



HEXAGON



TESA
TECHNOLOGY

Instruction Manual



M4P-3

4 PROBES CONDITIONER WITH ANALOG OUTPUT

04130323: Interface 4 probes inputs



This document is confidential and only to be used internally by the company that has purchased one of the products mentioned above. Before duplicating or transmitting it to third parties without any connection to the use of these instruments, an official request has to be sent to TESA.

TESA TECHNOLOGY

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1 INTRODUCTION

1.1 Introduction

Dear user,

We would like to thank you for having chosen TESA as your metrology partner. We thank you for your confidence in purchasing one of our 4 probes conditioner M4P-3 with analog output.

Your metrological concerns are important to us and we are convinced that this instrument will meet your expectations. We are constantly striving to develop solutions adjusted to your needs.

The result? Your satisfaction for many years. Our pleasure? To know that our products help you meet your needs in research, development and production in a quick and efficient way, and for a long time.

The whole TESA team welcomes you to our family of TESA product users.

Your TESA team

1.2 Warning

This instruction manual must be read by every technician or operator before the installation, maintenance or use of the instrument. Not adhering to certain instructions regarding its use could lead to malfunction or deterioration of the instrument.

1.3 Copyright (document)

The content of this document has been created subject to subsequent modifications without prior notice. All modification rights are reserved.

The English version is the reference. For other language, please contact us.

1.4 Preamble

The M4P-3 is a compact conditioner module for half-bridge type sensors, powered by an external 24VDC power supply. The robust construction is made in an extruded aluminium for mechanical and electromagnetical properties.

The module is designed to be mounted on a standard DIN rail 7x35mm.

This document describes the different procedures to be followed in order to allow for a quick and easy handling of our M4P-3.



1.5 Symbols

Several different types of symbols are used in this manual. They give important information that has to be taken into account in order to correctly use the measuring instrument.

Position	Description
	Not adhering to these instructions can lead to incorrect measurement results.
	Corresponds to an assistance for better use.

2 PRESENTATION

2.1 General description

The M4P-3 is a conditioner module for TESA half-bridge type sensors.

Power supply is 24VDC (+/-9VDC), from an external power supply.



The robust construction is made in an extruded aluminium for mechanical and electromagnetical properties.

The module is designed to be mounted on a standard DIN rail 7x35mm (not supplied).



2.2 Operation/ Short description

Possibility to connect power supply 24 VDC(+/-9VDC)

or

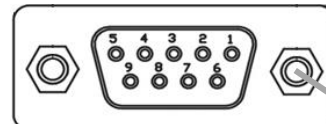
External power supply
100-240V/50-60Hz to 15VDC
code 04760153
(to be ordered separately)



Output type IEC 60320 C14

DIN connection
for probes (x4)

Signal output (Sub D 9p-Female)



UNC 4-40
threadings

PIN	OUTPUT
1	Output probe channel 1
2	Output probe channel 2
3	GROUND
4	Output probe channel 3
5	Output probe channel 4
6	Not connected
7	GROUND
8	GROUND
9	Not connected

2.3 Dimensions

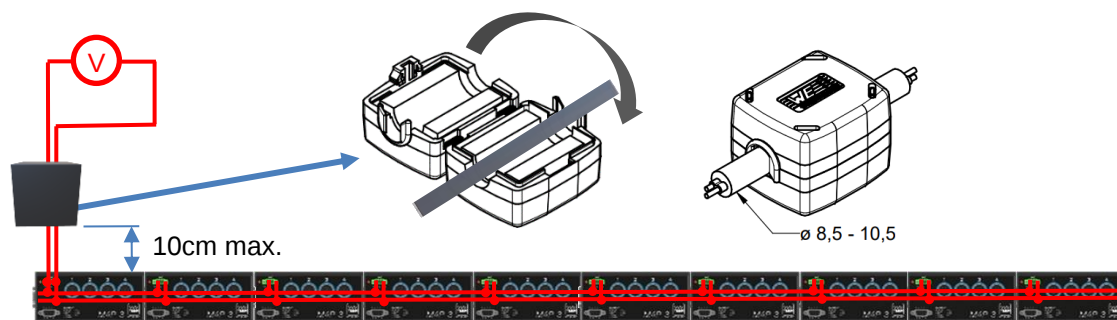


2.4 Power supply

Possibility to connect up to 10 modules with same power supply as modules are interconnected.

