

# USER MANUAL



## TRANS CAL 7270

**PORTABLE INDICATOR  
FOR LOAD CELL  
POWERED WITH BATTERIES**

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## GENERAL INFORMATION

**This manual does not constitute a contractual commitment. All the information that appears in it is subject to modifications without prior notice.**

### Packing content

With the device is also supplied:

- 4 X Battery 1,2V 1300 mAh NI-MH rechargeables, installed in its housing.
- Power adaptor 85-265V AC / 12V DC 600 mA.
- Sub-D male connector with cap.
- User Quick Start.

### Instructions for recycling



This electronic device falls within the scope of the Directive 2012/19 / EU and as such, is properly marked with the symbol that refers to the selective collection of electrical appliances that indicates that at the end of its useful life, you as user, you can not get rid of it as a normal urban waste.

To protect the environment and in accordance with European legislation on electrical and electronic waste of devices placed on the market after 13.08.2005, the user can return it, at no cost, to the place where it was purchased, so that proceed to its controlled treatment and recycling.

### General security considerations

On the TRANS CAL model 7270 devices and in this manual the risks and hazards related to safety are indicated by the following symbols:

#### Pictograms



**ATTENTION:** Possibility of danger.

Read the related instructions completely when this symbol appears in order to know the nature of the potential danger and the actions to be taken to avoid it.



**ATTENTION:** Possibility of electric shock.

#### Symbols on the device

NiMH rechargeable batteries

Alkaline batteries



**ATTENTION      ACHTUNG**

Richtige Schalterstellung schützt  
Vor Gerätedefekt!

Correct switch position protects  
Device from damages!

In the battery compartment there is a sliding switch. It is very important to put the switch in the correct position to operate with rechargeable (NiMH) or non-rechargeable (Alkaline) batteries.

After positioning the switch, place the batteries according to the chosen type, to avoid damage to the device.



## Maintenance

To ensure the accuracy of the instrument, it is advisable to verify compliance with it in accordance with the technical specifications in this manual, performing calibrations at regular time periods that will be set according to the application criteria of each application.

The calibration or adjustment of the instrument must be done by an Accredited Laboratory or directly by the Manufacturer.

The the equipment repair service must be carried out only by the manufacturer or by personnel authorized by the same.

To clean the instrument, simply wipe it with a cloth soaked in neutral soapy water. **DO NOT USE SOLVENTS!**

	 <b>DANGER</b>
	<b>Risk of electric shock</b> Disconnect the TRANS CAL 7270 from the mains socket before cleaning.

## Warranty

TRANS CAL 7270 is guaranteed against any manufacturing defect or material failure for a period of 3 YEARS from the date of purchase.



In case of observing any defect or breakdown in the normal use of the instrument during the warranty period, contact the distributor where it was purchased who will give you appropriate instructions.

This warranty can not be applied in case of misuse, connection or incorrect handling by the buyer.

The scope of this warranty is limited to the repair of the device, the manufacturer declines any other liability that could be claimed for incidents or damages caused by the instrument's malfunction.

## CE Conformity



To obtain the declaration of conformity corresponding to this model enter our website **[www.burster.com](http://www.burster.com)**, where said document, the technical manual and other information of interest can be downloaded freely.

## Environmental conditions

### Storage:

- Store at a temperature between  $-20^{\circ}\text{C}$  y  $+60^{\circ}\text{C}$
- The unit must be packed in clean packaging
- Store in a dry environment
- No condensation

### Conditions of use:

- The rated temperature range for the TRANS CAL 7270 is  $0^{\circ}\text{C}$  to  $+40^{\circ}\text{C}$
- Do **not** switch on the instrument if it is outside this temperature range, as this may damage the instrument
- Use the instrument only in an environment that lies with the specified temperature range

### Note:

The following requirements must be met when operating the TRANS CAL model 7270

- Use only in enclosed spaces
- Rated temperature range between  $0^{\circ}\text{C}$  to  $40^{\circ}\text{C}$
- Maximum height above sea level 2000 m
- Air humidity of 80% at up to  $31^{\circ}\text{C}$ , decreasing linearly above that temperature to 50% at  $T_{\text{max}}$  (no condensation)
- Class of protection: 1
- Transient overvoltage category: CAT II
- Supply voltage: 4 x AA battery or 12 V DC (see pag. 6 : Voltage supply)

### Restrictions on use:

- The TRANS CAL 7270 does not pose a hazard if used within its specifications and in accordance with the safety regulations
- The manufacturer will not accept liability for any personal injury or property damage arising from misinterpretation of measurement results.

