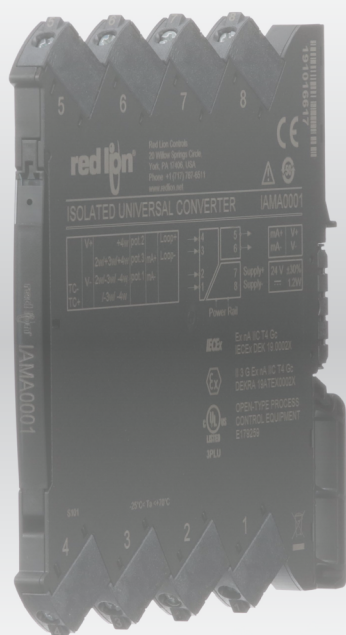


Product Manual

IAMA

Isolated universal converter



Model No. IAMA0001
Drawing No. LP1101
Version No. 102
Revision Date 19/06



Isolated universal converter IAMA

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Warning



GENERAL

To avoid the risk of electric shock and fire, the safety instructions of this guide must be observed and the guidelines followed. The specifications must not be exceeded, and the device must only be applied as described in the following. Prior to the commissioning of the device, this installation guide must be examined carefully. Only qualified personnel (technicians) should install this device. If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired. Until the device is fixed, do not connect hazardous voltages to the device.

To avoid explosion and serious injury: Modules having mechanical failures must be returned to Red Lion Controls for repair or replacement.

Repair of the device must be done by Red Lion Controls only.

Warning



**HAZARDOUS
VOLTAGE**

In applications where hazardous voltage is connected to in-/outputs of the device, sufficient spacing or isolation from wires, terminals and enclosure - to surroundings (incl. neighboring devices), must be ensured to maintain protection against electric shock.

The connector behind the front cover of IAMA is connected to the input terminals on which dangerous voltages can occur.



CAUTION

Potential electrostatic charging hazard. To avoid the risk of explosion due to electrostatic charging of the enclosure, do not handle the units unless the area is known to be safe, or appropriate safety measures are taken to avoid electrostatic discharge.

Symbol identification



Triangle with an exclamation mark: Read the manual before installation and commissioning of the device in order to avoid incidents that could lead to personal injury or mechanical damage.



The CE mark proves the compliance of the device with the essential requirements of the directives.



Ex devices have been approved acc. to the ATEX directive for use in connection with installations in explosive areas.

Safety instructions

Receipt and unpacking

Unpack the device without damaging it and check whether the device type corresponds to the one ordered. The packing should always follow the device until this has been permanently mounted.

Environment

Avoid direct sun light, dust, high temperatures, mechanical vibrations and shock, and rain and heavy moisture. If necessary, heating in excess of the stated limits for ambient temperatures should be avoided by way of ventilation.

The device can be used for Measurement Category II and Pollution Degree 2.

The device is designed to be safe at least under an altitude up to 2000 m.

Mounting

Only technicians who are familiar with the technical terms, warnings, and instructions in the manual and who are able to follow these should connect the device.

Should there be any doubt as to the correct handling of the device, please contact your local distributor or, alternatively,
Red Lion Controls
www.redlion.net

Mounting and connection of the device should comply with national legislation for mounting of electric materials, i.e. wire cross section, protective fuse, and location.

Descriptions of input / output and supply connections are shown in this installation guide and on the side label.

The device is provided with field wiring terminals and shall be supplied from a Power Supply having double / reinforced insulation. A power switch should be easily accessible and close to the device. The power switch shall be marked as the disconnecting unit for the device.

The device must be mounted on a DIN rail according to EN 60715.

UL installation

Use 60/75°C copper conductors only.
Wire size. AWG 26-12
UL file number E179259

The device is an Open Type Listed Process Control Equipment. To prevent injury resulting from accessibility to live parts the equipment must be installed in an enclosure.

The power Supply unit must comply with NEC Class 2, as described by the National Electrical Code® (ANSI / NFPA 70).

In class I, Division 2 or Zone 2 installations, the subject equipment shall be mounted within a tool-secured enclosure which is capable of accepting one or more of Class I, Division 2 wiring methods specified in the National Electrical Code (ANSI/NFPA 70) or in Canada in the Canadian Electrical Code (C22.1).

The Isolators and Converters must be connected to limited output NEC Class 2 circuits, as outlined in the National Electrical Code® (ANSI / NFPA 70), only. If the devices are connected to a redundant power supply (two separate power supplies), both must meet this requirement.

Where installed in outdoor or potentially wet locations the enclosure shall at a minimum meet the requirements of IP54.

Warning: Substitution of components may impair suitability for zone 2 / division 2.

Warning: To prevent ignition of the explosive atmospheres, disconnect power before servicing and do not separate connectors when energised and an explosive gas mixture is present.

Warning: Do not mount or remove devices from the power rail when an explosive gas mixture is present.

IECEX, ATEX installation in Zone 2

IECEX DEK 19.0002 X Ex nA IIC T4 Gc
DEKRA 19ATEX0002 X II 3G Ex nA IIC T4 Gc

For safe installation the following must be observed. The device shall only be installed by qualified personnel who are familiar with the national and international laws, directives and standards that apply to this area.

Year of manufacture can be taken from the first two digits in the serial number.

The devices shall be installed in a suitable enclosure providing a degree of protection of at least IP54 according to EN60529, taking into account the environmental conditions under which the equipment will be used.

When the temperature under rated conditions exceeds 70°C at the cable or conduit entry point, or 80°C at the branching point of the conductors, the temperature specification of the selected cable shall be in compliance with the actual measured temperature.

Provisions shall be made to prevent the rated voltage from being exceeded by transient disturbances of more than 40%.

To prevent ignition of the explosive atmospheres, disconnect power before servicing and do not separate connectors when energised and an explosive gas mixture is present.