- External power supply (i.e PLC output):

Please, close the ferrite filter (delivered in the box) until the clip snaps in.



- External power supply 100-240V/50-60Hz to 15VDC code S48001719



3 SPECIFICATIONS

- Power supply: 24VDC +/-9 VDC
- Power consumption per module: 0,1A max.
- Working temperature: 0°C – 40°C
- Storage temperature: -20°C – 85°C
- Probe connection type: DIN connector (5pin)
- Gain adjustment preset: 1V/mm in standard

Possibility to set 2.5, 5 or 10V/mm (see chapter 4)

- Measuring Error Gain = 1: $\pm$ (1% of the measured value + 1 μ m)
- Measuring Error Gain > 1: $\pm$ (1,5% of the measured value + 1 μ m)

4 GAIN ADJUSTMENT



!!!Caution!!!

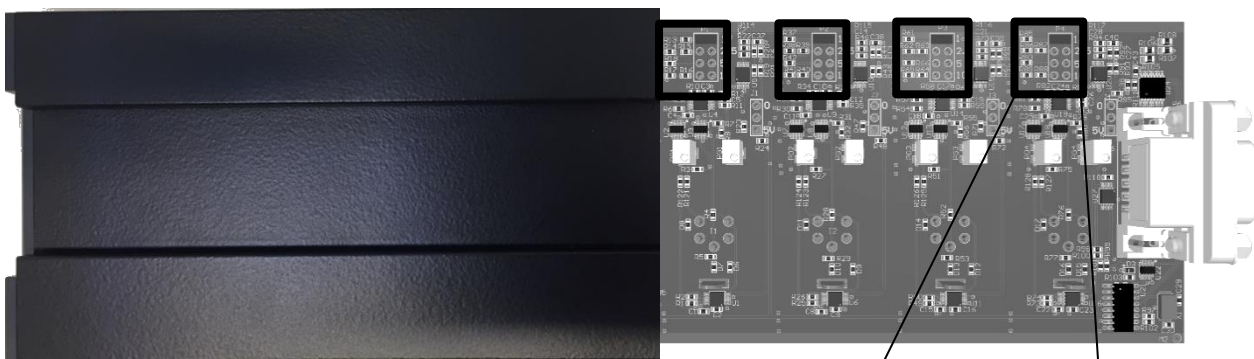
Do not open the box with power supply

!!!Caution!!!

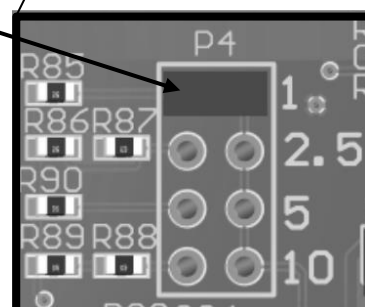
1. Dismount the cover carefully (4 screws TORX).



2. Remove the electronic card.



3. Put the jumper in the desired gain for each channel:
1V/mm (standard), 2.5V/mm, 5V/mm or 10V/mm.



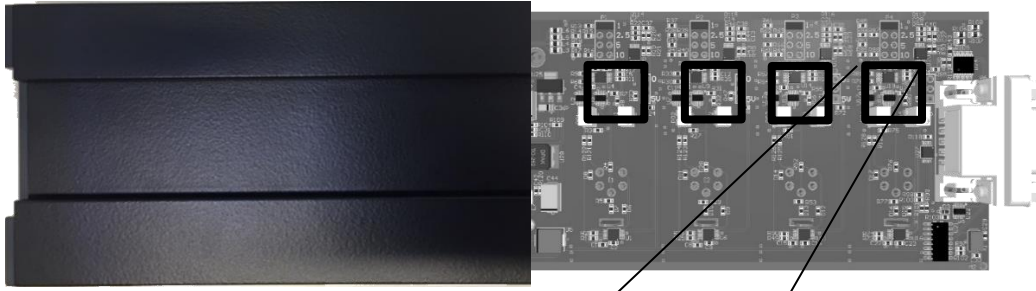
4. Mount electronic card and cover before use.

