mL-CS8 96 x 96 DIN 1/4
8 CHANNEL PT-100 SCANNER

CE

mL-CS8 8 Channel PT-100 Scanner
- 320 x 240 pixel TFT LCD display
- 8 PT-100 temperature sensor inputs
- ON-OFF control
- Relay or (pnp "source") transistor output
- Sensor error detection
- Adjustable temperature offset
- 3 Different alarm and pre-alarm types for each channel (High, Low and Band Alarms)
- User defined channel labels
- Display scan modes
- Operating with Real Time Clock (RTC)
- ModBus RTU communication protocol (RS-232, RS-485 communication)
- Data Logging to USB Flash Memory (custom order option)
- Adjustable data logging time interval
- Password protection for programming mode

mL-CS8 series 8 channel PT100 scanner devices are designed for measuring and logging temperature. They can be used in many applications with their PT-100 process input, alarm outputs, selectable alarm functions, RS-232 / RS-485 communications.

SPECIFICATIONS

INPUT
Thermoresistance(RTD) : 2 wire PT100 (IEC 751) (ITS90)
Measurement Range : -200°C / +650°C
Accuracy : ± 0.25% of full scale
Sensor Break Protection : Upscale
Sampling Time : 400msecs.
Line Compensation : Maximum 10 W
Input Ressistance : > 10MΩ

OUTPUT
Relay : Resistive Load 5A@250V∼
(Electrical Life : 100.000 operation (Full Load)
Transistor : PNP(source) type transistor output (Max. 1A@24V⎓)

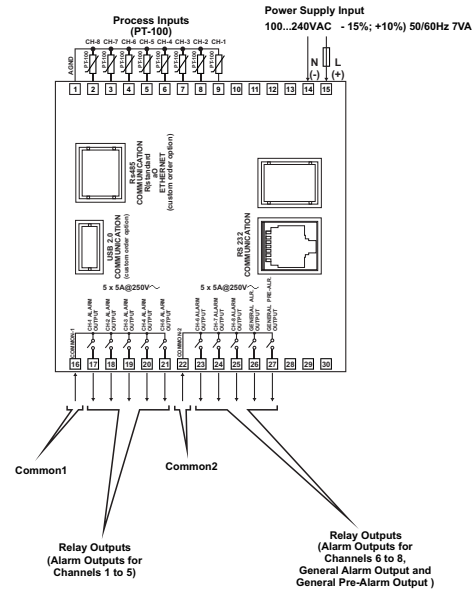**DISPLAY**
LCD Display : 320x240 pixel TFT LCD

POWER SUPPLY
100 - 240 V ∼ (-%15 / +%10) 50/60 Hz. 7VA

ENVIRONMENTAL RATINGS
Operating Temperature : 0...50°C
Humidity : 0-90%RH (none condensing)
Protection Class : IP65 at front, IP20 at rear

PHYSICAL SPECIFICATIONS
Weight : 400 gr.
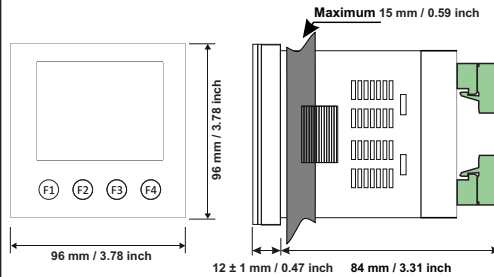**Dimension :** 96 x 96 mm, Depth:96 mm
Panel Cut-Out : 92 x 92 mm

Electrical Wiring Diagram
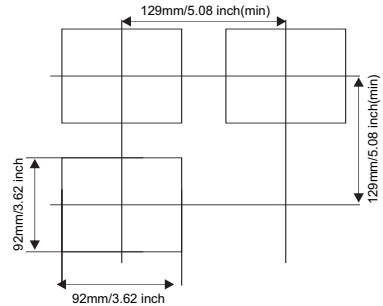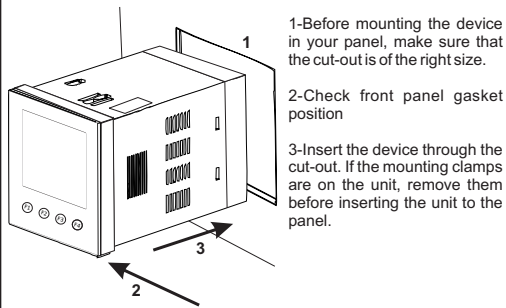### Device with Relay Outputs

Process Inputs (PT-100)
Power Supply Input 100...240VAC - 15%; +10%) 50/60Hz 7VA

Common1   Common2

Relay Outputs (Alarm Outputs for Channels 1 to 5)

Relay Outputs (Alarm Outputs for Channels 6 to 8, General Alarm Output and General Pre-Alarm Output)

ⓘ CH = CHANNEL

Front View and Dimensions of mL-CS8

Maximum 15 mm / 0.59 inch

96 mm / 3.78 inch

96 mm / 3.78 inch

12 ± 1 mm / 0.47 inch   84 mm / 3.31 inch

Panel Cut-Out

129mm/5.08 inch(min)
129mm/5.08 inch(min)
92mm/3.62 inch
92mm/3.62 inch

Panel Mounting

1-Before mounting the device in your panel, make sure that the cut-out is of the right size.

