Instructions Manual

ICD 15 R

**Direct Contact Text Display with
Remote Reset and Remote Silencing**

INTEREL ®

FOREWORD

Any electrical system or electrical machine is equipped with a control panel, which not only controls the device or system but also provides real time information on the state of the user outlets or signals possible anomalies resulting from a general failure or from incorrect command sequences.

This information must comply with specific characteristics:

the immediate understanding of what is happening;

the clear and immediate signaling of an anomaly reduces to the minimum intervention time thus limiting

damage to objects or people.

Electrical equipment manufacturers have worked in recent years to find more qualifying solutions, which can render the management of messages or alarms of an electrical system or machine much easier.

ICD 15 R is a device, which can contribute to real time management of signals or anomalies.

They replace the traditional green and red LED, which are now obsolete for modern requirements.

This device compactly provide written information on what is taking place by transforming a normal electrical contact into a clear, precise and immediate indication.

(ICD 15 R)

Recessed   indicator

INDEX

CHARACTERISTICS

- **2 x 16 character LCD display**
  with background lighting

- **15 signaling keys**
  with 2 main lines and 2 sub-lines

  Possible end user's settings:
  15 Messages - 1 Output (basic setting)
  14 Messages - 2 Outputs
  13 Messages - 3 Outputs

- **1 input for remote reset and silencing**
  clamp nr.16

- **1 basic text**
  composed of 2 lines

- **1 end cycle text**
  composed of 2 lines

- **2 indication modes**
  first signaling, cyclical indication

- **saving of messages**
  in chronological order and providing the total of the messages present in the last characters of the top line

- **1 basic central alarm output**
  output for central alarm connection, to have a sound effects you must to connect even a 24 VDC buzzer.

- **2 opzional alarm outputs**
  to have a sound effects you must to connect even a 24 VDC buzzer.

  Is possible to set the optional alarm outputs, you have only to change the position of the internal jumpers. (see page 24)

- **text programming via front keys or PC with CP11 cable**

Normally open or closed direct contacts (ICD in basic setting)

N.B.: *You can select, one by one, each direct contact as normally open or closed.*

You can select, one by one, for each direct contact the preferred output.

- **In the 2002 ICD series, there is an internal extractable fuse 1A (dim. 5x20mm)**

CONNECTIONS

In order to assure proper functioning it is recommended to maintain the minimum distance between the indicator and high voltage, high frequency and large current load sources. This distance must be no lesser than 25 cm. The indicator connection cables must not be laid within cable troughs together with power or high voltage cables.

ICD 15 R
Rear Layout

OPERATING VOLTAGE	12...28V AC/DC
OUTPUT REMOTE	250 mA MAX
POWER	3,0W+OUT REMOTE
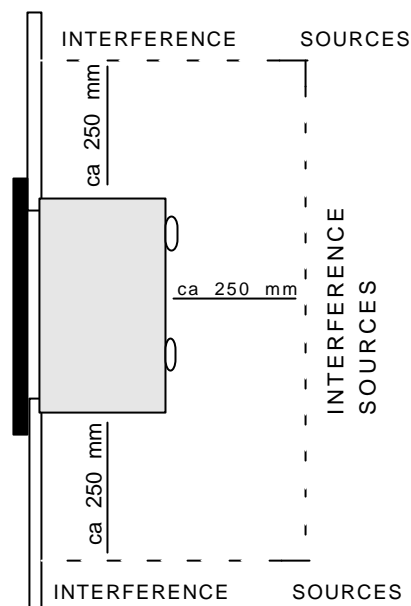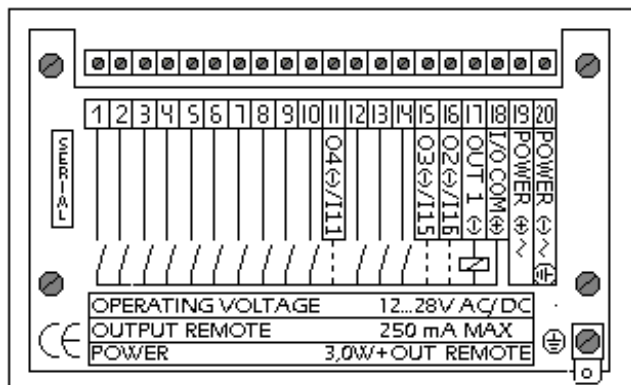
Description of the single clamps

1- 10 + 12, 13 e 14
Alarm inputs. Each alarm is activated or deactivated with a positive signal from OUT+. The signal must be active at least for 100 msec.

