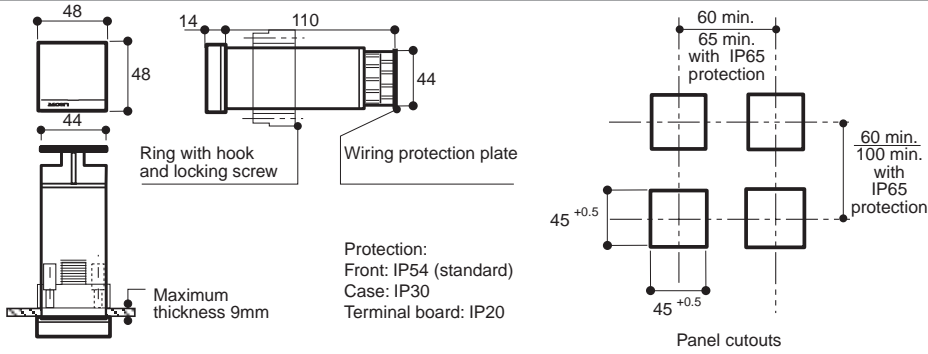


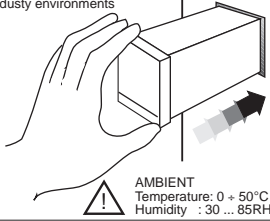
1 • INSTALLATION

• Dimensions

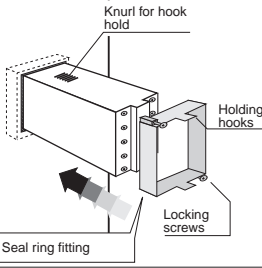


• Panel fitting

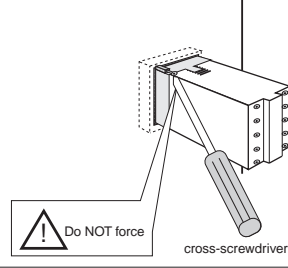
- Install away from:
 - heat sources
 - corrosive gases
 - dusty environments



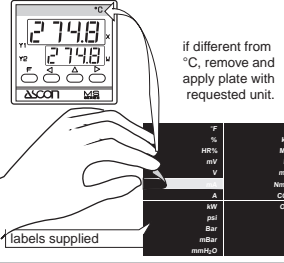
• Fixing with ring



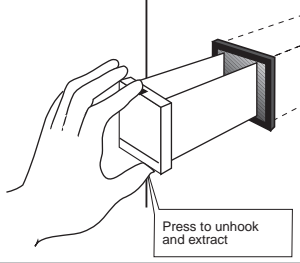
• Screw locking



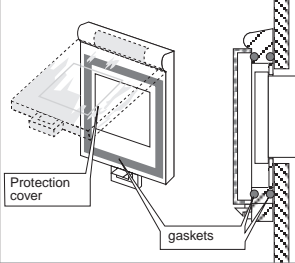
• Plate for engineering units



• Front extractability



• Seal IP65 F-10-141-2A101



Configurable Multi-input Controller
48x48 DIN

MS Series



INSTRUCTION MANUAL
96/04 - Code: ISTR_M_MS_E_01_--



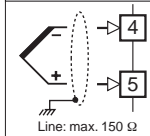
Ascon TecnoLogic S.r.l.
via Indipendenza 56,
27029 - Vigevano (PV)
Tel.: +39 0381 69871,
Fax: +39 0381 698730
www.ascontecnologic.com

2 • CONNECTIONS

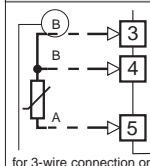
• Input

- Observe polarity
 - For extension, use a compensation cable suitable for the thermocouple used
 - The eventual shield must be well earthed at only one end
 - For 3-wire connection, use wires of same section (min. 1 sq.mm)
 - For 2-wire connection, use wires of adequate section (min. 1.5 sq.mm.)
- Note:
with a 15 m. probe to controller distance and a 1.5 sq.mm. section cable, the error is about 1°C.