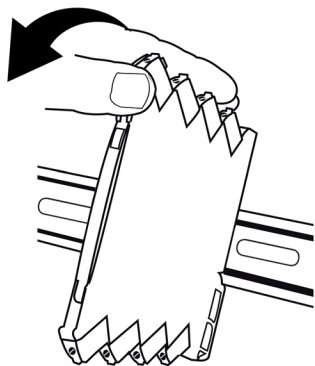
Cleaning

When disconnected, the device may be cleaned with a cloth moistened with distilled water.

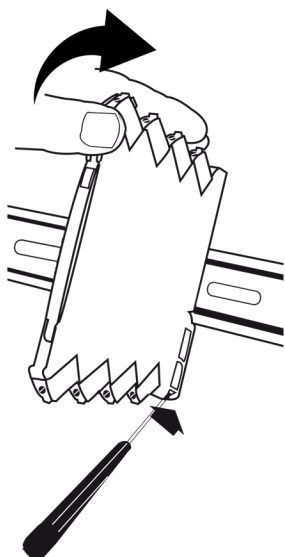
Liability

To the extent the instructions in this manual are not strictly observed, the customer cannot advance a demand against Red Lion Controls that would otherwise exist according to the concluded sales agreement.

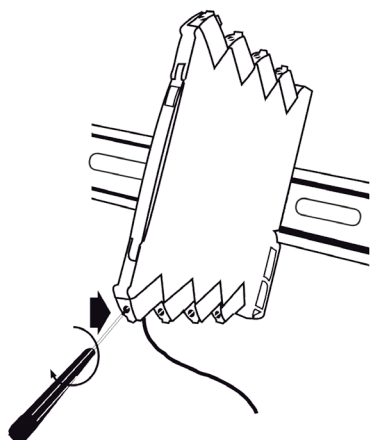
Mounting and demounting of the device



Picture 1:
Mounting on DIN rail.
Click the device onto the rail.



Picture 2:
Demounting from DIN rail.
First, remember to demount the connectors with hazardous voltages.
Detach the device from the DIN rail by lifting the bottom lock.



Picture 3:
Wire size AWG 26-12 / 0.13 x 2.5 mm² stranded wire.
Screw terminal torque 0.5 Nm.

Installation on DIN rail



The IAMA can be installed on a DIN rail.

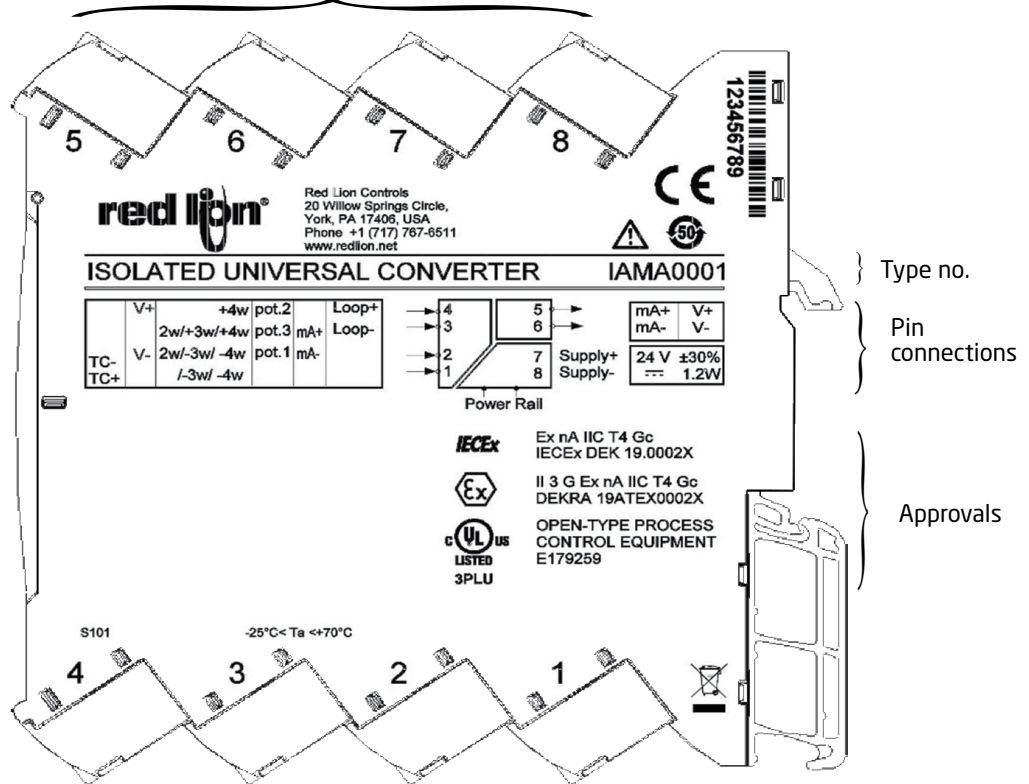
Marking

The front cover of the IAMA has been designed with an area for affixation of a click-on marker. The area assigned to the marker measures 5 x 7.5 mm. Markers from Weidmüller's MultiCard System, type MF 5/7.5, are suitable.



Side label

Terminal numbers



Isolated universal converter

IAMA

- Input for RTD, TC, Ohm, potentiometer, mA and V
- 2-wire supply > 15 V
- I.S. approvals: ATEX Zone 2, IECEx Zone 2
- Output for current and voltage

Advanced features

Programmable by way of detachable display front PGM and Programming Module, process calibration, signal simulation, password protection, error diagnostics and help text available in several languages.

Applications

- Linearised, electronic temperature measurement with RTD or TC sensor.
- Conversion of linear resistance variation to a standard analog current / voltage signal, i.e. from solenoids and butterfly valves or linear movements with attached potentiometer.
- Power supply and signal isolator for 2-wire transmitters.
- Process control with standard analog output.
- Galvanic separation of analog signals and measurement of floating signals.