**Note:** The TRANS CAL model 7270 is not suitable for use in the medical sector.

## Personnel

- Personnel must be familiar with the relevant regulations. They must follow this regulations.
- Only trained personnel who are familiar with the applicable safety regulations are permitted to operate the TRANS CAL model 7270.

## Description of the instrument

The model **TRANS CAL 7270** is a portable digital indicator, powered by batteries or by means of a network adapter, which allows the user to configure it in order to be used for the following types of input:



- **LOAD CELL** (mV/V)  
Strain Gauge
- |  |
|--|
| <p><b>GENERAL DATA:</b></p> <p>Dimensions : 180 x 100 x 44 mm</p> <p>Weight: 370 g</p> <p>Protection type: IP41</p> <p>Supply voltage: 12 V DC</p> <p>Nominal temperature range: 0°C ... 40°C</p> <p>Storage temperature range: -20°C ... 60°C</p> |
|--|

(for further information please see "SPECIFICATIONS" on pag.11)

## Voltage supply

The TRANS CAL model 7270 can be operated using batteries (rechargeable or non-rechargeable) or using a power adapter. Switching between the two supply options for the TRANS CAL model 7270 is done **purely electronically**

- When the adapter supplies 12V, the battery power is disconnected and the TRANS CAL 7270 is powered only from the mains adapter.
- When the adapter is disconnected, the power is provided by the battery pack that automatically reconnects.

	<b>NOTICE</b>
	<p><b>In the battery compartment there is a sliding switch that must be positioned according to the type of battery used (rechargeable or non-rechargeable).</b></p> <p>Make sure that the switch position matches the type of battery used, to avoid damaging the device.</p>



## Using rechargeable batteries NIMH

The TRANS CAL 7270 is factory equipped with rechargeable type AA batteries and the selector in the NIMH position.

**Note:** Before connecting the network adapter, make sure that the selector is in the correct position, otherwise the network adapter will not charge the batteries.

### Safety functions:

"Lo Bat" appears on the display when the supply voltage is less than 4.6 V DC

### Instrument operating periods:

With the instrument connected to a full bridge load cell with 5 V DC excitation, the power required for rechargeable batteries is around 0.5 W

	<b>NOTICE</b>
	<p>Use only <b>NIMH rechargeable batteries</b> with a capacity of <b>1300 mAh</b>. The instrument may be damaged if this recommendation is ignored.</p>

## Using rechargeable batteries NIMH

The rechargeable batteries can be charged via the network adapter supplied with the TRANS CAL 7270. The charge does not depend on whether the TRANS CAL 7270 is in On or OFF mode. You can use all the measurement functions during the charging process


**Note :** Use only rechargeable NiMH batteries with a capacity of 1300 mAh

- The time required to charge the rechargeable batteries that can be charged by the TRANS CAL 7270 is approximately 2,5 hours (1300 mAh capacity) when using the network adapter that is supplied with the equipment.
- The power consumption during charging is 7.2 W
- The charging function is switched off for safety reasons if the outside temperature is outside the range 5°C .. 50°C

We recommend using the following batteries::

Battery	Operating time until "Lo Bat"	Operating time from "Lo Bat" until switch-off
NIMH rechargeable 1300 mAh	About 10 hours	About 1 hour
Alkaline non-rechargeable 1500 mAh	About 6 hours	About 1 hour

## Using non-rechargeable batteries (Alkaline)



**NOTICE**

**In the battery compartment there is a sliding switch that must be positioned according to the type of battery used (rechargeable or non-rechargeable).**


Make sure that the switch position matches the type of battery used, to avoid damaging the device.