Example of the output signal according to the probes and selected gain:

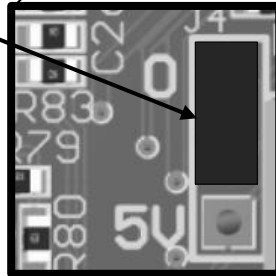
Compatible Probes code	Designation	NOMINAL output signal for 100 μ m stroke from 0			
		Gain = 1	Gain = 2,5	Gain = 5	Gain = 10
03210904	GT 21 $\pm$ 1 mm	100 mV	250 mV	500 mV	1000 mV
03210924	GT 22 $\pm$ 1 mm	100 mV	250 mV	500 mV	1000 mV
03230057	GTL 21 $\pm$ 2 mm	100 mV	250 mV	500 mV	1000 mV
03230072	GTL 211 $\pm$ 2 mm	100 mV	250 mV	500 mV	1000 mV
03230056	GTL 22 $\pm$ 2 mm	100 mV	250 mV	500 mV	1000 mV
03230027	GT 27 $\pm$ 2 mm	100 mV	250 mV	500 mV	1000 mV
03230073	GT 271 $\pm$ 2 mm	100 mV	250 mV	500 mV	1000 mV
03230026	GT 28 $\pm$ 2 mm	100 mV	250 mV	500 mV	1000 mV
03230041	GT 61 $\pm$ 5 mm	40 mV	100 mV	200 mV	400 mV
03230042	GT 62 $\pm$ 5 mm	40 mV	100 mV	200 mV	400 mV
03230036	GT 21 HP $\pm$ 0,2 mm	100 mV	250 mV	500 mV	1000 mV
03230021	GT 22 HP $\pm$ 0,2 mm	100 mV	250 mV	500 mV	1000 mV
03230060	GTL 212 $\pm$ 1,5 mm	100 mV	250 mV	500 mV	1000 mV
03230054	GTL 222 $\pm$ 1,5 mm	100 mV	250 mV	500 mV	1000 mV
03230067	GTL 212-A $\pm$ 1,5 mm	100 mV	250 mV	500 mV	1000 mV
03230063	GTL 222-A $\pm$ 1,5 mm	100 mV	250 mV	500 mV	1000 mV
03230061	GT 272 $\pm$ 2 mm	100 mV	250 mV	500 mV	1000 mV
03230053	GT 282 $\pm$ 2 mm	100 mV	250 mV	500 mV	1000 mV
03230068	GT 272-A $\pm$ 2 mm	100 mV	250 mV	500 mV	1000 mV
03230069	GT 282-A $\pm$ 2 mm	100 mV	250 mV	500 mV	1000 mV
03230062	GT 612 $\pm$ 5 mm	40 mV	100 mV	200 mV	400 mV
03230055	GT 622 $\pm$ 5 mm	40 mV	100 mV	200 mV	400 mV
03230070	GT 612-A $\pm$ 5 mm	40 mV	100 mV	200 mV	400 mV
03230071	GT 622-A $\pm$ 5 mm	40 mV	100 mV	200 mV	400 mV
03230001	GT 41 $\pm$ 0,3 mm	100 mV	250 mV	500 mV	1000 mV
03230002	GT 42 $\pm$ 0,3 mm	100 mV	250 mV	500 mV	1000 mV
03230035	GT 43 $\pm$ 1 mm	100 mV	250 mV	500 mV	1000 mV
03230017	GT 44 $\pm$ 1 mm	100 mV	250 mV	500 mV	1000 mV
03230019	FMS 100 $\pm$ 2 mm	100 mV	250 mV	500 mV	1000 mV
03230049	FMS 130 $\pm$ 2,9 mm	66,66 mV	166,66 mV	333,33 mV	666,66 mV
03230028	FMS 102 $\pm$ 2 mm	100 mV	250 mV	500 mV	1000 mV
03230050	FMS 132 $\pm$ 2,9 mm	66,66 mV	166,66 mV	333,33 mV	666,66 mV

5 OFFSET SETTINGS

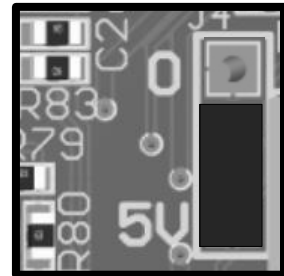
1. Remove the electronic card.



