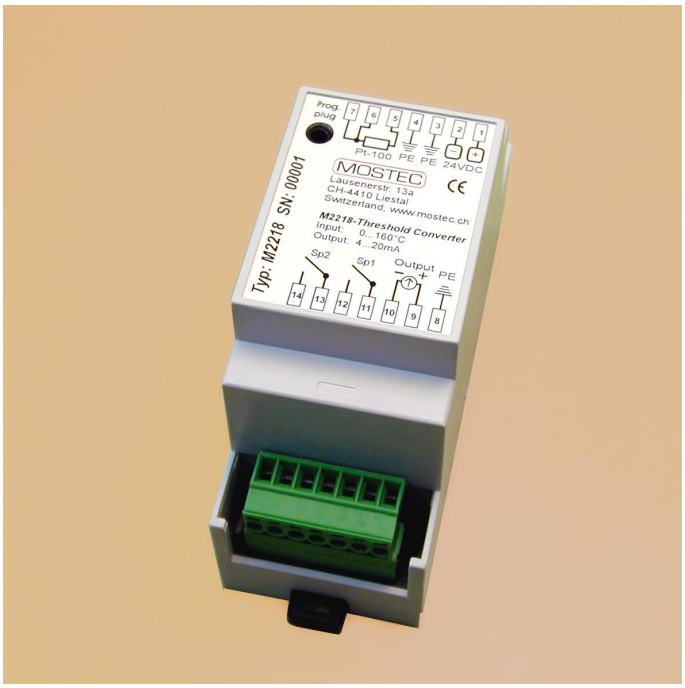
MOSTEC AG
Elektronische Mess- und Regelsysteme
CH-4410 Liestal, Switzerland
TEL. +41 61 921 40 90
FAX +41 61 921 40 83
Internet: www.mostec.ch
E-Mail: info@mostec.ch

MOSTEC



Operating Manual

Threshold Converter

M2218A (T)

Warranty

Mostec warrants this product to be free of manufacturing defects for a 2-year period after the original date of purchase. Within this period, defective products will be repaired free of charge provided that the defect occurred during normal operation. This warranty does not cover damage to the product resulting from ordinary usage such as front panel scratches, broken control elements and corrosion, etc. The customer is responsible for shipping and packing charges for products returned under warranty to Mostec. Mostec warrants this product beyond the 2-year warranty period for an additional 2 years in case of long term damages due to improper manufacturing. Such damages as poorly soldered joints or other assembly problems are also covered by the warranty. Transportation damages are not covered by the warranty and should be referred to the respective delivery service.

Technical description

The threshold converter M2218 is used to check or control either a signal current or a temperature. A Pt-100 platinum sensor in 3-wire mode can be connected to the unit. It converts the input signal to an internal standard signal of 0 to 100.0%. Two independent limit contacts can be set within this range.

All settings as limit values, hysteresis, range and operating mode of the contacts can be set with a PC-program.

The unit may be programmed to customers values or ranges by the factory.

A typical application would be to measure and monitor pressure in a process vessel:
A pressure transmitter converts the pressure of 1 to 10 bar to a current signal of 4 to 20mA. The M2218 monitors under- and overpressure in the vessel. It converts the 4...20mA signal current to 0...100.0%. The alarm is set between 0% (=1 bar) and 100.0% (=10 bar). With these floating alarm contacts, overpressure valves, compressor relays, etc. are driven directly.

If a Pt-100 sensor is connected to the input, the unit works as a temperature monitor or as a simple temperature controller.

Optionally a galvanically isolated output signal of 4...20mA is available.

The 24VDC power supply is galvanically isolated from the input circuit and the output current source.

Index: **Page**

A	Set the limit contacts	4
B	Set the current output	4
C	Fine adjust the input amplifier	5
D	General references using the programming software "M*pro*"	5
E	Installation of programming software "M*pro*"	6-7
F	Technical data	8