With the instrument connected to a full bridge load cell with 5 V DC excitation, the power required for non rechargeable batteries is around 0.5 W

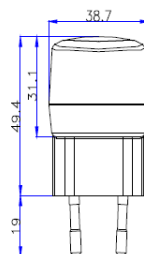
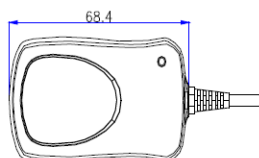
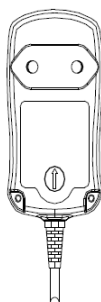
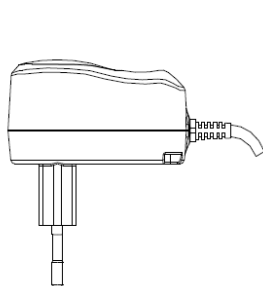
## Power Adapter

The instrument can be powered by a continuous voltage of 12 V or with the supplied mains adapter.



**DANGER**

**Risk of electric shock**  
Inspect the power adapter for damage before use.  
Do not connect the power adapter if damage is suspected.



Input voltage: 100..240 V AC  
Frequency: 50/60Hz  
No load power consumption: <0.3 W  
Input power: 10.6 W

Output voltage: 12 V DC  
Max load output current: 600 mA  
Line regulation: 0.5%  
Total output power: 7.2 W

## Battery charge

The TRANS CAL 7270 has a tricolor LED with the legend "charge status" to indicate the status of the charging process and the presence or not of the network adapter.

The tricolor LED "charge status" is only active when the network adapter is connected.

The meaning of the colors in the "charge status" led is:

"OFF"	<>	Batteries absent or faulty
"RED"	<>	Fast charge pending
"ORANGE"	<>	Fast charging
"GREEN"	<>	Fast charge complete



## ATTENTION

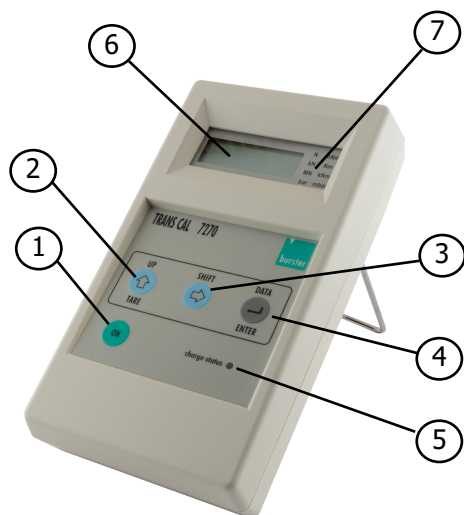


**If the "charge status" LED remains off when you connect the network adapter, disconnect the TRANS CAL 7270 and follow the instructions below to solve the problem:**

- Let the TRANS CAL model 7270 cool down
- Insert the batteries with the terminals the correct way round
- Replace the batteries

## CONTROLS AND CONNECTIONS

### Controls



KEYS :	RUN MODE	PROG MODE
1 <>	Switch ON / OFF	
2 <>	Set and reset TARE	Increase active digit
3 <>	No function	Shift active digit
4 <>	View configuration	Accept the previous value

### LED RG TRICOLOR:

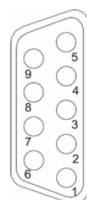
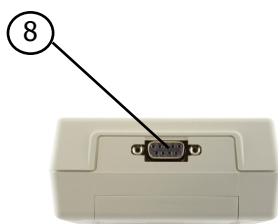
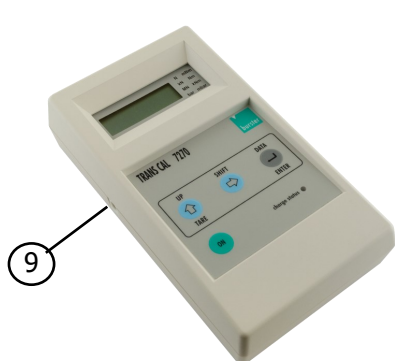
- |      |  |
|------|--|
| 5 <> | Charge status with power adapter (approx 2,5h) |
|------|--|

### DISPLAY :

- |      |  |
|------|--|
| 6 <> | Display LCD $\pm 19999$ with indication "Lo Bat"                                   |
| 7 <> | Engineering backlit unit programmable<br>N / kN / MN / bar / mbar / kNm / Nm / mNm |



## Connections



### STRAIN GAUGE CONNECTOR :

**8 <>** Sub-D female 9 pins

<b>8 &lt;&gt; (Sub-D female connector)</b>	
1	+ Excitation 5V , strain gauge
2	N.C.
3	N.C.
4	N.C.
5	- Excitation, strain gauge
6	+ Input signal (mV)
7	N.C.
8	N.C.
9	- Input signal (mV)