11, and 15 (IN or OUT contact setting)
As above for the basic characteristics.
The difference is the following: if you change the basis internal jumpers position, you set the contact from IN to OUT.

16 - (OUT-)
Clamp for remote reset and silencing

17 - (OUT-)
Primary central alarm output

18 - (OUT +)
Positive Output for the contacts and central alarms.

19 (POWER +)
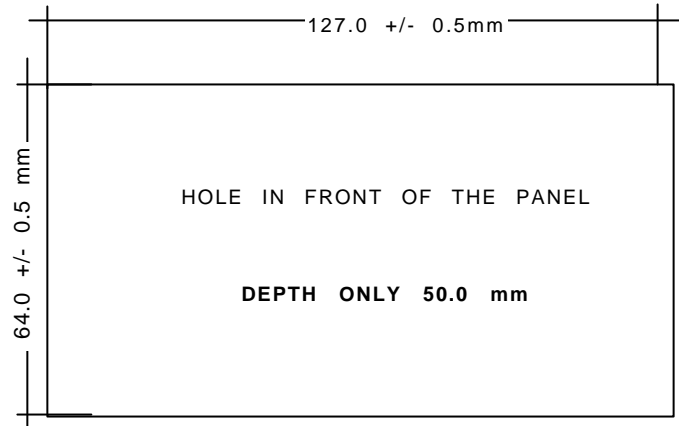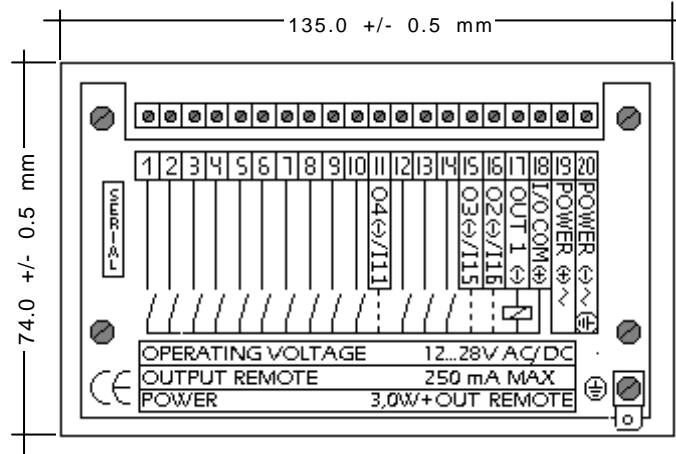Power supply **12...28 V DC/AC**

20 (POWER-)   0V.

SERIAL   (ICD)
To connect the CP11 cable.

N.B.: *the use of the central alarm outputs, requires that a relay be connected to contact OUT+ and OUT-. The relay must function at 24 V/DC irrespective of whether the ICD 16 is powered in AC or DC.*

TECHNICAL DATA AND DIMENSIONS

Operating voltage.....................................**12- 28V DC /AC**

Absorption.......................................120 mA (con 24VDC)

Display...a LCD retroilluminato

Characters per line...16

Number of lines...2

Character height...8 mm

Messages..15

Text memory...EEPROM

Connection.............................extractable terminal board

Front protection level..IP 65

Input Voltage.......................................from 12 to 28 VDC

Input Current...0,5 mA (24 VDC)

Operating temperature.......................................0 a 50 °C

Storage Temperature.....................................-25 a 70 °C

Internal extractable fuse (5x20 mm).............................1A

FUNCTIONING

When the indicator is switched on, the following message appears:

This message is shown for 2 seconds after switching on the device and at the end of the programming procedure.

Visualization   type

FIRST:

When no alarm is present the basic text is displayed (line 1 and line 2). For example: Company name and Phone number. When an alarm input is activated, the corresponding text is displayed (line 1 and line 2) and a central alarm remote output is activated. This text remains on the display.