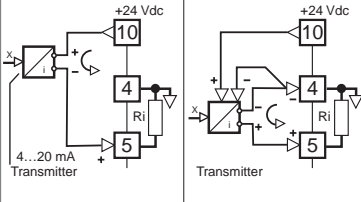
• For THERMOCOUPLES



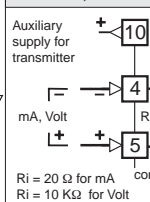
• For RTD Pt100



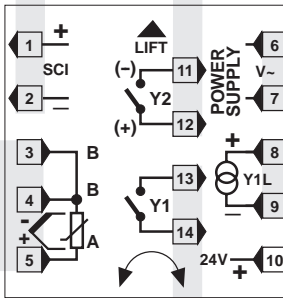
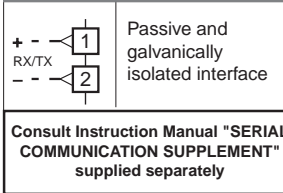
For 2-WIRE TRANSMITTER 3 or 4-WIRE TRANSMITTER



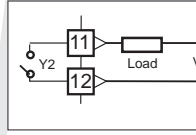
• For mA, Vdc



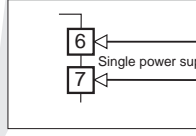
• Serial communication (option)



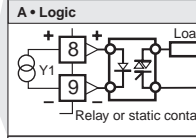
• Auxiliary output Y2



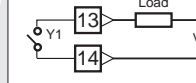
• Power supply



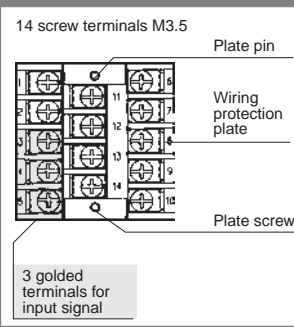
• Main output Y1



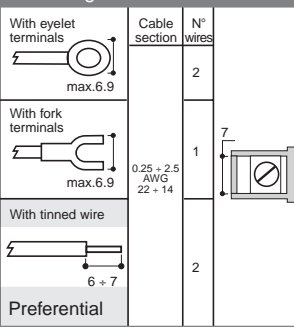
• Relay



• Terminal board



• Effecting connections

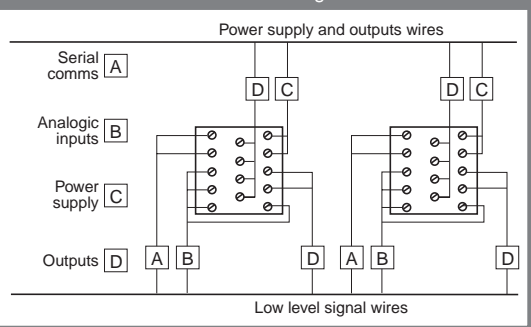


Precautions

Although this controller is designed to resist the heaviest disturbances present in industrial environments (level IV of standard IEC 801-4), it is advised to keep to the following precautions:

- Keep away supply line from others power lines
- Keep away from electromagnetic contactors and motors
- Keep away from SCR power units, especially if with phase control

Advised wiring



3 • CODIFICATION

Model

Model code

MS-**A B** /

Configuration code

C D E F /

Beginning and end of scale (only for configurable scales)

G....H

Mains	A	Serial communication (option)	B
100...240 V 50/60Hz	3	None	0
18...28V 50/60Hz and 20...30Vdc	5	Fitted Ascon std. protocol	1
		Fitted Mod/bus/Jbus protocol	2

Configuration

Input type, scale range (1)	C	Output type Y1	D	Type of action and safety state Y1 (2)	E
RTD IEC 751	Pt100 -200...600°C	Relay 3A/250 Vac	0	Reverse Safety 0%	0
	Pt100 -99,9...300,0°C	Logic 0/18 Vdc	1	Direct Safety 0%	1
Thermocouples IEC 584	Type J 0...600°C	You can configure your instrument just entering through the keyboard an 4 characters code	2	Reverse Safety 100%	2
	Type L 0...600°C			Direct Safety 100%	3
	Type K 0...1200°C			Reverse Safety 0%	4
	Type S 0...1600°C			Direct Safety 0%	5
4...20mA	Conf. eng. units		6	Reverse Safety 100%	6
0...20mA	Conf. eng. units		7	Direct Safety 100%	7
0...1 Vdc	Conf. eng. units		8	Reverse Safety -100%	8
0...10 Vdc	Conf. eng. units		9	Direct Safety -100%	9

The configuration code indexes C, D, E, F

!
If at the power-up appears 9999 that means the controller **IS NOT CONFIGURED** (see instructions)

Type of Set point and control mode output Y2	F
Disabled	0
Heat-Cool (2)	1
Startup inhibition band	Active outside 2
	Active inside 3
Band	Active inside 4
	Active low 5
Independent	Active high 6
	Active low 7
Deviation	Active high 8
	Active low 9
Loop - Break - Alarm	9