2-Check front panel gasket position

3-Insert the device through the cut-out. If the mounting clamps are on the unit, remove them before inserting the unit to the panel.

Installation Fixing Clamp

The unit is designed for panel mounting.

1-Insert the unit in the panel cut-out from the front side.

2- Insert the mounting clamps to the holes that located top and bottom sides of device and screw up the fixing screws until the unit completely immobile within the panel.

Removing from the Panel

1-Loosen the screws.

2-Pull mounting clamps from top and bottom fixing sockets.

3-Pull the unit through the front side of the panel

Definition of Front Panel

320 x 240 Pixel TFT LCD

Standart Function Buttons
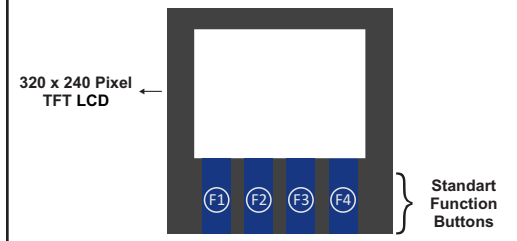
MENU BUTTON
Used to access Menu page.

AUTO BUTTON
Used to auto-scan pages.

ENTER BUTTON
Used to go in to selected page, to make parameter's cell available to change and to confirm parameter's change.

BACK BUTTON
Used to go back to previous menu and to cancel parameter's change.

UP BUTTON
Used to go up in menus and lists and also used to increase parameter's value.

DOWN BUTTON
Used to go downin menus and lists and also used to decrease parameter's value.

LEFT BUTTON
Used to go left in menus.

RIGHT BUTTON
Used to go right in menus.

DELETE BUTTON
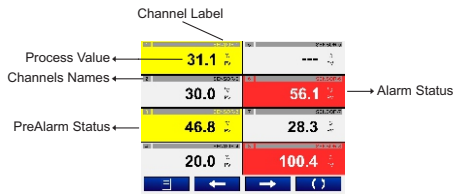Used to erase logs on the screen.

SETTINGS

ADVANCE SETTINGS

LOGS

LANGUAGE

Main Operation Screens Definetion

If the display type parameter value Screen Type = MULTIPLE
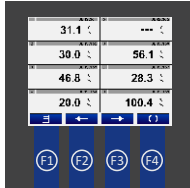
Channel Label

Process Value — **31.1**
Channels Names

30.0   56.1 ← Alarm Status

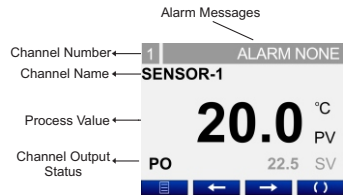PreAlarm Status — 46.8   28.3

20.0   100.4

MAIN OPERATION SCREEN

F1 F2 F3 F4

ℹ️ If the display scan parameter value Screen Change = ENABLE, each main operation screen is showing on LCD screen during time defined by Change Time parameter value.

If the display type parameter value Screen Type = SINGLE

Alarm Messages

Channel Number — 1   ALARM NONE
Channel Name — **SENSOR-1**

Process Value — **20.0** °C PV

Channel Output Status — PO   22.5 SV

MAIN OPERATION (CHANNEL-1 SCREEN)

F1 F2 F3 F4

Press number F2 or F3 buttons for accessing the relevant channel screen.

MAIN OPERATION (CHANNEL-4 SCREEN)

F1 F2 F3 F4

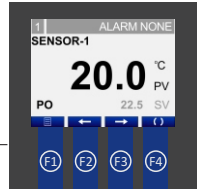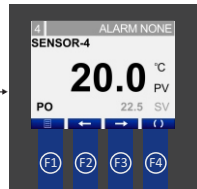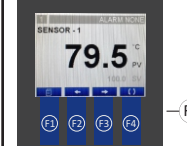ℹ️ If more than one alarm messages is present, each alarm message is showing on LCD screen during 1 second.

ℹ️ If the display scan parameter value Screen Change = ENABLE, each main operation screen is showing on LCD screen during time defined by Change Time(sec) parameter value
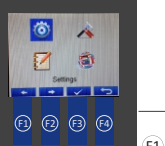

Accessing to the Operator Parameter Pages
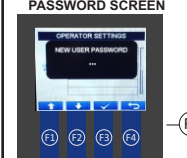
MAIN OPERATION SCREEN

SENSOR - 1
79.5 °C PV

F1 F2 F3 F4

When the F1 menu button is pressed while the main screen is on the page, the menu page is displayed.

MENU SCREEN

Settings

F1 F2 F3 F4

Press F1 or F2 direction buttons to move to the Settings tab.

→ F1 F2

OPERATOR PARAMETERS PASSWORD SCREEN

OPERATOR SETTINGS
NEW USER PASSWORD

F1 F2 F3 F4

Press F3 button. If password is different from 0, password screen opens.

OPERATOR PARAMETERS PASSWORD SCREEN

OPERATOR SETTINGS
NEW USER PASSWORD

F1 F2 F3 F4

Enter the password value using the F1 and F2 buttons.