In upper right hand of the display a number indicating the total of alarms present appears.

The total number of alarms is indicated only in the message of the first alarm activated.

In down right of the second help line (press the key [icon] to see these lines) you can see which output is activated.

CYCLE:

When no alarm is present, the basic text is visualized (line 1 and line 2). For example: Company name and Phone number. When an alarm input is activated, the corresponding text is displayed (line 1 and line 2) and a central alarm remote output is activated. This message is visualized cyclically together with the end cycle message (END CYCLE) with a scanning operation of approximately 2 seconds.

The activation of a new alarm leads to its inclusion in the visualization cycle.

The alarms are displayed chronologically in their order of activation.

The message appearing after the end message text is the first alarm in order, then comes the second and so on.

The number in the upper right hand of the end cycle message indicates the total of alarms detected.

In down right of the second help line (press the key [icon] to see these lines) you can see which output is activated.

[warning triangle icon]   *It is highly recommended not to use the last digit of the messages to enter numbers.*

For   example:

LOCAL   ALARM   1   *not   recomended*

LOCAL   1   ALARM   *recomended*

FUNCTIONING

Operating   mode

M E M :

The alarms are self-retained, i.e. they are displayed in any case even if the corresponding input returns to idle mode.
Every alarm is saved only the first time.
The central output alarm is activated only the first time even if the same alarm appears more than once (see page 9).

N O _ M E M :

The display always shows the current situation and if an alarm returns to idle mode it is deleted.

Input   polarities

With "+" and "-" the polarity of each input can be set.

+   The alarm is activated with the positive signal   (the NO contact closes)

-   The alarm is activated when the positive signal is missing   (the NC contact opens)

Central   Alarm

In Outputs
Primary: **OUT 1(-)** (Clamp 17) *Optionals:* **O3(-)/I15** (Clamp 15) - **O4(-)/I11** (Clamp 11)
a relay for each central alarm can be connected.
The relay must be connected between the **I/O COM(+)** and Output (-) clamps.(Primary or optionals)
As soon as an input is activated, a relay is energized and activates an acoustic signal.

If operating in **MEM** mode (with saving) the output **OUT 1(-)** is active until the silencing key is pressed.

If it is operating instead in NO_MEM mode, as soon as all the inputs are deactivated also the OUT- output is cancelled.

The OUT 1 (-) output is silenced with the key. The same thing if you use the optional outputs too.

N.B.
With the "#" character in the last position of the fourth line of the message, the central alarm function for this message can be deactivated.
If you set instead the **"1"**, **"3"**,**"4"**, even in the last position of the fourth line of the message, is possible to set for each contact one by one, the output wants.
As default is even the output **"1"** in all the messages setted.

For   example: *while   programming*

| input 1   line 4 |
| Valve Group   # |

                                      in function
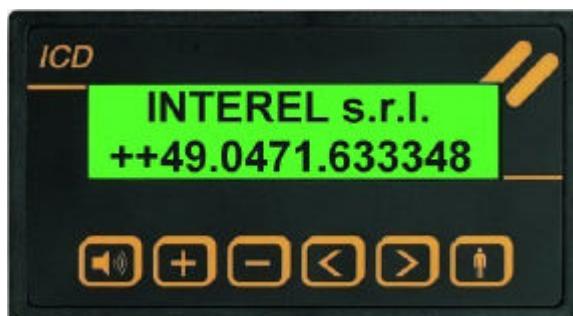   *pressing the key*

| Phone |
| Maintenance   # |

FUNCTION   KEYS

The six front keys have the following functions irrespective of the selected visualization mode:

"Siren" key: idling of **OUT-** for existing alarms

"**+**" **key:** the first alarm is visualized

"**-**" **key:** the text on the display is blocked (in case of cyclical operating)

"**<**" **key**: the previous alarm is visualized

"**>**" **key**: the next alarm is visualized

"**Man**" **key:** by pressing it, the sub-lines of the alarms present on the display are shown

Keys "-" e **"<"** pressed togather
alarm cancel command (RESET).