Technical characteristics

- When IAMA is used in combination with the PGM display / programmer front and Programming Module, all operational parameters can be modified to suit any application. As the IAMA is designed with electronic hardware switches, it is not necessary to open the device for setting of DIP-switches.
- A green front LED indicates normal operation and malfunction.
- Continuous check of vital stored data for safety reasons.
- 3-port 2.5 kVAC galvanic isolation.

Product overview

Part no.	IAMA0001
Product name	Isolated universal converter
Description	Universal DC / DC and temperature converter with loop supply output
Parameterisation	PGM / Programming Module
Input signal	RTD, TC and potentiometer 2-, 3-, and 4-wire 0...10 V 0...20 mA
Sensor type	All standard Pt, Ni, TC
CJC sensor	Internal Pt100
Loop supply output	> 15 V @ 20 mA
Output signal (active)	0...20 mA / 0...10 V
Approvals	UL, safety / ATEX zone 2 / IECEx Zone 2 /

PGM display / programmer front



Functionality

The simple and easily understandable menu structure and the explanatory help texts guide you effortlessly and automatically through the configuration steps, thus making the product very easy to use. Functions and configuration options are described in the section "Configuration / operating the function keys".

Application

- Communications interface for modification of operational parameters in IAMA.
- Can be moved from one IAMA device to another and download the configuration of the first unit to subsequent units.

Technical characteristics

- LCD display with 4 lines:
 - Line 1 (H=5.57 mm) shows input signal.
 - Line 2 (H=3.33 mm) shows units.
 - Line 3 (H=3.33 mm) shows analog output or tag no.
 - Line 4 shows communication status.
- Programming access can be blocked by assigning a password. The password is saved in the device in order to ensure a high degree of protection against unauthorised modifications to the configuration.

Programming Module adapter

Connect the adapter by opening the front plate on IAMA and inserting the jack into the plug.

Note: The PGMMOD02 requires 3 AAA batteries. The PGMMOD02 includes cable, base and display module.



Technical data

Environmental conditions:

Operating temperature	-25°C to +70°C
Storage temperature	-40°C to +85°C
Calibration temperature.	20...28°C
Relative humidity	< 95% RH (non-cond.)
Protection degree	IP20
Installation in pollution degree 2 & overvoltage category II.	

Mechanical specifications:

Dimensions (HxWxD)	113 x 6.1 x 115 mm
Weight approx.	70 g
DIN rail type.	DIN EN 60715 - 35 mm
Wire size.	0.13...2.5 mm ² / AWG 26...12 stranded wire
Screw terminal torque.	0.5 Nm
Vibration.	IEC 60068-2-6
2...25 Hz.	±1,6 mm
25...100 Hz	±4 g

Common electrical specifications:

Supply voltage, universal.	16.8...31.2 VDC
Max. required power.	1.2 W
Max. power dissipation	0.65 W
<i>Max. required power is the maximum power needed at power supply terminals.</i>	
<i>Max. power dissipation is the maximum power dissipated at nominal operating values.</i>	
Fuse	400 mA SB / 250 VAC
Isolation voltage, test.	2.5 kVAC
Isolation voltage working.	300 VAC (reinforced) / 250 VAC (Zone 2, Div. 2)
Programming	PGMMOD02 Programming Module Kit
Signal dynamics, input / output	24 bit / 16 bit
Signal / noise ratio.	Min. 60 dB (0...100 kHz)
Response time (0...90%, 100...10%):	
Temperature input.	1 s
mA / V input	400 ms

Accuracy, the greater of the general and basic values:

General values		
Input type	Absolute accuracy	Temperature coefficient
All	$\leq \pm 0.1\%$ of span	$\leq \pm 0.01\%$ of span / °C

Basic values		
Input type	Basic accuracy	Temperature coefficient
mA	$\leq \pm 16 \mu\text{A}$	$\leq \pm 1.6 \mu\text{A} / ^\circ\text{C}$
0...1 V & 0.2...1 V	$\leq \pm 0.8 \text{ mV}$	$\leq \pm 0.08 \text{ mV} / ^\circ\text{C}$
0...5 V, 1...5 V, 0...10 V & 2...10 V	$\leq \pm 8 \text{ mV}$	$\leq \pm 0.8 \text{ mV} / ^\circ\text{C}$
Pt100, Pt200, Pt 1000	$\leq \pm 0.2^\circ\text{C}$	$\leq \pm 0.02^\circ\text{C} / ^\circ\text{C}$
Pt500, Ni100, Ni120, Ni 1000	$\leq \pm 0.3^\circ\text{C}$	$\leq \pm 0.03^\circ\text{C} / ^\circ\text{C}$
Pt50, Pt400, Ni50	$\leq \pm 0.4^\circ\text{C}$	$\leq \pm 0.04^\circ\text{C} / ^\circ\text{C}$
Pt250, Pt300	$\leq \pm 0.6^\circ\text{C}$	$\leq \pm 0.06^\circ\text{C} / ^\circ\text{C}$
Pt20	$\leq \pm 0.8^\circ\text{C}$	$\leq \pm 0.08^\circ\text{C} / ^\circ\text{C}$
Pt10	$\leq \pm 1.4^\circ\text{C}$	$\leq \pm 0.14^\circ\text{C} / ^\circ\text{C}$
TC type: E, J, K, L, N, T, U	$\leq \pm 1^\circ\text{C}$	$\leq \pm 0.1^\circ\text{C} / ^\circ\text{C}$
TC type: R, S, W3, W5, LR	$\leq \pm 2^\circ\text{C}$	$\leq \pm 0.2^\circ\text{C} / ^\circ\text{C}$
TC type: B 160...400°C	$\leq \pm 4.5^\circ\text{C}$	$\leq \pm 0.45^\circ\text{C} / ^\circ\text{C}$
TC type: B 400...1820°C	$\leq \pm 2^\circ\text{C}$	$\leq \pm 0.2^\circ\text{C} / ^\circ\text{C}$