→ F1 F2

OPERATOR PARAMETERS PASSWORD INPUT SCREEN

OPERATOR SETTINGS
NEW USER PASSWORD

F1 F2 F3 F4

Confirm the characters one by one by pressing F3 button. Once you have confirmed the last character, you will proceed to the operator parameters screen.
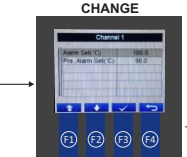
OPERATOR PARAMETERS (CHANNEL-1)

OPERATOR SETTINGS
Channel 1
Channel 2
Channel 3
Channel 4
Channel 5
Channel 6

F1 F2 F3 F4
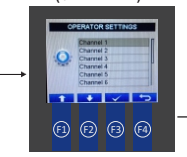
Press the F1 and F2 buttons to highlight the channel and press the F3 button.

→ F1 F2

OPERATOR PARAMETERS (CHANNEL-1 PARAMETERS)

Channel 1
Alarm Set(°C)   100.0
Pre. Alarm Set(°C)   90.0

F1 F2 F3 F4

Select the relevant parameter with the F1 and F2 buttons.

PARAMETERS CHANGE

Channel 1
Alarm Set(°C)   100.0
Pre. Alarm Set(°C)   90.0

F1 F2 F3 F4

Press the F3 button to select the parameter.

→ F3

PARAMETERS CHANGE

Channel 1
Alarm Set(°C)   100.0
Pre. Alarm Set(°C)   90.0

F1 F2 F3 F4

Use the F1 and F2 buttons to change the value of the parameter.

OPERATOR PARAMETERS (CHANNEL-1 PARAMETERS)

Channel 1
Alarm Set(°C)   100.0
Pre. Alarm Set(°C)   90.0

F1 F2 F3 F4

Press the F3 button to save the parameter value.

→ F1 F2

Accessing to the Technician Parameter Pages

MAIN OPERATION SCREEN
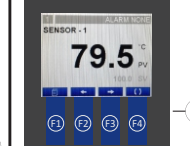
SENSOR - 1
79.5 °C PV

F1 F2 F3 F4

When the F1 menu button is pressed while the main screen is on the page, the menu page is displayed.

MENU SCREEN

Advanced Settings

F1 F2 F3 F4
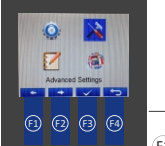
Press F1 or F2 direction buttons to move to the Advanced Settings tab.

→ F1 F2

TECHNICIAN PARAMETERS PASSWORD SCREEN

DEVICE SETTINGS
NEW TECH. PASSWORD

Date&Time Settings
Change Password

F1 F2 F3 F4
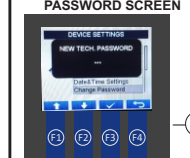
Press F3 button. If password is different from 0, password screen opens.

TECHNICIAN PARAMETERS PASSWORD SCREEN

DEVICE SETTINGS
NEW TECH. PASSWORD

Date&Time Settings
Change Password

F1 F2 F3 F4

Enter the password value using the F1 and F2 buttons.

→ F1 F2

TECHNICIAN PARAMETERS PASSWORD INPUT SCREEN

DEVICE SETTINGS
NEW TECH. PASSWORD

Date&Time Settings
Change Password

F1 F2 F3 F4

Confirm the characters one by one by pressing F3 button. Once you have confirmed the last character, you will proceed to the operator parameters

TECHNICIAN PARAMETERS (CONTROL PARAMETERS)

ADVANCED SETTINGS
Control Parameters
Device Settings
Test and Calibration

F1 F2 F3 F4

Use the F1 and F2 buttons to scroll to the Control parameters and press the F3 button.

→ F1 F2

TECHNICIAN PARAMETERS (CHANNEL-1)

CONTROL PARAMETERS
Channel 1
Channel 2
Channel 3
Channel 4
Channel 5
Channel 6

F1 F2 F3 F4

Select the relevant channel with the F1 and F2 buttons.

TECHNICIAN PARAMETERS (CHANNEL-1 PARAMETERS)

Channel 1
Status   ON
Name   SENSOR - 1
Alarm Type   HIGH
PreAlarm Type   HIGH
Hysteresis(°C)   1.0
Band Alarm(°C)   10.0

F1 F2 F3 F4

Press the F3 button to select the parameter.

→ F1 F2

PARAMETERS CHANGE

Channel 1
Status   ON
Name   SENSOR - 1
Alarm Type   HIGH
PreAlarm Type   HIGH
Hysteresis(°C)   1.0
Band Alarm(°C)   10.0

F1 F2 F3 F4

Use the F1 and F2 buttons to change the value of the parameter. Press the F3 button to save the parameter value.

DEVICE SETTINGS (RS232 SETTINGS)

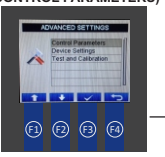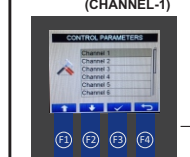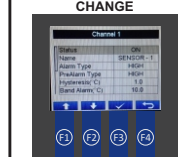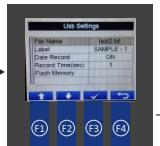RS-485 Settings
Baudrate   9600
Parity   NONE
Stop Bit
Id

F1 F2 F3 F4

With the F1 and F2 buttons you can select and change the RS232 parameters. Use the F3 button to save.