### SUPPLY CONNECTOR :

**9 <>** 2.1 X 5.5 mm DC power plug



<b>9 &lt;&gt; (Supply connector 2,1 x 5,5 mm)</b>	
inside	+ Voltage 12 V DC
outside	GND

## START-UP AND CONFIGURATION

### Start-up

	<p><b>DANGER</b></p>
	<p><b>Risk of electric shock</b></p> <p>Do not connect the TRANS CAL 7270 if it shows signs of damage caused by transport. Use the instrument only under the conditions specified in this manual.</p>
	<p><b>NOTICE</b></p>
	<p><b>In the battery compartment there is a sliding switch that must be positioned according to the type of battery used (rechargeable or non-rechargeable).</b></p> <p>Make sure that the switch position matches the type of battery used, to avoid damaging the device.</p>

Start-up is carried out by pressing the ON key located on the front of the instrument.

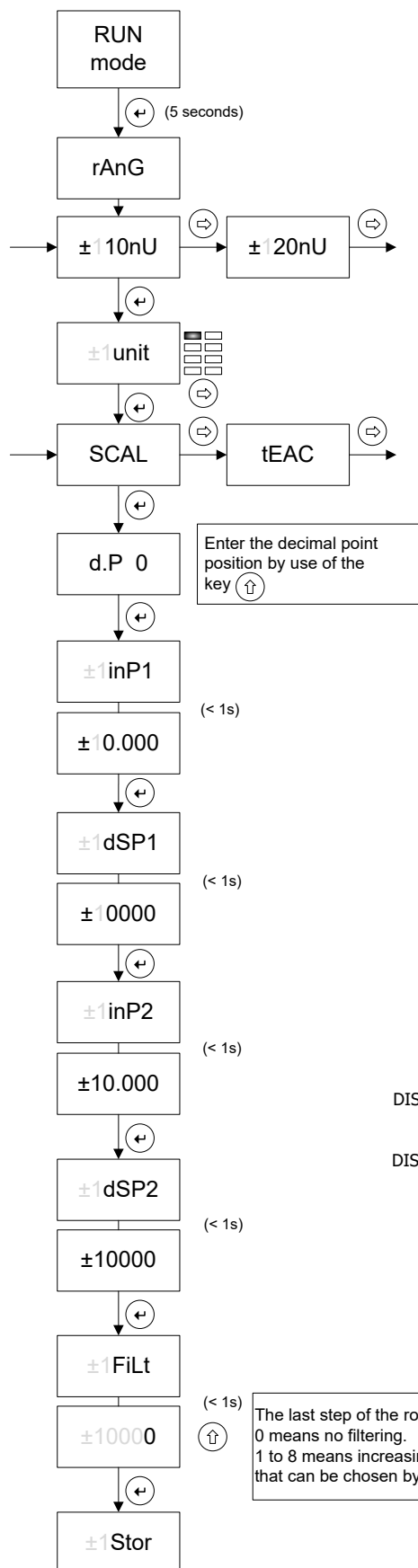
A new press of this key will cause the instrument to turn off (OFF).

If the batteries are charged it can work without connecting the mains adapter, otherwise connect the mains adapter to operate the instrument.

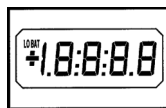
The network power adapter also charges the NiMH batteries, the charge is managed by an automatic circuit integrated in the instrument, indicating its status by means of the tricolor LED "charge status" (see page 9).

After connecting the instrument with the ON key, the display performs a self-test illuminating all the segments and LEDs of the units, then the model appears and finally the version in a sequence of 1 s for each parameter.

## Configuration



First step is to select the input range ( $\pm 10\text{mV}$  or  $\pm 20\text{mV}$ ).



Please note that the 7-segment display does not allow to write an "m", and that "nU" is the alternative.

Select the range with the  $\rightleftarrows$  key and validate with  $\leftarrow$ .

**Changes are not saved in the memory until you get to "Stor" at the end of the routine.**

Second step is the engineering unit. The display shows "unit" and the LED corresponding to the current unit goes in flash.

Select desired unit with the  $\rightleftarrows$  key.

After the unit, we must choose what type of programming we want for the display.