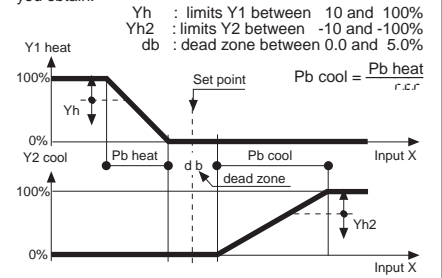
Note:

- For mA and Volt inputs the beginning and end scale values can be configured in engineering units between -999 and 9999. The minimum scale span is of 100 steps. The values can be expressed in units (xxxx), in tenths (xxx.x), hundredths (xx.xx) or thousandths (x.xxx).
- The safety value assumed by Y1 and Y2 (if configured heat-cool) in case of failure in the control loop coincides respectively with the upper limit of Yh and Yh2.

5 • AUXILIARY OUTPUT Y2

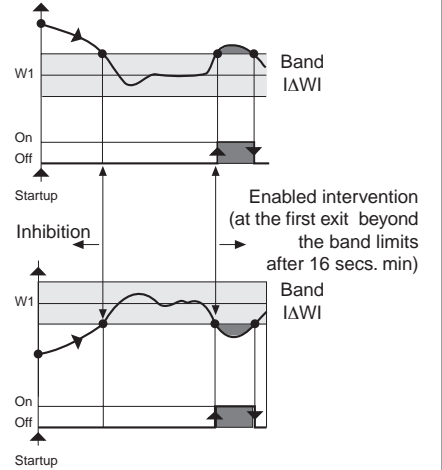
Double action (Heat-Cool)

With Y1 configured for reverse action (E = 4.6 or 8) and Y2 configured for Heat-Cool operation (F=1) you obtain:



With $r.c.r$ = relative gain of cool action from 0.1 to 3.0
Example:
if Pb heat = 10% and $r.c.r$ = 0.5 → Pb cool = 20%
The ti (integral) and td (derivative) times of Heat are valid also for Cool whereas the cycling times tc are different.

Band with inhibition



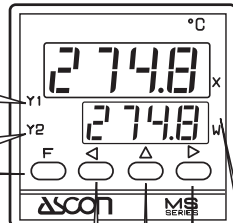
4 • KEYS AND DISPLAYS

Leds for output states

- Lit with output Y1 "ON"
- Lit with output Y2 "ON"

Keys

- Keys for modifying values
- Selects the digit to be modified
- Increments value of the flashing digit from 0...9
- Programming keys
- Access to the functions menu
- Enters or Scrolls values or operation modes



Display

Displays the value of measure X expressed in engineering units.
If above end of scale
8888
If below beginning of scale
8888

- In programming: displays parameter values
- In configuration: displays the values of the configuration code

Displays the Set point value

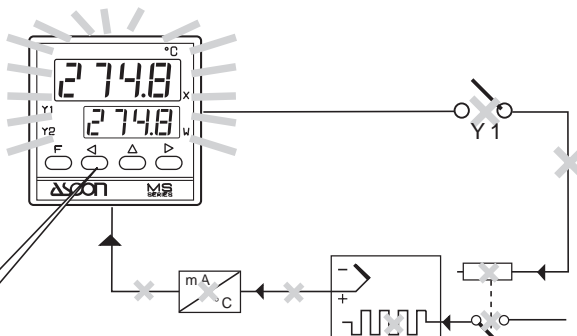
- In programming: displays the parameter codes

"Loop-Break-Alarm" LBA (interruption/control loop failure)

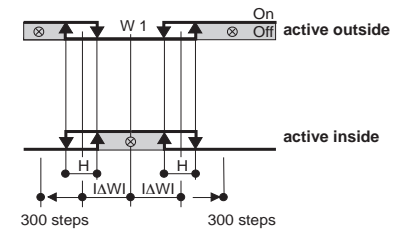
With Y2 output active and configured as Loop-Break-Alarm

Any interruption in connections or any failure in the operation of one of the control loop components will cause after a few minutes the output Y2 to be energized and the entire front display to flash.