DEVICE SETTINGS (Rs485 SETTINGS)

RS-485 Settings
Baudrate   9600
Parity   NONE
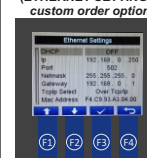Stop Bit   1
Id   1

F1 F2 F3 F4

With the F1 and F2 buttons you can select and change the RS485 parameters. Use the F3 button to save.

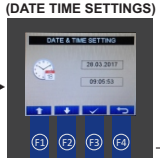## DEVICE SETTINGS (USB SETTINGS)
custom order option

Usb Settings
Port Name   WRITE
Label   SAMPLE - 1
Date Record   ON
Record Time(sec)   1
Flash Memory

F1 F2 F3 F4

With the F1 and F2 buttons you can select and change the USB parameters. Use the F3 button to save.

→ F3

DEVICE SETTINGS (ETHERNET SETTINGS)
custom order option

Ethernet Settings
DHCP   OFF
Ip   192.160. 0 .250
Port   502
Netmask   255.255.255. 0
Gateway   192.160. 0 . 1
Tcp/Ip Select   Over Tcp/Ip
Mac Address   F4-C9:51:A3:06:00

F1 F2 F3 F4

With the F1 and F2 buttons you can select and change the ETHERNET parameters. Use the F3 button to save.

DEVICE SETTINGS (DATE TIME SETTINGS)

DATE & TIME SETTING
28.03.2017
09:05:53

F1 F2 F3 F4

With the F3 button you can select the Date and Time parameters and you can change the value with the F1, F2 buttons.

→ F3

DEVICE SETTINGS (PASSWORD CHANGE)

DEVICE SETTINGS
NEW TECH. PASSWORD

Date&Time Settings
Change Password

F1 F2 F3 F4

Use the F1 and F2 buttons to change the value of the parameter. Confirm the characters one by one by pressing F3 button.
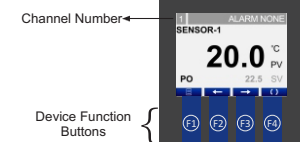
DEVICE SETTINGS (DEFAULT SETTINGS)

DEVICE SETTINGS
Default settings?
YES   NO

F1 F2 F3 F4
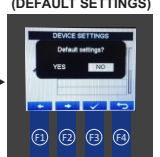
Use the F1 button to move to the "YES" tab and press the F3 button. In 1-3 seconds the device will return to factory settings.

→ F3

ℹ️ If the device has a optional ETHERNET communication then ETHERNET page is observed, otherwise this page is not observed.

ℹ️ If the device has a optional RS485 communication then RS 485 page is observed, If the device has a optional USB communication then USB page is observed.

ℹ️ If no operation is performed for 20 seconds in operator or technician parameters section, device turns to main operation screen automatically.

Operator Pages Parameters Definetions

Channel Number — 1   ALARM NONE
SENSOR-1

20.0 °C PV

PO   22.5 SV

Device Function Buttons — F1 F2 F3 F4

Alarm Set
Alarm set value for selected channel is can be adjusted according to this parameter. It can be adjust between -200 °C to +650 °C.

Pre. Alarm Set
Pre- Alarm set value for selected channel is can be adjusted according to this parameter. It can be adjust between -200 °C to +650 °C.

Operator Password Change
Operator Password for device is adjusted by this parameter.

ℹ️ If no operation is performed for 20 seconds in operator parameters section, device turns to main operation screen automatically.

Technician Pages Parameters Definietions

Technician Parameters

Channel Status
Channel is enabled and disabled by this parameter. If channel is selected as a disabled this channel is can not be observed in main operation scren for single view mode, channel alarm is not be controlled and analogue value for this channel is can not be recording on USB file. It can be adjust between 0 to 1. If parameter value,
  0 = DISABLE
  1 = ENABLE

Channel Name "Channels label definition "
All channels have their own label, is displayed in main operation screen. channel labels is can be adjusted by this parameter. Channel labels are can be adjusted maximum 10 characters.

Alarm Type
Alarm type for selected channel is can be adjusted according to this parameter.
It can be adjust between 0 to 2. Parameter values;
  0 = LOW
  1 = HIGH
  2 = BAND

PreAlarm Type
Pre-Alarm type for selected channel is can be adjusted according to this parameter.
It can be adjust between 0 to 2. Parameter values;
  0 = LOW
  1 = HIGH
  2 = BAND

Hysteresis
Hysteresis parameter value for Alarm and Pre-Alarm is can be adjusted by this parameter. It can be adjust between -400 °C to +400 °C.

Band Alarm
Bandwith for Band alarm is can be adjusted by this parameter value.
It can be adjust between -400 °C to +400 °C.

Offset
Process offset value for selected channel is can be adjusted by this parameter.
It can be adjust between -50.0 °C to +50.0 °C.