ALARM   MANAGEMENT

If the no saving operating mode (NO_MEM) is selected, the displayed messages indicate the current input status in order in which they are activated.

If the operating mode is in save (MEM), the displayed messages indicate which alarms were activated before the last cancel operation in the chronological order in which they occur.

This operating mode is to be selected for temporary alarms.

ALARM   CANCELING

Should the operating mode be no save (NO_MEM), there is no need for the canceling procedure.

Should this not be the case and the operating mode is MEM canceling is needed to cancel the status, i.e. all the saved alarms are deleted.

Please note that, if more than one alarm is left despite canceling, the order in which it is saved again is provided by the position, i.e. input 1 is saved before 2, 2 before 3, etc.

Se il tipo di funzionamento è senza memorizzazione (NO_MEM), la procedura per la cancellazione è inutile.

Nel caso contrario (MEM) la cancellazione serve per azzerare la situazione, cioè vengono cancellati tutti gli allarmi memorizzati.

Da notare che se, nonostante la cancellazione, più di un allarme resta presente, l'ordine in cui viene nuovamente memorizzato è dato dalla posizione. Cioè l'input 1 verrà memorizzato prima del 2, il 2 prima del 3 ecc.

Cancel   Procedure:

You can have a cancel procedure with remote resetting and remote silencing if you connect the clamps 16 (-) and 18 (+) with an external switch.

Normal cancel procedure by pressing together the keys [<] and [—].

The following message appears on the display:
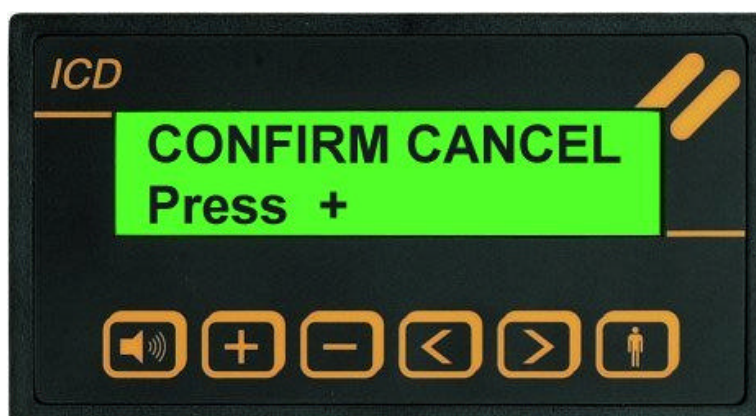
Should there be no reply within 5 seconds, the command is deleted.

By pressing the [+] key, all alarms are cancelled.

PROGRAMMING

1) Access to programming is provided by pressing simultaneously the "siren" and "man" keys when switching on and only after do that, start the power supply to the instruments.
The display will show the following message "**CYCLE   MEM**".

If instead you will see the message "**WAIT PLEASE**", it does mean that the keys will be not right pressed.
In this case you are not in programming mode, so you must to try again.
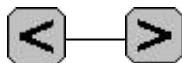
To exit programming, press simultaneously "<" and ">" keys.
To make the programming operative, you must to switch off the text display and then restart it again.

2) To continue programming proceed as follows::

Select the message to be added or modified with the [+] and [−] keys.

To modify the selected message press simultaneously the [<] or [>] key and on the display appear one cursor.

(For example:like under the character **A** in the foto below.)

[+] scroll the messages ahead

[−] scroll the messages back

[<] to modify the selected message

[>] to modify the selected message
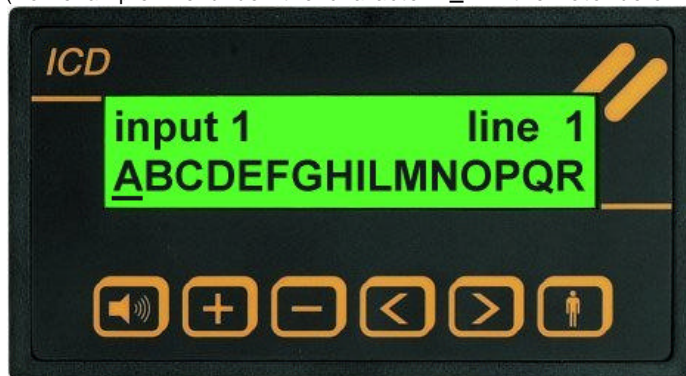
⚠ *The programming of messages are saved only when
the "siren" and "man" keys are pressed together toconfirm the operation.*
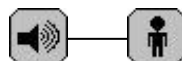
Should a message be modified by mistake, just end the programming operation without confirming to return to the previous status. By doing so, the message on the display is not loaded and the previous message appears when entering programming again.