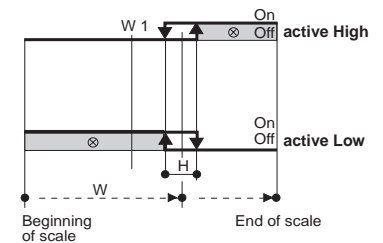
The alarm state stops when the failure having caused it disappears or pressing any key



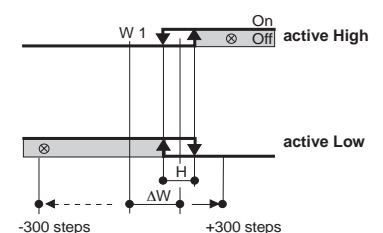
Band ΔAWI



Independent W



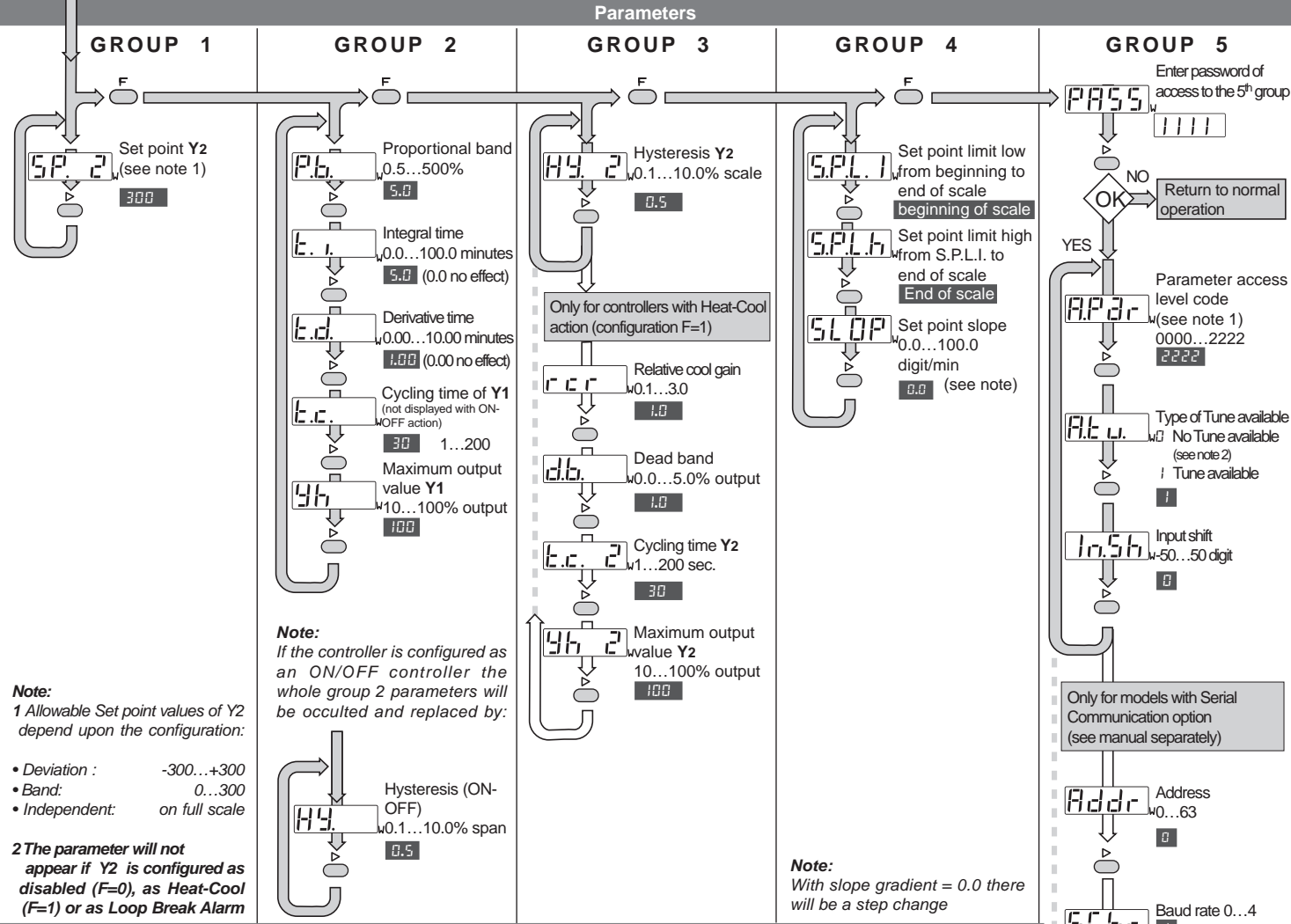
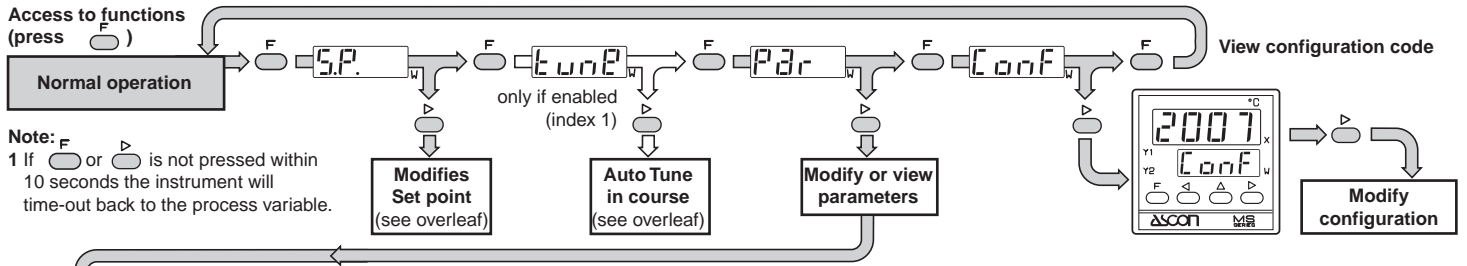
Deviation ΔW