Sensor Alarm
Sensor break alarm for selected channel is can be disable or enable by this parameter.
It can be adjust between 0 to 1. Parameter values;
  0 = DISABLE
  1 = ENABLE

Control Parameters- Other Parameters

Screen Type
Main operation screen type is adjusted by this parameter.
It can be adjust between 0 to 1. Parameter values;
  0 = MULTIPLE
  1 = SINGLE

Screen Change
Display channel scanner mode is adjusted by this parameter.
It can be adjust between 0 to 1. Parameter values;
  0 = DISABLE
  1 = ENABLE

Change Time(sec)
Display scan period is adjusted by this parameter. All main operation screen is displayed during time defined by this parameter. It can be adjust between 1 to 3600 secs.

BackLightOnLevel
Display backlight is can be controlled by this parameter value. It can be adjust between 50 to 100.

BackLightOffLevel
ECO mode for backlight; in case off selection no backlight . This parameter is can be adjusted from 1 to 100.

BackLightOffTime
Time for the access to ecomomic backlight mode. This parameter is can be adjusted from 10 to 300.

Device Settings - RS-232 Settings

Baudrate
Modbus communication baudrate for RS232 is can be adjusted by this parameter.
It can be adjust between 0 to 5. Parameter values;
  0 = 4800
  1 = 9600
  2 = 19200
  3 = 38400
  4 = 57600
  5 = 115200

Parity
Modbus communication parity bit for RS232 is can be adjusted by this parameter.
It can be adjust between 0 to 2. Parameter values;
  0 = NONE
  1 = ODD
  2 = EVEN

Stop Bit
Modbus communication stop bit for RS232 is can be adjusted by this parameter.
It can be adjust between 1 to 2. Parameter values;
  1 = 1 Stop bit
  2 = 2 Stop bits

Id
Modbus communication device ID for RS232 is can be adjusted by this parameter.
This parameter value is can be adjusted from 1 to 247.

Device Settings - RS-485 Settings

Baudrate
Modbus communication baudrate for RS485 is can be adjusted by this parameter.
It can be adjust between 0 to 5. Parameter values;
  0 = 4800
  1 = 9600
  2 = 19200
  3 = 38400
  4 = 57600
  5 = 115200

Parity
Modbus communication parity bit for RS485 is can be adjusted by this parameter.
It can be adjust between 0 to 2. Parameter values;
  0 = NONE
  1 = ODD
  2 = EVEN

Stop Bit
Modbus communication stop bit for RS485 is can be adjusted by this parameter.
It can be adjust between 1 to 2. Parameter values;
  1 = 1 Stop bit
  2 = 2 Stop bits

Id
Modbus communication device ID for Rs485 is can be adjusted by this parameter.
This parameter value is can be adjusted from 1 to 247.

Device Settings - USB Settings (custom order option)

File Name
USB file name for recording analogue values is can be adjusted by this parameter. File name can be adjusted maximum 10 characters. Recording file on usb is "csv" format and all data is seperated each other with tab. Example file format is explained below.

Label
When the analogue values are recorded on USB file, user can be defined label for this recording. Label can be adjusted maximum 10 characters. Label are recorded at the end of every lines of file.

Date Record
When the analogue values are recorded on USB file, user can be save the recording time on the file. Recording time is recorded at the beginning of every lines of file.
It can be adjust between 0 to 1. Parameter values;
  0 = DISABLE
  1 = ENABLE

Record Time(sec)
Record time interval is can be adjusted by this parameter. Analogue values are recorded on USB file with this time interval.It can be adjust between 0 to 3600 secs. If this parameter value is 0 usb recording is disabled.

Flash Memory "USB Flash Memory Stick Detected Test"
Detection of the USB memory device being inserted is tested with this parameter. When the USB memory device is plugged in, the message "OK" is displayed.

Internal Recording
The device can record in memory. When a USB memory is inserted, the recordings are transferred to the USB memory with the file name containing the current date and time.(Exp: 2017-07-30-09-08-12-CHAN8.txt) 📁➔💾 icon and transaction status (%) are displayed on the screen until the transfer is complete.
If you want to eject the USB memory during transfer or recording; Press the F4 button for 5 seconds and the USB memory must be removed (within 5 seconds) before the 💾 icon on the screen disappears. If the USB stick is not removed during this time, the transfer will resume from where it left off.
Not: The device can store up to (Record time x 2) daily memos in its memory.

USB Recording File Example

Recording Time	CH-1 Value	CH-2 Value	CH-3 Value	CH-4 Value	CH-5 Value	CH-6 Value	CH-7 Value	CH-8 Value	Label
2011-06-23-17:26:09	130.6	129.1	130.5	129.5	130.0	129.9	130.3	129.1	SAMPLE
2011-06-23-17:26:10	130.6	129.1	130.5	129.5	130.0	129.9	130.3	129.1	SAMPLE
2011-06-23-17:26:12	130.6	129.1	130.5	129.5	130.0	129.9	130.3	129.1	SAMPLE
2011-06-23-17:26:13	130.6	129.1	130.5	129.5	130.0	129.9	130.3	129.1	SAMPLE

Device Settings - ETHERNET Settings (custom order option)

DHCP
DHCP is an automatic configuration protocol used on IP networks, If DHCP is enable, device is adjust our ethernet communication configuration parameters (IP, Netmask,Gateway) dynamaly for your network system. If DHCP is disable, you must adjust ethernet configuration parameters (IP, Netmask,Gateway) for your network system. It can be adjust between 0 to 1. Parameter Values;
  0 = DHCP DISABLE
  1 = DHCP ENABLE

Ip No
IP address for ethernet communication is can be adjusted by this parameter. If DHCP is selected as a enable there is no need to adjust to this parameter, if DHCP selected as a disable then user must adjust this parameter.