A. Set the limit contacts

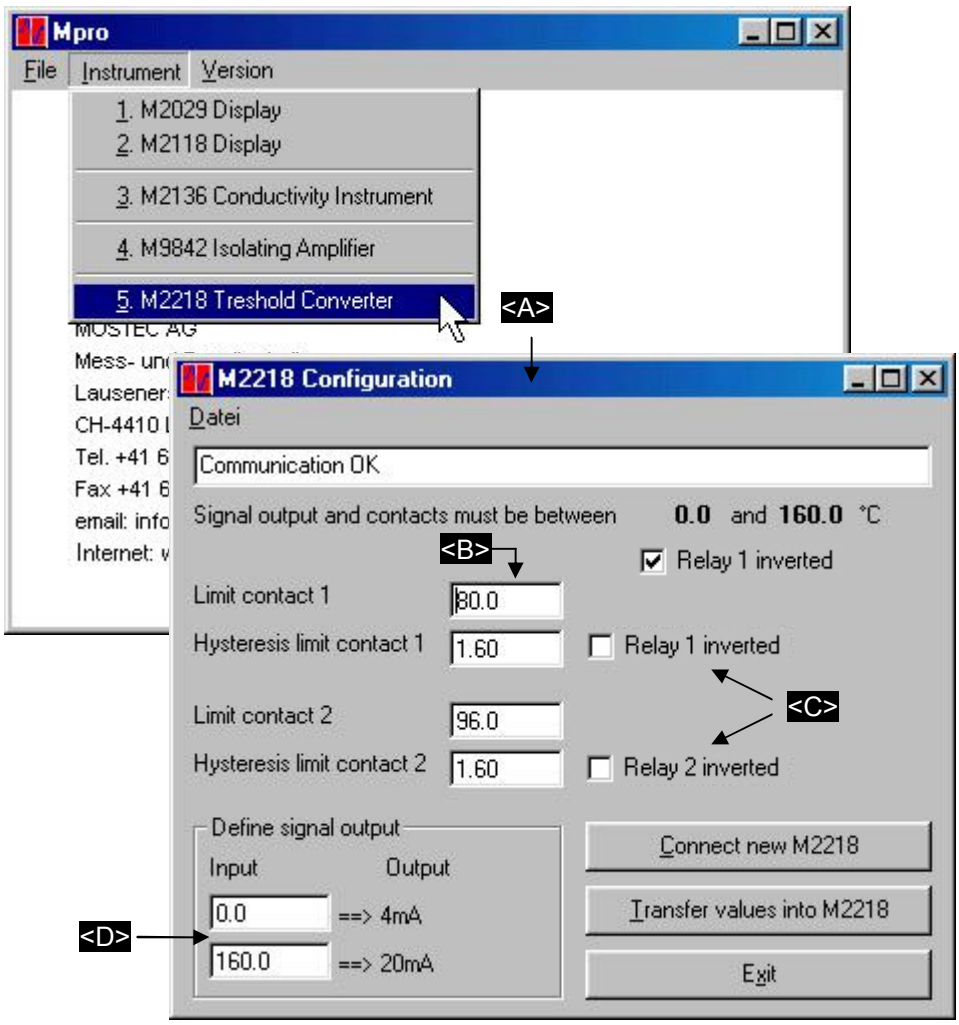
Connect the link cable to the Computer and the M2218. (see D, page 5)

1. start "M*pro*"
2. Choose "M2218 Threshold converter" in menu "Instrument" <A>
3. Enter the values for the limit contacts and the hysteresis <B>
4. Set relay operating mode <C>
   - ☐ Relay 1 inverted Relay ON, when input > setpoint (normally open contact closed)
   - ☑ Relay 1 inverted Relay ON, when input < setpoint (normally open contact open)
5. Choose "Program values"

B. Set the current output

Connect the link cable to the Computer and the M2218. (see D, page 5)

1. start "M*pro*"
2. Choose "M2218 Threshold converter" in menu "Instrument" <A>
3. Enter the values for the current output <D>
4. Choose "Transfer values into M2218"