Conducted RF/LF immunity influence	$< \pm 0.5\%$ of span
Extended EMC immunity: ESD / HF / Burst / Surge immunity influence	$< \pm 1\%$ of span

Auxiliary supplies:

2-wire supply (terminal 3 and 4) 25...15 VDC / 0...20 mA

RTD, linear resistance and potentiometer input:

Input type	Min. value	Max. value	Standard
Pt100	-200°C	+850°C	IEC 60751
Ni100	-60°C	+250°C	DIN 43760
Linear resist.	0 Ω	10000 Ω	-
Potentiometer	10 Ω	100 k Ω	-

Input for RTD types:

Pt10, Pt20, Pt50, Pt100, Pt200, Pt250, Pt300, Pt400, Pt500, Pt1000

Ni50, Ni100, Ni120, Ni1000

Cable resistance per wire (max.), RTD 50 Ω

Sensor current; RTD Nom. 0.2 mA

Effect of sensor cable resistance (3- / 4-wire), RTD $< 0.002 \Omega / \Omega$

Sensor error detection, RTD Yes

Short circuit detection, RTD $< 15 \Omega$

TC input:

Type	Min. value	Max. value	Standard
B	0°C	+1820°C	IEC 60584-1
E	-100°C	+1000°C	IEC 60584-1
J	-100°C	+1200°C	IEC 60584-1
K	-180°C	+1372°C	IEC 60584-1
L	-200°C	+900°C	DIN 43710
N	-180°C	+1300°C	IEC 60584-1
R	-50°C	+1760°C	IEC 60584-1
S	-50°C	+1760°C	IEC 60584-1
T	-200°C	+400°C	IEC 60584-1
U	-200°C	+600°C	DIN 43710
W3	0°C	+2300°C	ASTM E988-90
W5	0°C	+2300°C	ASTM E988-90
LR	-200°C	+800°C	GOST 3044-84

Cold junction compensation (CJC):

via internal CJC sensor $\pm(2.0^{\circ}\text{C} + 0.4^{\circ}\text{C} * \Delta t)$

Δt = internal temperature - ambient temperature

Sensor error detection, all TC types. Yes

Sensor error current:

when detecting Nom. 2 μA

else. 0 μA

Current input:

Measurement range 0...23 mA

Programmable measurement ranges 0...20 and 4...20 mA

Input resistance Nom. 20 Ω + PTC 50 Ω

Sensor error detection:

Loop break 4...20 mA Yes

Voltage input:

Measurement range 0...12 VDC

Programmable measurement ranges 0...1 / 0.2...1 / 0...5 / 1...5 / 0...10 and 2...10 VDC

Input resistance Nom. 10 M Ω

Current output:

Signal range (span) 0...23 mA

Programmable signal ranges 0...20 / 4...20 / 20...0 and 20...4 mA

Load $\leq 600 \Omega$

Load stability $\leq 0.01\%$ of span / 100 Ω

Sensor error detection 0 / 3.5 / 23 mA / none

NAMUR NE 43 Upscale/Downscale. 23 mA / 3.5 mA

Output limitation:

on 4...20 and 20...4 mA signals 3.8...20.5 mA

on 0...20 and 20...0 mA signals 0...20.5 mA

Current limit. $\leq 28 \text{ mA}$

Voltage output:

Signal range. 0...10 VDC

Programmable signal ranges 0...1 / 0.2...1 / 0...10 / 0...5 / 1...5 /
2...10 / 1...0 / 1...0.2 / 5...0 / 5...1 /
10...0 og 10...2 V

Load (min.) $>10 \text{ k}\Omega$

of span = of the currently selected measurement range

Observed authority requirements:

EMC. 2014/30/EU
LVD. 2014/35/EU
RoHS. 2011/65/EU

Approvals:

UL, Standard for Safety UL 61010-1
UL Listed E179259
Safe Isolation. EN 61140

I.S. / Ex approvals:

ATEX 2014/34/EU. DEKRA 19ATEX0002 X
IECEx. DEK 19.0002 X

Display readout on the PGM of sensor error detection and input signal outside range

Sensor error check:		
Device:	Configuration	Sensor error detection:
IAMA	OUT.ERR=NONE.	OFF
	Else:	ON

Outside range readout (IN.LO, IN.HI): If the valid range of the A/D converter or the polynomial is exceeded			
Input	Range	Readout	Limit
VOLT	0...1 V / 0.2...1 V	IN.LO	< -25 mV
		IN.HI	> 1.2 V
	0...10 V / 2...10 V	IN.LO	< -25 mV
		IN.HI	> 12 V
CURR	0...20 mA / 4...20 mA	IN.LO	< -1.05 mA
		IN.HI	> 25.05 mA
LIN.R	0...800 Ω	IN.LO	< -10 Ω
		IN.HI	> ca. 1075 Ω
	0...10 kΩ	IN.LO	< -10 Ω
		IN.HI	> 11 kΩ
POTM	0...100%	IN.LO	< -0.5 %
		IN.HI	> 100.5 %
TEMP	TC / Pt100	IN.LO	< temperature range -2°C
		IN.HI	> temperature range +2°C

Display readout below min. / above max. (-1999, 9999):			
Input	Range	Readout	Limit
All	All	-1999	Display readout <-1999
		9999	Display readout >9999