Port No
Ethernet port number is can be adjusted by this parameter.

Netmask
Subnet mask for ethernet communication is can be adjusted by this parameter. If DHCP is selected as a enable there is no need to adjust to this parameter, if DHCP selected as a disable then user must adjust this parameter according to the their own network system.

Gateway
Gateway for ethernet communication is can be adjusted by this parameter. If DHCP is selected as a enable there is no need to adjust to this parameter, if DHCP is selected as a disable then user must adjust this parameter according to the their own network system.

TcpIp Selection
TCP/IP Protocol is can be adjusted by this parameter. It can be adjust between 0 to 1.
  0 = Modbus RTU Over TCP/IP
  1 = Modbus RTU TCP/IP

Device Settings - Date and Time Settings
Date and Time for device is adjusted by this parameter.

Device Settings - Password Change
Technician Password for device is adjusted by this parameter.

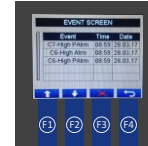**Device Settings -Default Settings**
This section is used to return default settings back.

Device Settings - Software Update
It allows you to update the device's software with a USB flash memory.

Logs
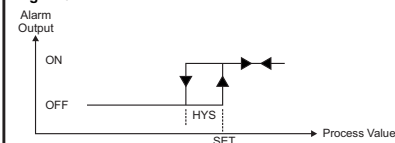In this page, events logs are shown.

Language Selection
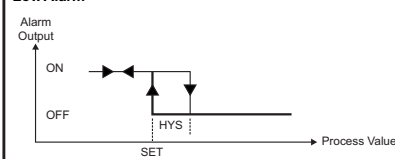In this page, the language is selected for the device.

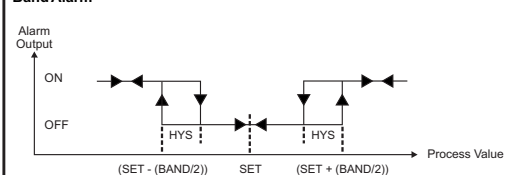## Operation Graphics of Alarm and Pre-Alarm Types

High Alarm

Low Alarm

Band Alarm

ⓘ **SET** = Alarm or Pre-Alarm Set value
HYS = Hysteresis value for Alarm and Pre-Alarm output
BAND = Bandwidth for Band Alarm.

Modbus Addresses

Output Status Addresses

Outputs Status Addresses		Unit	Address
CH-1 ALARM OUT	Channel-1 Alarm Output Status	-	00001
CH-2 ALARM OUT	Channel-2 Alarm Output Status	-	00002
CH-3 ALARM OUT	Channel-3 Alarm Output Status	-	00003
CH-4 ALARM OUT	Channel-4 Alarm Output Status	-	00004
CH-5 ALARM OUT	Channel-5 Alarm Output Status	-	00005
CH-6 ALARM OUT	Channel-6 Alarm Output Status	-	00006
CH-7 ALARM OUT	Channel-7 Alarm Output Status	-	00007
CH-8 ALARM OUT	Channel-8 Alarm Output Status	-	00008
GEN. ALR. OUT	General Alarm Output Status	-	00009
GEN.PRE.ALR. OUT	General Pre-alarm Output Status	-	00010

Note-1: Outputs status are can be readed with modbus function-1 (read coils). Device's response for modbus function-1 is always 2 byte data although the modbus function request less than 9 outputs port.

Process Values Addresses

Process Values Addresses		Unit	Address
CH-1 P. VALUE	Channel-1 Process Value	°C	30001
CH-2 P. VALUE	Channel-2 Process Value	°C	30002
CH-3 P. VALUE	Channel-3 Process Value	°C	30003
CH-4 P. VALUE	Channel-4 Process Value	°C	30004
CH-5 P. VALUE	Channel-5 Process Value	°C	30005
CH-6 P. VALUE	Channel-6 Process Value	°C	30006
CH-7 P. VALUE	Channel-7 Process Value	°C	30007
CH-8 P. VALUE	Channel-8 Process Value	°C	30008

Note-2: Process values are can be readed with modbus function-4 (read input register). Because of the process values are displayed on LCD screen with point, the reading values from modbus is 10 times than the real values.