C. Fine adjust the input amplifier

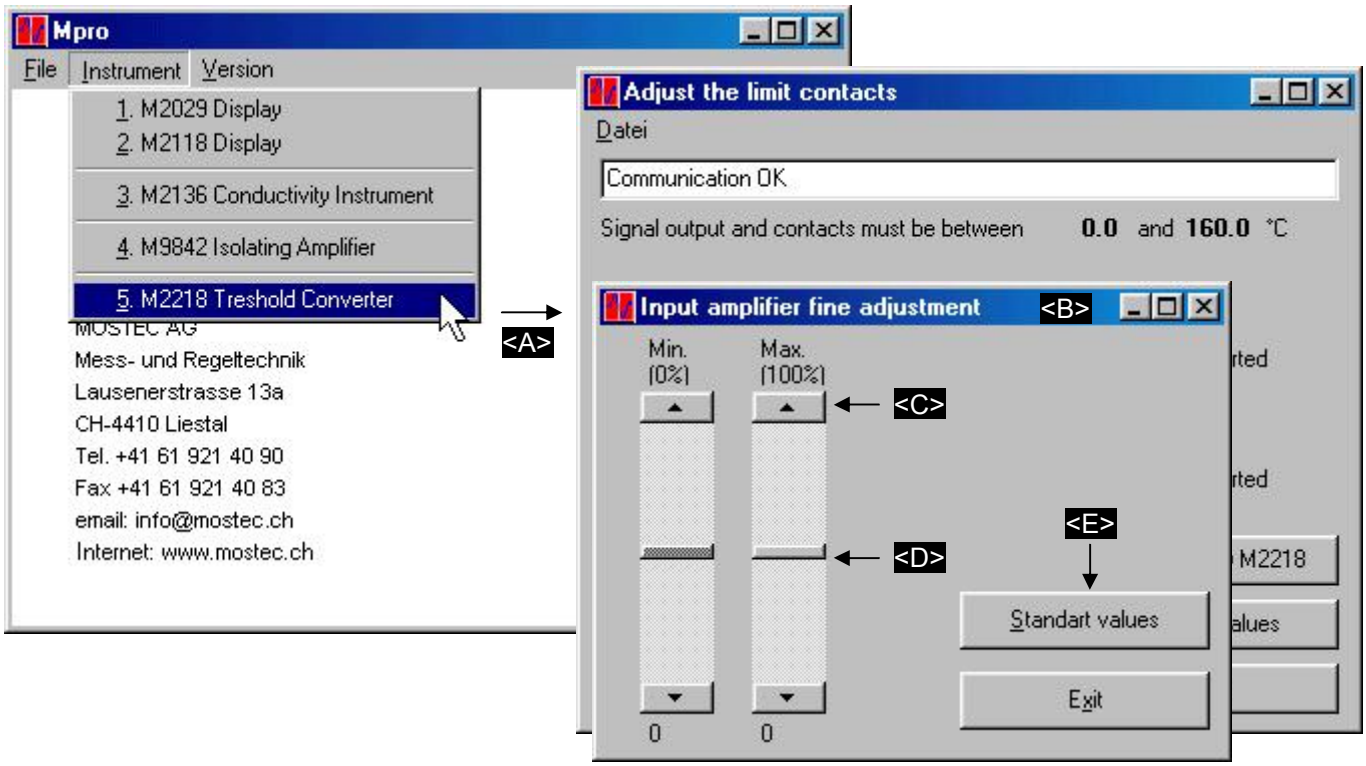
Caution: This option changes the factory settings!

⇒ *The following instruments are necessary:*
1. *Current source or temperature simulator*
2. *Digital mA-meter*

⇒ *Press button "Standart values" <E> to restore the factory settings*

Connect the link cable the computer and the M2218. (see D, page 5)

1. start "M*pro*"
2. Choose "M2218 Threshold converter" in menu "Instrument" <A>
3. Press the keyboard combination Shift+Crtl+F ⇒ The display shows the fine adjustment menu <B>
4. Change the min. and max. values by the up and down arrows <C> or by scroll bars <D>
5. Choose "Exit"



D. General references using the programming software

- The latest software may be downloaded any time and free of charge at www.mostec.ch.
- Connect the M2218 to the power supply for programming.
- Make sure that the connected COM-port is not used by any other peripherial device or software.
- If the PC or the corresponding COM-port is "grounded" by the power line cable or by other cables: Ground loops may interfere with the measuring signal. The use of a computer with battery power or a galvanically isolated programming cable from Mostec is recommended to avoid such problems.
- Contact us if there are problems or questions concerning the software.

E. Installation of programming software "M*pro*"

System requirements

Pentium PC
Windows 95/98/NT4.0/2000/XP®
unused RS232-DB9 Port
64MB RAM
5MB unused hard disc

Non-liability

The company Mostec AG developed and tested the software "Mpro" with largest care. Mostec is not responsible for any damages whatsoever, including loss of information, interruption of business, personal injury and/or any damage or consequential damage without limitation, incurred before, during or after the use of our products.