2. Put the jumper in the desired offset for each channel:
0V (in standard) or 5V.



Jumper for
0V offset



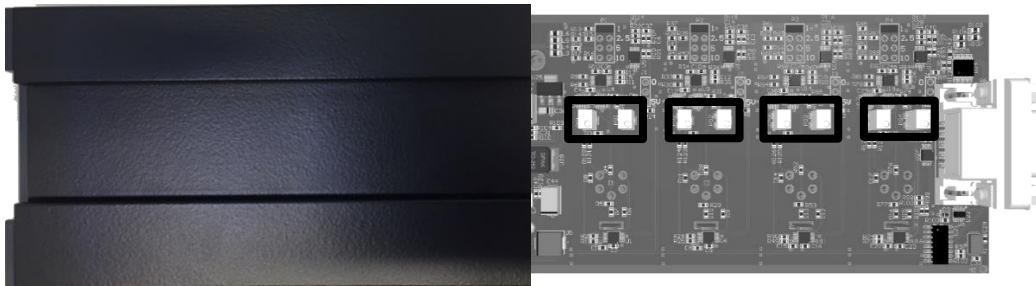
Jumper for
5V offset

3. Mount electronic card and cover before use

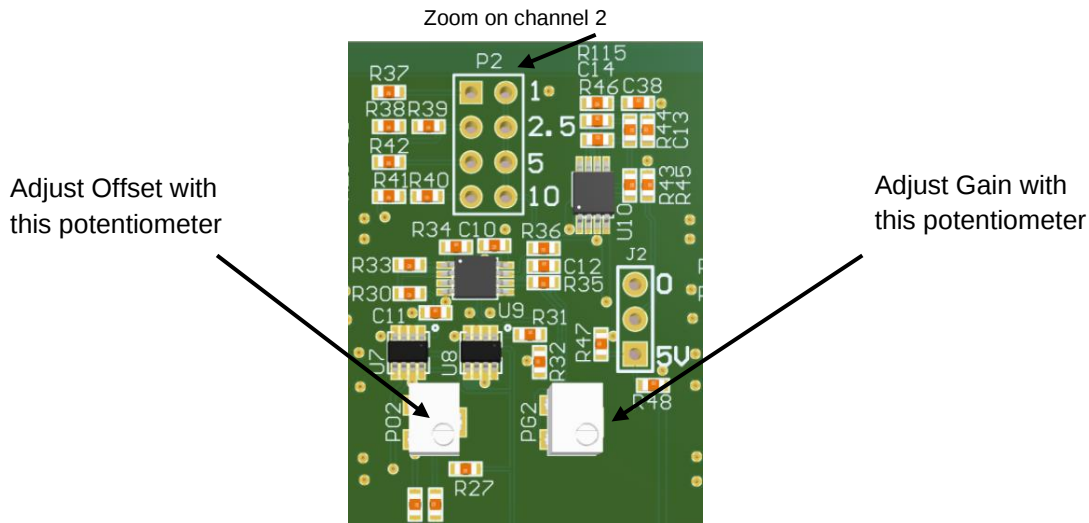
6 SETTINGS OFFSET AND GAIN (ADVANCED USER)

!!!Caution!!! This operation may impact values delivered in the certificate **!!!Caution!!!**

1. Remove the electronic card.



2. Adjust Gain and Offset for the dedicated channel.



3. After adjustments, control metrology specifications with masters or appropriate devices.

4. Mount electronic card and cover before use

7 DECLARATION OF CONFORMITY

We thank you for your confidence in purchasing this product. We hereby certify that it was inspected in our works.

We declare under our sole responsibility that its quality is in conformity with all technical standards and data as specified in our sales literature (instruction manual, leaflet, website).

In addition, we certify that the measuring equipment used to check this product refers to national standards. The traceability is ensured by our Quality Assurance system.

Quality Assurance

8 WARRANTY

TESA shall remediate any operating defects resulting from a manufacturing defect, within the limit of the following provisions. The regular warranty shall cover the first year from the date of sale.

In justified warranty cases, TESA shall choose one of the following services:

- free repair by TESA or a TESA-certified service shop, or
- free replacement, or
- credit note for the product subject to the claim.

All other services or compensation under a warranty claim are excluded.

The warranty shall not cover any damage resulting from incorrect, incompetent or negligent use, a maintenance defect or failure, external influences, failure to comply with service instructions, or any other hazard, including cases of force majeure.

(Extract from our general sales conditions 2012 edition)