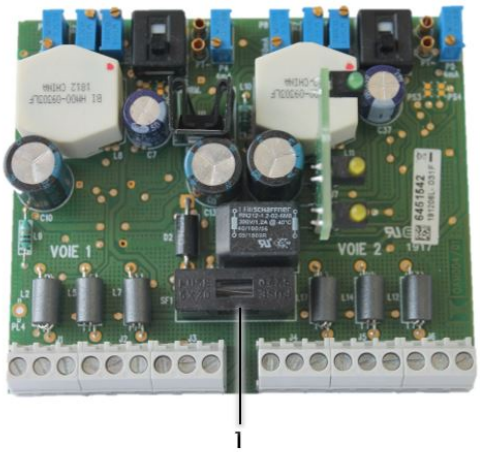


Figure 5

Description	PN
Fuse (1,25A- 250Vac)	6154624

8 Certificate of Compliance

The document hereafter (1 page) reproduces the EU declaration of conformity.

TELEDYNE OLDHAM SIMTRONICS
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DECLARATION UE DE CONFORMITÉ

EU CONFORMITY DECLARATION

Réf : UE_WB Interface_rev A.doc

Nous, *We,* **Teledyne Oldham Simtronics S.A.S.**, ZI Est, 62000 Arras France

Déclarons, sous notre seule responsabilité, que le matériel suivant :
Declare, under our sole responsibility that the following equipment :

Interface WB
WB Interface

Est conçu et fabriqué en conformité avec les Directives et normes applicables suivantes :
Is designed and manufactured in compliance with the following applicable Directives and standards:

I) Directive Européenne CEM 2014/30/UE du 26/02/14**: Compatibilité Electromagnétique**
The European Directive EMC 2014/30/UE dated from 26/02/14: Electromagnetic Compatibility

Normes harmonisées appliquées :
Harmonised applied Standards

EN 50270 : 2015 for type 1

Ce matériel ne doit être utilisé qu'à ce pour quoi il a été conçu et doit être installé en conformité avec les règles applicables et suivant les recommandations du fabricant.
This equipment shall be used for the purpose for which it has been designed and be installed in accordance with relevant standards and with manufacturer's recommendations.

A Arras, 16/04/2021/ *Arras, April 16th, 2021*

AM. Dassonville
Certification Responsible

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