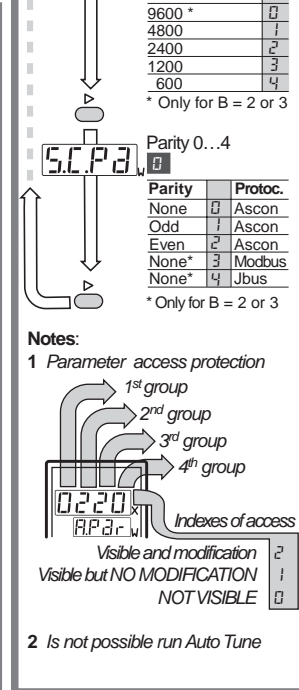
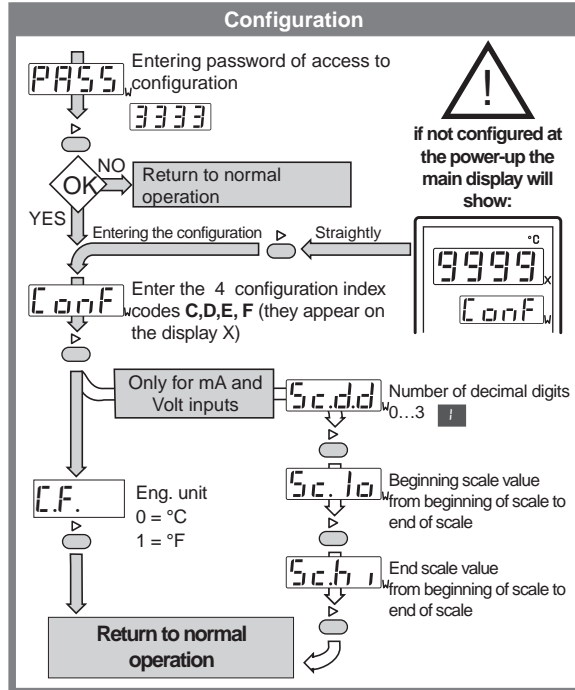
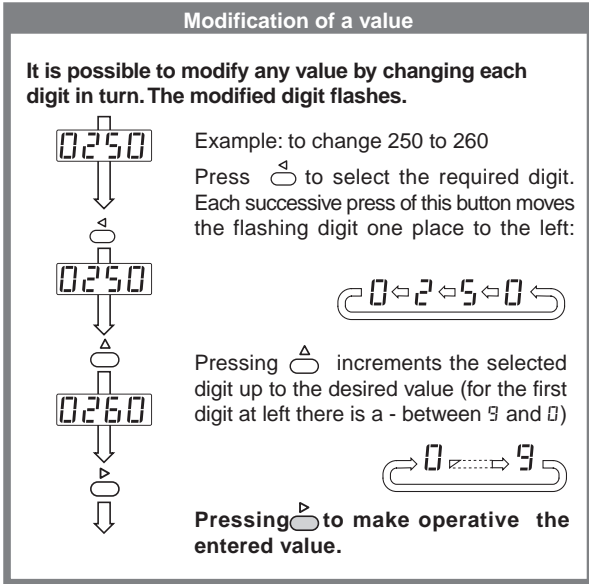
The Setting range of Y2 is not limited by the limits of main Set point W1 but only by the scale span

6 • PROGRAMMING

Functions menu



Note: FACTORY SET VALUES (DEFAULT)



NOTE FOR CONFIGURATION:
All the configuration data are continuously displayed.
There is no time-out.