PROGRAMMING

Key functions during the modification or entering of messages

"+" key: it increases the character underlined by the cursor. The characters are letters of the alphabet from A to Z (capital and lower case), special characters, numbers from 0 to 9 and the letter A again.
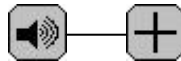

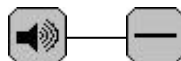**"-" key**: it decreases the character indicated by the cursor.

"<" key: shift the cursor to the left.

">" key: shift the cursor to the right.

"sirens" and "+" keys: the letter "A" appears in the digit indicated by the cursor.

"sirens" and "-" keys: the "#" symbol appears in the digit indicated by the cursor.

"sirens" and "<" or " >": the character signaled by the cursor is copied on the right (>) or on the left (<).

PROGRAMMING

COPYING   OF   TEXTS

While in programming mode messages can be copied from one line to another by proceeding as follows:

1)   Press the key [<] to enter the characters of the line in question into the program.

2)   Press [+] and [†] keys togather to cancel the exeisting message.

3 a)   By keeping the [†] key and the [+] key pressed the lines to be copied scroll ahead.

Once the line to be copied is selected and visualized on the display, release both keys.

Confirm the programming of the line by pressing the [†] and [◀))] keys.

3 b)   By keeping the [†] key and the [—] key pressed, the lines to be copied, scroll back.

Continue with the procedure outlined above in **3a)**

The lines entered with this procedure can be modified whenever.

N.B.: there no additional lines for the "basic text" and the "end cycle" text.

SETTINGS

As soon as it is activated, the program appears on the display:

By pressing the [<] or [>] key the cursor is visualized.

With the [<] and [>] keys move horizontally along the display and with the [+] and [−] keys set the IN parameters.

By pressing simultaneously the [◀»] and [👤] keys the changes are saved. If the changes are incorrect, press together the [<] and [>] keys and exit the program without saving the settings.

Visualization Type:

FIRST
The first alarm activated is visualized (see page 6).

CYCLE
All the alarms present in the cycle together with the end cycle message are displayed (see pg. 6).

Operation Mode:

MEM
The alarms are self-retained, i.e. they are displayed in any case even if the corresponding input returns to idle mode.

NO_MEM
The display always shows the current situation and if an alarm returns to idle mode it is deleted (see pg. 7)

Input polarities:
(see pg. 8)

The second line is set with the **+** key (input normally open) or with the **-** key (input normally closed).

The leftmost position corresponds to input 1, the rightmost corresponds to input 16.

This setting is valid for **ICD 16** and **ICD 15R** but not for ICD in binary mode.

GENERAL   MESSAGES   RULES

The messages are programmed line by line.
Each message is made up of four lines.

1)   On the display, the line visualized on top indicates which of the 4 lines available for each message is being programmed.
The bottom line visualized, indicates where you must compose the message you want display.

    line 1 = top line of the main message
    line 2 = bottom line of the main message
    line 3 = top line of the additional message
    line 4 = bottom line of the additional message + nr. of the central alarm output

2)   The "**no alarm**" and "**end cycle**" messages are each composed of only two lines (1 and 2).
The programming is the same as the point 1)

Example:
Idle message line 1

Example:
Messagge 1 line 1

Messagge 1 line 4

GENERAL   MESSAGES   RULES

The order in which the messages are visualized on the display is the following:

```
zero input - L1........basic text 1          (Example: Company  Name     )
zero input - L2........basic text 2          (Example: Phone   Number    )



end cycle - L1........end cycle text 1       (Example:   MESSAGE  )
end cycle - L2........end cycle text 2       (Example: END  CYCLE  )



input   1 line 1........input message 1 Line 1 (Example:    BOILER   )
input   1 line 2........input message 1 Line 2 (Example:    ALARM    )
input   1 line 3........input message 1 Line 3 (Example: PHONE  TO   )
input   1 line 4........input message 1 Line 4 (Example: SERVICE  1  ) number of the output
            :
            :
input 15 line 4.......input message 15 Line 4
```