Sensor error detection limits

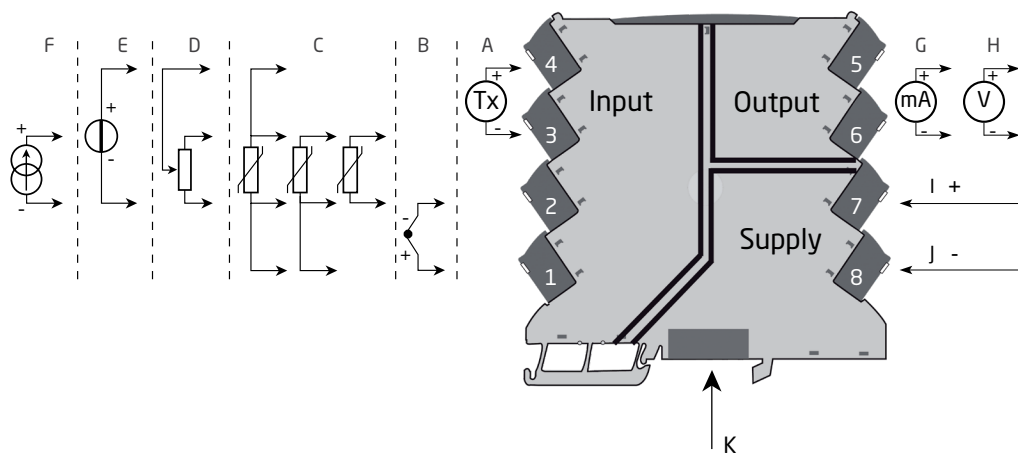
For the errors below to be detected OUT.ERR must be programmed for ON.			
Input	Range	Readout	Condition
CURR	Loop break (4...20 mA)	SE.BR	<= 3.6 mA; > = 21 mA
POTM	All, SE.BR on all 3-wire	SE.BR	> ca. 126 kΩ
LIN.R	0...800 Ω	SE.BR	> ca. 875 Ω
	0...10 kΩ	SE.BR	> ca. 11 kΩ
TEMP	TC	SE.BR	> ca. 750 kΩ / (1.25 V)
	RTD, 2-, 3-, and 4-wire No SE.SH for Pt10, Pt20 and Pt50	SE.BR	> ca. 15 kΩ
		SE.SH	< ca. 15 Ω

Error indications

Readout at hardware error		
Error search	Readout	Cause
CJC sensor error - check device temperature	CJ.ER	Defect internal CJC sensor or CJC temperature out of allowed range**
Flash memory error - default configuration is loaded	FL.ER	Error in FLASH (configuration)*
No communication	NO.CO	No communication
Input error - check input connection and reset power	IN.ER	Error levels on measurement inputs*
Programming mode only - no output signal	PROG.	Offline configuration mode (IAMA powered by communications interface)***
Invalid configuration type or version	TY.ER	Configuration read from EEprom has invalid type or rev. no.
Hardware error	RA.ER	RAM memory error*
Hardware error	EE.ER	EEPROM memory error*
Hardware error	NO.CA	Device not factory-calibrated
Hardware error	AD.ER	A/D converter error*
Hardware error	EF.SU	External Flash error*
Hardware error	IF.ER	Internal Flash error*

All error indications in the display flash once per second. The help text explains the error. If the error is a sensor error, the display backlight flashes as well - this is acknowledged (stopped) by pushing the  button.	
*	Error is acknowledged by entering the menu and saving or by resetting the device power.
**	Error can be disregarded by selecting input type different than TC.
***	Error indication does not flash. Error is acknowledged by connecting device power.

Connections

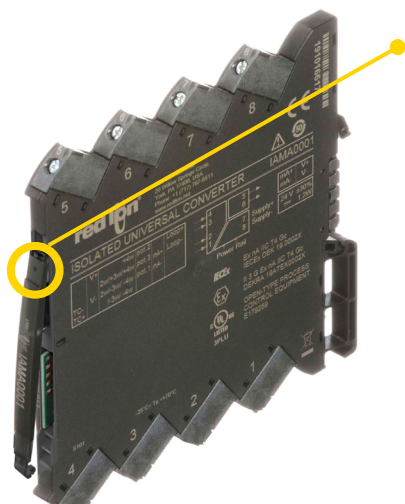


	Input signals
A	Active Current Sensor
B	TC
C	RTD
D	Potentiometer
E	Voltage
F	Passive Current Sensor

	Supply
I	Supply +
J	Supply -

	Output signals
G	Current
H	Voltage

LED indication



The device is equipped with a green power LED in the front to indicate the operation status, see the table below.

Condition	LED	Output and loop supply	Action required
No supply / device error or code-flash CRC error	OFF	De-energized	Connect supply / replace device
Power-up or restart	1 Flash (0.5 s OFF + 0.5 s ON)	De-energized	-
Device OK	Flashing 13 Hz (15 ms ON)	Energized	-
Sensor error	Flashing 1 Hz (15 ms ON)	De-energized	Correct setting and re-power device
Restarting due to: Supply error/hardware. RAM or program flow error	Flashing 1 Hz (0.5 s ON)	De-energized	Adjust supply / replace device

Default configuration

Input

Input type	Temperature
Voltage input	0...10 V
Current input	4...20 mA
Sensor connection (RTD+resistance)	3 wire
R input range	0...1000
Temperature unit.	°C
Temperature type	Pt
Pt type.	Pt100
Ni type.	Ni100
TC type	K
Display unit	°C
Decimal point.	000.0
Display low	0.0
Display high.	100.0

Output

Output type.	Current
Voltage output	0...10 V
Current output	4...20 mA
Analog out on error	23 mA
Analog out low	0
Analog out high	150
Output limit.	No

Advanced

LCD contrast	3
LCD backlight	4
TAG	TAG NO.
Line 3 function	Analog out
Use calibration	No
Enable password protection	No
Calibration range	0.0 / 100.0
Calibration point	0.0 / 100.0
Language	UK

Configuration / operating the function keys

Documentation for routing diagram.