General references

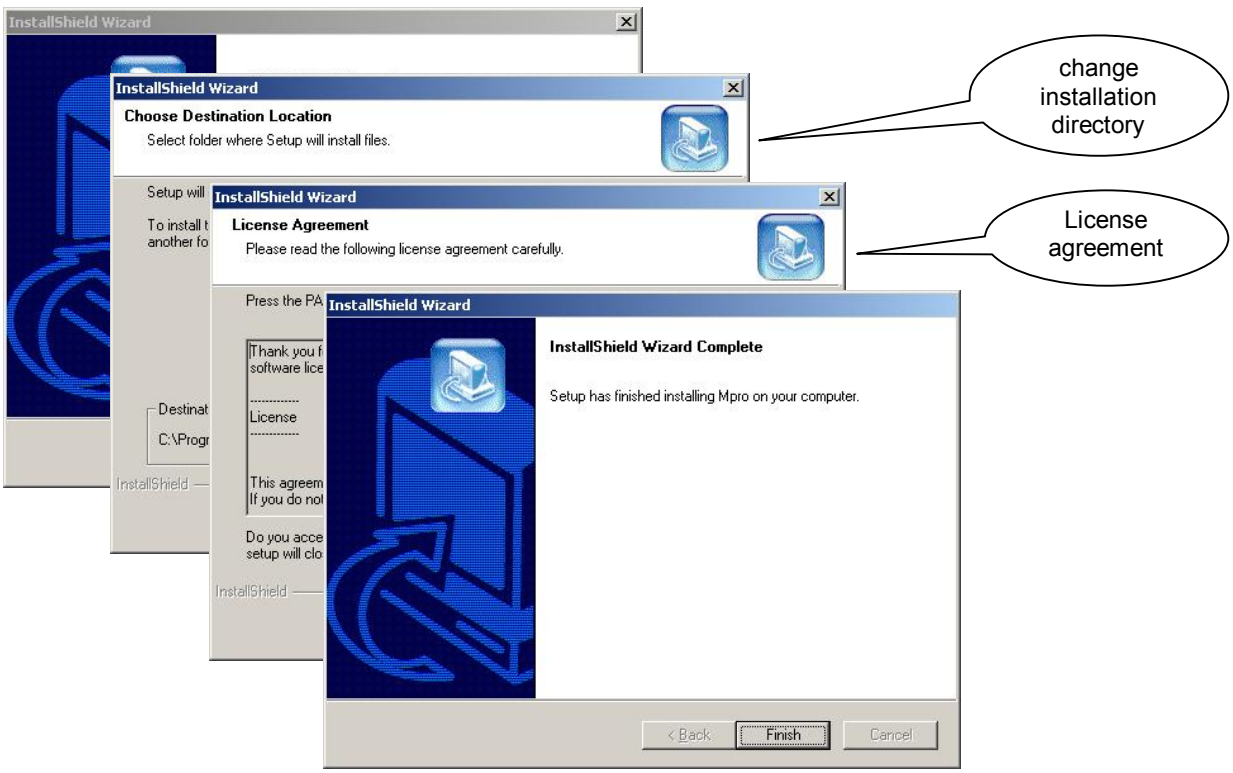
Close all open programs, before beginning the installation.
For installation under Windows NT/2000/XP, administrator rights are necessary.
The newest software may be downloaded any time and free of change at "www.mostec.ch/software.htm".
Mostec also supplies the program on CD-ROM.

Mpro installation

1. Installation with CD-ROM
   Put the CD-ROM in the CD-ROM drive, "Mpro-Setup" starts automatically, otherwise "Setup_Mpro.exe" must be started manually in the main directory of the CD-ROM drive.

1.1 Installation without CD-ROM
   The newest software may be downloaded any time and free of charge at "www.mostec.ch/software.htm".
   Start the file "Setup_Mpro.exe".

2. The installation is now implemented.
   The user will be guided by the menus, until the installation is finished.



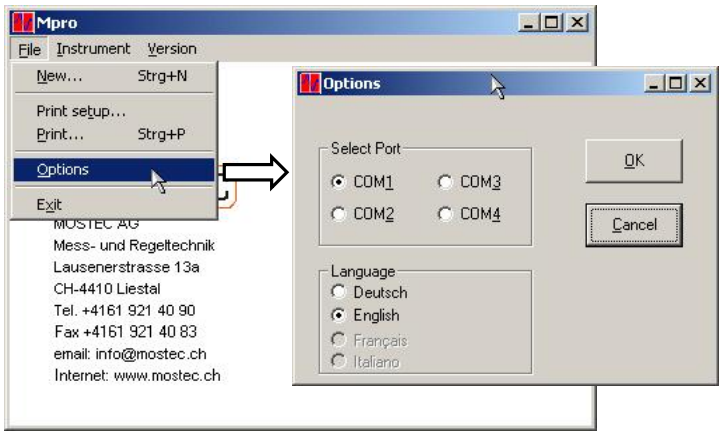
3. A "Mpro" Icon will be installed on the desktop to start the program "Mpro".
   or via "*Start ⇒ Program Files ⇒ Mostec ⇒ Mpro*".