Parameters Modbus Addresses

Parameter Values Addresses		Unit	Address
CH-1 NAME	Channel-1 Name	String	42000 - 42004
CH-2 NAME	Channel-2 Name	String	42005 - 42009
CH-3 NAME	Channel-3 Name	String	42010 - 42014
CH-4 NAME	Channel-4 Name	String	42015 - 42019
CH-5 NAME	Channel-5 Name	String	42020 - 42024
CH-6 NAME	Channel-6 Name	String	42025 - 42029
CH-7 NAME	Channel-7 Name	String	42030 - 42034
CH-8 NAME	Channel-8 Name	String	42035 - 42039
FILE NAME	USB File Name	String	42040 - 42044
LABEL	USB Label	String	42045 - 42049
CH-1 ALARM SET	Channel-1 Alarm Set Value	(•) °C	42050
CH-1 PRE A. SET	Channel-1 Prealarm Set Value	(•) °C	42051
CH-1 HYSTERESIS	Channel-1 Hysteresis Value	(•) °C	42052
CH-1 BAND ALARM	Channel-1 Bandwith Value	(•) °C	42053
CH-2 ALARM SET	Channel-2 Alarm Set Value	(•) °C	42054
CH-2 PRE A. SET	Channel-2 Prealarm Set Value	(•) °C	42055
CH-2 HYSTERESIS	Channel-2 Hysteresis Value	(•) °C	42056
CH-2 BAND ALARM	Channel-2 Bandwith Value	(•) °C	42057
CH-3 ALARM SET	Channel-3 Alarm Set Value	(•) °C	42058
CH-3 PRE A. SET	Channel-3 Prealarm Set Value	(•) °C	42059
CH-3 HYSTERESIS	Channel-3 Hysteresis Value	(•) °C	42060
CH-3 BAND ALARM	Channel-3 Bandwith Value	(•) °C	42061
CH-4 ALARM SET	Channel-4 Alarm Set Value	(•) °C	42062
CH-4 PRE A. SET	Channel-4 Prealarm Set Value	(•) °C	42063
CH-4 HYSTERESIS	Channel-4 Hysteresis Value	(•) °C	42064
CH-4 BAND ALARM	Channel-4 Bandwith Value	(•) °C	42065
CH-5 ALARM SET	Channel-5 Alarm Set Value	(•) °C	42066
CH-5 PRE A. SET	Channel-5 Prealarm Set Value	(•) °C	42067
CH-5 HYSTERESIS	Channel-5 Hysteresis Value	(•) °C	42068
CH-5 BAND ALARM	Channel-5 Bandwith Value	(•) °C	42069
CH-6 ALARM SET	Channel-6 Alarm Set Value	(•) °C	42070
CH-6 PRE A. SET	Channel-6 Prealarm Set Value	(•) °C	42071
CH-6 HYSTERESIS	Channel-6 Hysteresis Value	(•) °C	42072
CH-6 BAND ALARM	Channel-6 Bandwith Value	(•) °C	42073
CH-7 ALARM SET	Channel-7 Alarm Set Value	(•) °C	42074
CH-7 PRE A. SET	Channel-7 Prealarm Set Value	(•) °C	42075
CH-7 HYSTERESIS	Channel-7 Hysteresis Value	(•) °C	42076
CH-7 BAND ALARM	Channel-7 Bandwith Value	(•) °C	42077