In general

When configuring the IAMA, you will be guided through all parameters and you can choose the settings which fit the application. For each menu there is a scrolling help text which is automatically shown in line 3 on the display.

Configuration is carried out by using the 3 function keys:

- ⬅ will increase the numerical value or choose the next parameter
- ➡ will decrease the numerical value or choose the previous parameter
- OK will accept the chosen value and proceed to the next menu

When configuration is completed, the display will return to the default state 1.0. See the reference diagram on page 23.

Pressing and holding OK will return to the previous menu or return to the default state (1.0) without saving the changed values or parameters.

If no key is activated for 1 minute, the display will return to the default state (1.0) without saving the changed values or parameters. See the reference diagram beginning on page 24.

Further explanations

Password protection: Programming access can be blocked by assigning a password. The password is saved in the transmitter in order to ensure a high degree of protection against unauthorised modifications to the configuration.

Default password 2008 allows access to all configuration menus.

Signal and sensor error info via display front PGM

Sensor error (see limits in the table) is displayed as SE.BR (sensor break) or SE.SH (sensor short). Signals outside the selected range (not sensor error, see table for limits) are displayed as IN.LO indicating low input signal or IN.HI indicating high input signal. The error indication is displayed in line 3 as text and at the same time the backlight flashes. Line 4 of the display is a status line which displays COM (flashing bullet) indicating correct functioning of PGM, and arrow up/down which indicates tendency readout of the input signal.

Signal and sensor error indication without display front

Status of the unit can also be read from the green LED in the front of the device.

Green flashing LED 13 Hz indicates normal operation.

Green flashing LED 1 Hz indicates sensor error.

No light in the LED indicates internal error.

Advanced functions

The unit gives access to a number of advanced functions which can be reached by answering "Yes" to the point "adv.set".

Display setup: Here you can adjust the brightness contrast and the backlight. Setup of TAG number with 6 alphanumeric. Selection of functional readout in line 3 of the display - choose between readout of analog output or TAG number.

Two-point process calibration: The unit can be process-calibrated in 2 points to fit a given input signal. A low input signal (not necessarily 0%) is applied and the actual value is entered via PGM. Then a high signal (not necessarily 100%) is applied and the actual value is entered via PGM. If you accept to use the calibration, the unit will work according to this new adjustment. If you later reject this menu point or choose another type of input signal the unit will return to factory calibration.

Process simulation function: If you say "yes" to the point "EN.SIM" it is possible to simulate an input signal by means of the arrow keys and thus control the output signal up or down. When you finalise the point with OK, the unit returns to normal mode.

Password: Here you can choose a password between 0000 and 9999 in order to protect the unit against unauthorised modifications to the configuration. The unit is delivered default without password. If you have locked the unit with a password by mistake, you can always open the menu by using the master password 2008.

Language: In the menu "lang.setup" you can choose between 7 different language versions of help texts that will appear in the menu. You can choose between UK, DE, FR, IT, ES, SE and DK.

Selection of units

After choosing the input signal type you can choose the process units which will be displayed in text line 2 (see table). By selection of temperature input the process value is always displayed in Celsius or Fahrenheit. This is selected in the menu point after selection of temperature input.

Memory

In the memory menu you can save the configuration of the device in the PGM, and then move the PGM onto another device of the same type and download the configuration in the new device.

Hold and :

Toggle Line 3 function between A.Out / TAG.

(Setting is volatile - use DISP setup menu to change and store Line 3 function.)

Power up

40.00
%
10.4
*1.0

PROG
0.00 mA
*1.1

*1.0 Default state
Line 1 shows input signal.
Line 2 shows UNIT.
By pressing and simultaneously line 3 alternates
between A.Out and TAG.
Line 4 shows communication status.

*1.1 The PGM will power off if no key is activated for 1 minute.

*1.2 Only if password is enabled.

*1.3 Downscale to 0 mA / 3.5 mA or 0 V.
Upscale to 23 mA or 110% of Vout high.
Only if input type supports sensor error check.
Not valid for these input signals:
0...20 mA and voltage.

*1.4 Only if input signal is temperature.

0000
9999
*1.2

0000
PASSW.
Txt 1

NO
YES

NO
ADV.SET
Txt 2

VOLT
CURR
LIN.R
POTM
TEMP

VOLT
IN TYPE
Txt 3

2-10
0-10
1-5
0-5
0.2-1
0-1

0-10
V.RANGE
Txt 4

°C
mA
RPM
69 units
(see pg 24 for
units list)