Mpro uninstall

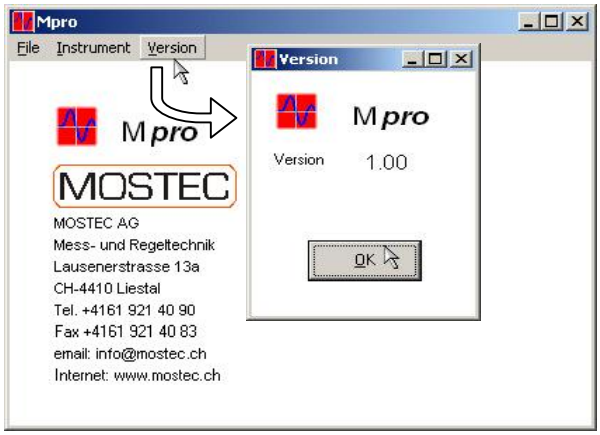
1. "Mpro" can be uninstalled at any time by "*Start ⇒ Settings ⇒ Control Panel ⇒ Software ⇒ Mpro*".

Mpro configuration

1. Set the "COM-Port" and "Language" in the menu "File/Options".



2. Click "Version" to see the installed program version.



F. Technical Data

Input signal:	M2218-A: 4...20mA M2218-T: Pt-100 platinum sensor with 3-wire connection, temperature range: 0...160°C
Input load:	M2218-A: 51Ω
Accuracy :	±0.2% at 23°C ambient temperature
Reproducibility:	±0.1%
Temperature coefficient:	zero drift: 50ppM/°C typical, gain drift: 50ppM/°C typical
Long-term stability:	±0.2%
Working temperature range:	-5 to +45°C
Maximum humidity:	95%, non-condensing
Programming:	with a programming cable to a front panel miniature plug
Limit contacts:	two, adjustable between 0.0 and 100.0%
Hysteresis:	computer programmable, see manual
Contacts:	floating normally open contacts
Max. contact load:	1A/48V resistive
Change limit contacts:	computer programmable, see manual
Display limit contacts:	computer programmable, see manual
Current output:	4...20mA, galvanically isolated
Max. load:	<400Ω
Output impedance:	>1MΩ typical
Power supply:	24VDC, ±15%
Power supply load:	<2.5W at 24VDC
CE-conformity:	fulfilled
Terminals:	2 x 7-pole plug-in screw terminals

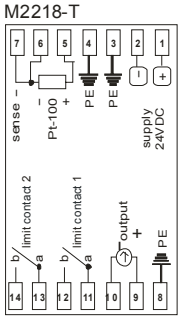
Terminal description:

1 = supply voltage: 24VDC(+)	2 = supply voltage: 24VDC(-)
3 = supply voltage: PE	4 = signal input PE
5 = M2218-T: input Pt-100 (+) M2218-A:input 4...20mA (+)	6 = M2218-T: input Pt-100 (-) M2218-A: input 4..20mA (-)
7 = M2218-T: Pt-100 sense (-) M2218-A: not used	8 = signal output PE
9 = output 4...20mA: (+)	10 = output 4...20mA: (-)
11 = limit contact 2: (a)	12 = limit contact 2: (b)
13 = limit contact 1: (a)	14 = limit contact 1: (b)

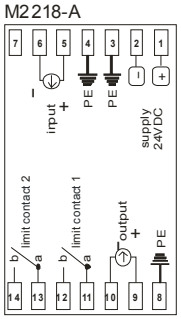
Case:	DIN-standard case to DIN 46277 rails (L x W x H) 90 x 36 x 58mm
Mounting:	Snap-on to DIN46277 rails, min. distance from one instrument to the next: 5mm
Weight:	~90g
Warranty:	2 years

Wireing:

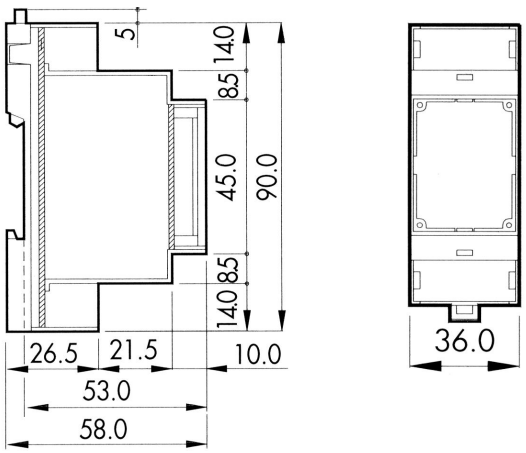
M2218-T



M2218-A



Dimensions (mm):



V1.00 22.10.02

© 2002 MOSTEC AG