SERIAL PROGRAMMING VIA PC

The device is equipped with a connector with which it can be connected to a PC RS 232 serial port by means of a special programming cable **(CP11)**.
To programm the text disply from PC you can use only our **Indysoft.**
It's even possible to programm the ICD with the front keys.
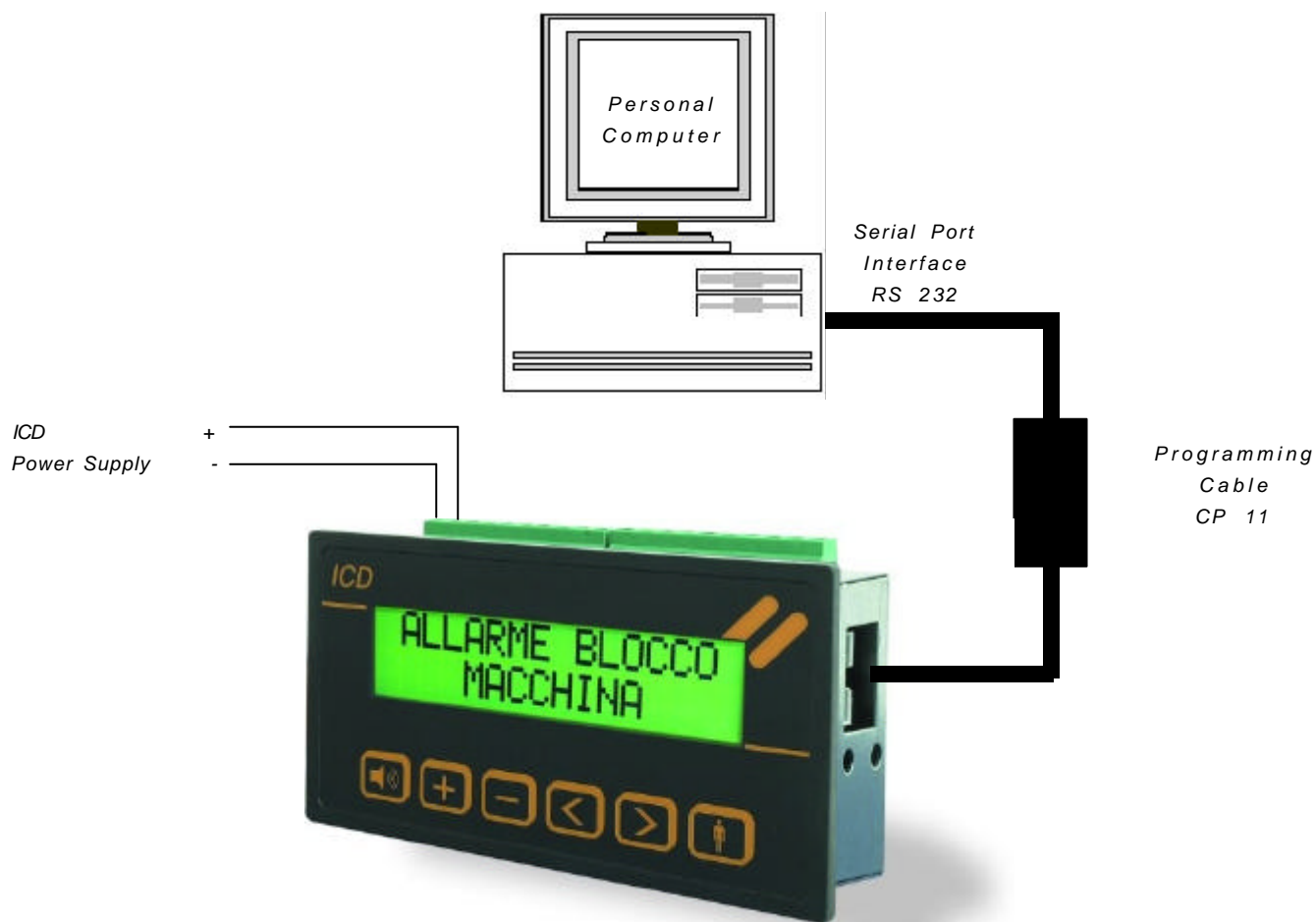The text display must be powered !!!