UNIT
%
Txt 11

1111
111.1
11.11
1.111

111.1
DEC.P
Txt 12

0-20
4-20

CURR
IN TYPE
Txt 3

4-20
I.RANGE
Txt 5

4W
3W
2W

3W
CONNEC.
Txt 6

0000
9999

0
R 0%
Txt 7

0001
9999

2500
R 100%
Txt 8

LIN.R
IN TYPE
Txt 3

POTM
IN TYPE
Txt 3

Pt
Ni
TC

Pt
SENSOR
Txt 10

1000
-
10

100
Pt TYPE
Txt 15

4W
3W
2W

3W
CONNEC.
Txt 6

1000
-
50

Ni
SENSOR
Txt 10

100
Ni TYPE
Txt 16

4W
3W
2W

3W
CONNEC.
Txt 6

TC.B TC.E TC.J TC.K
TC.L TC.N TC.R TC.S
TC.T TC.U TC.W3
TC.W5 TC.Lr

TC
SENSOR
Txt 10

TC.K
TC TYPE
Txt 17

YES
ADV.SET
Txt 2

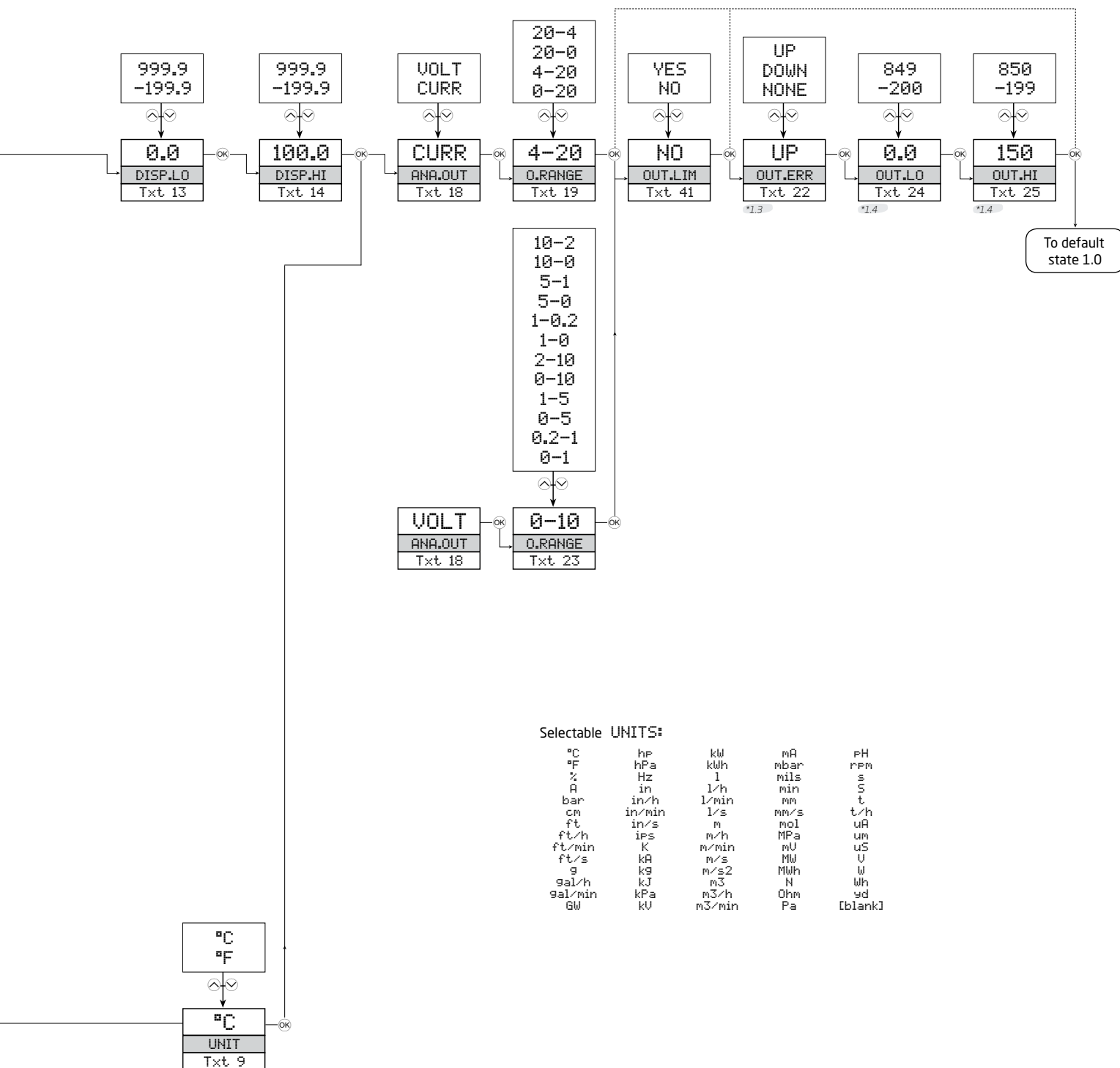
Continued on the page
Routing diagram ADV.SET