CH-8 ALARM SET	Channel-8 Alarm Set Value (•)	°C	42078	
CH-8 PRE A. SET	Channel-8 Prealarm Set Value (•)	°C	42079	
CH-8 HYSTERESIS	Channel-8 Hysteresis Value (•)	°C	42080	
CH-8 BAND ALARM	Channel-8 Bandwith Value (•)	°C	42081	
CH-1 ALARM TYPE	Channel-1 Alarm Type	-	42082	
CH-1 PRE.A TYPE	Channel-1 Prealarm Type	-	42083	
CH-1 SENSOR ALARM	Channel-1 SensorBreak Alarm	-	42084	
CH-2 ALARM TYPE	Channel-2 Alarm Type	-	42085	
CH-2 PRE.A TYPE	Channel-2 Prealarm Type	-	42086	
CH-2 SENSOR ALARM	Channel-2 SensorBreak Alarm	-	42087	
CH-3 ALARM TYPE	Channel-3 Alarm Type	-	42088	
CH-3 PRE.A TYPE	Channel-3 Prealarm Type	-	42089	
CH-3 SENSOR ALARM	Channel-3 SensorBreak Alarm	-	42090	
CH-4 ALARM TYPE	Channel-4 Alarm Type	-	42091	
CH-4 PRE.A TYPE	Channel-4 Prealarm Type	-	42092	
CH-4 SENSOR ALARM	Channel-4 SensorBreak Alarm	-	42093	
CH-5 ALARM TYPE	Channel-5 Alarm Type	-	42094	
CH-5 PRE.A TYPE	Channel-5 Prealarm Type	-	42095	
CH-5 SENSOR ALARM	Channel-5 SensorBreak Alarm	-	42096	
CH-6 ALARM TYPE	Channel-6 Alarm Type	-	42097	
CH-6 PRE.A TYPE	Channel-6 Prealarm Type	-	42098	
CH-6 SENSOR ALARM	Channel-6 SensorBreak Alarm	-	42099	
CH-7 ALARM TYPE	Channel-7 Alarm Type	-	42100	
CH-7 PRE.A TYPE	Channel-7 Prealarm Type	-	42101	
CH-7 SENSOR ALARM	Channel-7 SensorBreak Alarm	-	42102	
CH-8 ALARM TYPE	Channel-8 Alarm Type	-	42103	
CH-8 PRE.A TYPE	Channel-8 Prealarm Type	-	42104	
CH-8 SENSOR ALARM	Channel-8 SensorBreak Alarm	-	42105	
TECH. PW.	Technician Section Password	-	42106	
OPR. PW.	Operator Section Password	-	42107	
CH-1 I/O	Channel-1 Enable/Disable	-	42108	
CH-2 I/O	Channel-2 Enable/Disable	-	42109	
CH-3 I/O	Channel-3 Enable/Disable	-	42110	
CH-4 I/O	Channel-4 Enable/Disable	-	42111	
CH-5 I/O	Channel-5 Enable/Disable	-	42112	
CH-6 I/O	Channel-6 Enable/Disable	-	42113	
CH-7 I/O	Channel-7 Enable/Disable	-	42114	
CH-8 I/O	Channel-8 Enable/Disable	-	42115	
CH-1 P.V OFFSET	Channel-1 Process Offset (•)	°C	42116	
CH-2 P.V OFFSET	Channel-2 Process Offset (•)	°C	42117	
CH-3 P.V OFFSET	Channel-3 Process Offset (•)	°C	42118	
CH-4 P.V OFFSET	Channel-4 Process Offset (•)	°C	42119	
CH-5 P.V OFFSET	Channel-5 Process Offset (•)	°C	42120	
CH-6 P.V OFFSET	Channel-6 Process Offset (•)	°C	42121	
CH-7 P.V OFFSET	Channel-7 Process Offset (•)	°C	42122	
CH-8 P.V OFFSET	Channel-8 Process Offset (•)	°C	42123	
RS232 BAUDRATRE	RS232 Baudrate Selection	-	42124	
RS232 PARITY	RS232 Parity Bit Selection	-	42125	
RS232 STOP BIT	RS232 Stop Bit Selection	-	42126	
RS232 ID	RS232 Device ID Value	-	42127	
DSP. TYPE	Main Operation Screen Type	-	42128	
DSP. SCAN	Display Scan ON/OFF	-	42129	
SCAN TIME	Display Scan Period	Sec	42130	
DSP BACKLIGHT	LCD Display Backlight Mode	-	42131	
RS485 BAUDRATRE	RS485 Baudrate Selection	-	42132	
RS485 PARITY	RS485 Parity Bit Selection	-	42133	
RS485 STOP BIT	RS485 Stop Bit Selection	-	42134	
RS485 ID	RS485 Device ID Value	-	42135	
LANGUAGE	Device Language Selection	-	42136	
SAVE TIME	USB Time Record Ena/Dis	-	42137	
SAMPLE TIME	USB Record Time Interval	Sec	42138	
DHCP	Dhcp Enable/Disable	-	42150	
ETH. PORT	Ethernet Port No	-	42151	
ETH. IP NO	Ethernet Ip No	-	42152	
ETH. NETMASK	Ethernet Netmask	-	42154	
ETH. GATEWAY	Ethernet Gateway	-	42156	
MAC ADR.	Device Mac Address	-	42158	

(i) **(•)** These parameters are displayed on LCD screen with point, so that the parameters values are 10 times than the real values for modbus function.

Installation

⚠ **Before beginning installation of this product, please read the instruction manual and warnings below carefully.**

In package ,
- One piece unit
- Two pieces mounting clamps
- One piece instruction manual

A visual inspection of this product for possible damage occured during shipment is recommended before installation. It is your responsibility to ensure that qualified mechanical and electrical technicians install this product.

If there is danger of serious accident resulting from a failure or defect in this unit, power off the system and separate the electrical connection of the device from the system.

The unit is normally supplied without a power supply switch or a fuse. Use power switch and fuse as required.

Be sure to use the rated power supply voltage to protect the unit against damage and to prevent failure.

Keep the power off until all of the wiring is completed so that electric shock and trouble with the unit can be prevented.

Never attempt to disassemble, modify or repair this unit. Tampering with the unit may results in malfunction, electric shock or fire.

Do not use the unit in combustible or explosive gaseous atmospheres.

During the equipment is putted in hole on the metal panel while mechanical installation some metal burrs can cause injury on hands, you must be careful.

Mounting of the product on a system must be done with it's fixing clamps. Do not do the montage of the device with inappropriate fixing clamp. Be sure that device will not fall while doing the montage.

It is your responsibility if this equipment is used in a manner not specified in this instruction manual.

Maintenance

Repairs should only be performed by trained and specialized personnel. Cut power to the device before accessing internal parts. Do not clean the case with hydrocarbon-based solvents (Petrol, Trichlorethylene etc.). Use of these solvents can reduce the mechanical reliability of the device. Use a cloth dampened in ethyl alcohol or water to clean the external plastic case.

Other Information

Company Information:
Kessler-Ellis Products
10 Industrial Way East
Eatontown, NJ 07724

Phone: 800-631-2165 or 732-935-1320
Fax: 732-935-9344
Email: info@kep.com
Web: www.kep.com

Ordering Informations

Model Number	Description
mL-CS8A	8 Channel RTD PT-100 Scanner 1/4 DIN Case 100 to 240 VAC Supply Voltage (-15%; +10%) 50/60Hz PT-100 Inputs 10 Relay Outputs with 2 common for each NO (5A @ 250VAC with Resistive Load), for each common contact 15A max. (15A @ 250VAC with Resistive Load) RS-485 & RS-232 Serial Communication with Modbus RTU Protocol

KEP m LINE