We can choose SCAL (for scaling with input values input) or tEAC (to take the current value as input value). (Never inP1 = inP2)

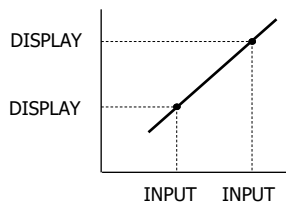
After that, there is a series of five steps to program the scaling of the display (inP1 – dSP1 – decimal point – inP2 – dSP2).

An indication flag is shown for 1s before each step and then, the value is presented with the first digit in flash.

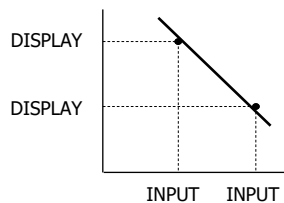
A value is programmed by using :

- $\uparrow$  to change the digit value and/or the sign
- $\rightleftarrows$  to move to the next digit at right
- $\leftarrow$  to validate the entire value

Direct



Inverse ratio



The last step of the routine is the filtering level (FiLt). 0 means no filtering. 1 to 8 means increasing levels of a low-pass filtering that can be chosen by use of the  $\uparrow$  key.

Value	Fc (Hz)	Value	Fc (Hz)
0	--	5	0.35
1	1.20	6	0.29
2	0.44	7	0.23
3	0.41	8	0.18
4	0.38		

## FUNCTIONS AVAILABLE BY KEYBOARD

In addition to the already known functions to move through the configuration menus, enter and / or modify the existing values and parameters, the equipment has some additional functions added.

### TARE Function

Pressing the TARE key the instrument realizes the absorption of the present value in the display and stores it in an internal memory, indicating at this moment zero in the display.

To indicate that the instrument is working with an absorbed tare, the sign of the display (be it positive or negative) is flashing.

To reset the TARE it is necessary to press the TARE key for 3 seconds, the value stored in memory will be added to the existing display and the signal flashing will stop.

## SPECIFICATIONS

### Technical specifications

#### ACCURACY

Temperature coefficient ..... 100 ppm/°C  
 Warm up time ..... 15 minutes  
 Range of specifications ..... 23 °C ± 5 °C

#### POWER SUPPLY TRANS CAL 7270:

Adaptader AC/DC ..... 100 to 240 V AC 50/60 Hz  
 Power ..... 10.6 W  
 Battery rechargeable NiMH ..... 4 x 1.2 V 1300 mAh  
 Indication "Lo Bat" ..... < 4.6 V DC  
 Battery non rechargeable (Alkaline) ..... 4 x 1.5 V 1200 mAh

#### CONVERSION

Technology ..... Sigma-Delta  
 Resolution ..... 16 bits  
 Cadence ..... 5/s

#### DISPLAY

Range ..... ±19999, 12.5 mm LCD  
 Decimal point ..... programmable  
 Display refresh ..... 200 ms  
 Overscale display / input indication ..... "-**OuE**", "**OuE**"

#### ENVIRONMENTAL

Operating temperature ..... 0° C a +40 °C  
 Storage temperature ..... -25 °C à +85 °C  
 Humidity (non condensed) ..... <95 % @ 40 °C  
 Maximum altitude ..... 2000 m  
 Protection degree ..... IP41

#### SUITABLE SENSORS

Type ..... Full/half Bridge  
 Bridge resistance ..... 120 Ω to 1 kΩ

#### INPUT SIGNAL

Configuration ..... Asymmetric differential  
 Input impedance: ..... 3 MΩ  
 Input signal range ..... ±10 mV / ±20 mV  
 Maximum input signal (range ±10 mV) ..... ±11 mV  
 Maximum input signal (range ±20 mV) ..... ±22 mV  
 Maximum EMI influence (±20 mV) ..... ±10 μV  
 Transducer excitation ..... 5 V@45 mA

RANGE	RESOLUTION	ACCURACY
±10 mV	1 μV	± 0.25% F.S.
±20 mV	1 μV	± 0.25% F.S.

#### FILTER

Frequency cut-out (-3dB) ..... 7.3 Hz to 0.2 Hz  
 Slope ..... -20 dB/Decade

#### DIMENSIONS

Dimensions ..... 180 x100 x 45 mm  
 Weight ..... 370 g  
 Material of the box ..... ABS s/UL 94HB



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