Routing diagram

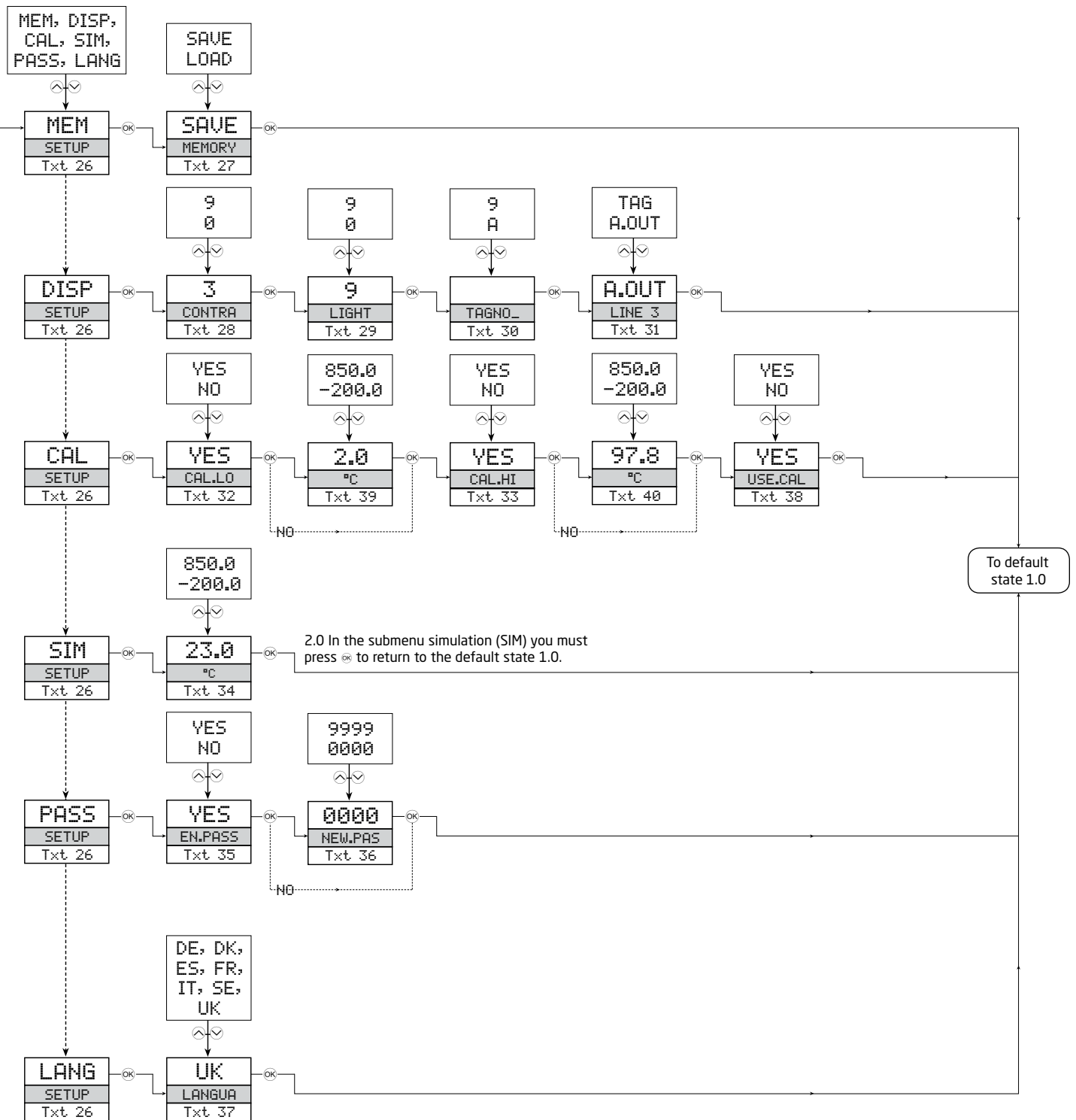
If no key is activated for 1 minute, the display will return to the default state 1.0 without saving configuration changes.

- ⬆ Increase value / choose next parameter
- ⬇ Decrease value / choose previous parameter
- Ⓚ Save the chosen value and proceed to the next menu

Hold  Back to previous menu / return to menu 1.0 without saving.



Routing diagram, advanced settings (ADV.SET)



Help text overview

[01]	Set correct password	[18]	Select current as analog output type
[02]	Enter advanced setup menu?		Select voltage as analog output type
[03]	Select temperature input	[19]	Select 0-20 mA output range
	Select potentiometer input		Select 4-20 mA output range
	Select linear resistance input		Select 20-0 mA output range
	Select current input		Select 20-4 mA output range
	Select voltage input	[22]	Select no error action - output undefined at error
[04]	Select 0.0-1 V input range		Select downscale at error
	Select 0.2-1 V input range		Select upscale at error
	Select 0-5 V input range	[23]	Select 0.0-1 V output range
	Select 1-5 V input range		Select 0.2-1 V output range
	Select 0-10 V input range		Select 0-5 V output range
	Select 2-10 V input range		Select 1-5 V output range
[05]	Select 0-20 mA input range		Select 0-10 V output range
	Select 4-20 mA input range		Select 2-10 V output range
[06]	Select 2-wire sensor connection		Select 1-0.0 V output range
	Select 3-wire sensor connection		Select 1-0.2 V output range
	Select 4-wire sensor connection		Select 5-0 V output range
[07]	Set resistance value low		Select 5-1 V output range
[08]	Set resistance value high		Select 10-0 V output range
[09]	Select Celsius as temperature unit		Select 10-2 V output range
	Select Fahrenheit as temperature unit	[24]	Set temperature for analog output low
[10]	Select TC sensor type	[25]	Set temperature for analog output high
	Select Ni sensor type	[26]	Enter language setup
	Select Pt sensor type		Enter password setup
[11]	Select display unit		Enter simulation mode
[12]	Select decimal point position		Perform process calibration
[13]	Set display range low		Enter display setup
[14]	Set display range high		Perform memory operations
[15]	Select Pt10 as sensor type	[27]	Load saved configuration into device
	Select Pt20 as sensor type		Save configuration in display front
	Select Pt50 as sensor type	[28]	Adjust LCD contrast
	Select Pt100 as sensor type	[29]	Adjust LCD backlight
	Select Pt200 as sensor type	[30]	Write a 6-character device TAG
	Select Pt250 as sensor type	[31]	Analog output value is shown in display line 3
	Select Pt300 as sensor type		Device TAG is shown in display line 3
	Select Pt400 as sensor type	[32]	Calibrate input low to process value?
	Select Pt500 as sensor type	[33]	Calibrate input high to process value?
	Select Pt1000 as sensor type	[34]	Set the input simulation value
[16]	Select Ni50 as sensor type	[35]	Enable password protection?
	Select Ni100 as sensor type	[36]	Set new password
	Select Ni120 as sensor type	[37]	Select language
	Select Ni1000 as sensor type	[38]	Use process calibration values?
[17]	Select TC-B as sensor type	[39]	Set value for low calibration point
	Select TC-E as sensor type	[40]	Set value for high calibration point
	Select TC-J as sensor type	[41]	Limit output values to output range
	Select TC-K as sensor type	[42]	Programming mode only - no output signal
	Select TC-L as sensor type		
	Select TC-N as sensor type		
	Select TC-R as sensor type		
	Select TC-S as sensor type		
	Select TC-T as sensor type		
	Select TC-U as sensor type		
	Select TC-W3 as sensor type		
	Select TC-W5 as sensor type		
	Select TC-Lr as sensor type		

Ordering information

DESCRIPTION	PART NUMBER
Universal Signal Conditioner	IAMA0001
Programming Module Kit	PGMMOD02