CP11 Programming Cable

In order to connect the PC with the indicator, the CP11 programming cable is needed.

The cable is equipped with:

- *PC connector (9-pole female)*
- *connector for the text indicator*
- *interface powered by the indicator*
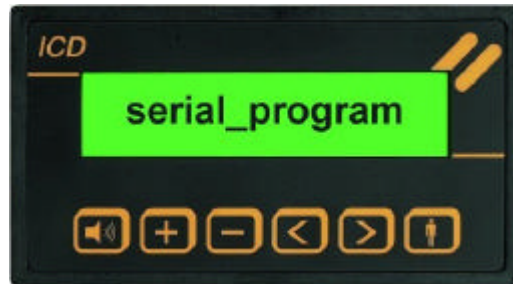
The cable is supplied upon request.

SERIAL   PROGRAMMING   VIA   PC

Once the file is created in the PC, it must be transferred into the indicator.
Proceed as follows:

- connect the **CP 11 programming cable** to the PC (on serial port RS 232) and to the **ICD 15 R** indicator.
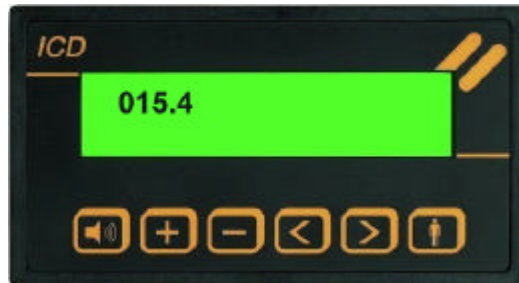
The following message appears on the display:

Set the COM in Indysof from which you can send the txt.file to the ICD with the command **SEND.**

The programmed message lines are indicated on the display.
At the end of the programming procedure the last line to be programmed is indicated:

The indicator is now programmed:

- disconnect the programming cable.
        To make the programming operative, you must to switch off the text display and then restart it again

Should the **ERROR   Press +** message appear, check the message file. There may be one of the following syntax errors.

- message has more than 16 characters.
- you miss to set the output number in the last character of the fouth line
- the programming cable was disconnected before the end of the data transmission.

PROGRAMMING ICD 15 R

Example of file

SETTINGS OF FIRST, CYCLE, MEM, NO_MEM and INPUT LEVELS

CYCLE   MEM

+ + + - - + + - + + + + + - -

|		
	COMPANY	*LINE 1 (Idle Mode)*
	NAME	*LINE 2 (Idle Mode)*
	END CYCLE	*LINE 1 (End Cycle Message)*
	FINE CICLO	*LINE 2 (End Cycle Message)*
Alarm 1	**OIL PUMP**	*LINE 1 (Primary Line)*
Alarm 1	**IN STOP**	*LINE 2 (Primary Line)*
Alarm 1	**SWITCH OFF**	*LINE 3 (Additional Line)*
Alarm 1	**CALL SERVICE 1**	*LINE 4 (Additional Line + output nr.)*
	....	
Alarm 15	**OIL**	*LINE 1 (Primary Line)*
Alarm 15	**FINISHED**	*LINE 2 (Primary Line)*
Alarm 15	**REFUELLING**	*LINE 3 (Additional Line)*
Alarm 15	**Ph. 0471633348 #**	*LINE 4 (Additional Line + output nr. - deactivied)*

In order to set the indicator operating mode, use line 000,0:

C Y C L E	Cyclical visualization of messages
F I R S T	Visualized for the first alarm
M E M	The alarms are saved
N O _ M E M	The alarms are not saved
+ -	Input polarities from 1 to 15

The # character is used to exclude the central alarm (OUT -). By adding the # character at the end of the fourth message line,the central alarm output is NOT activated (for example line 015,4).
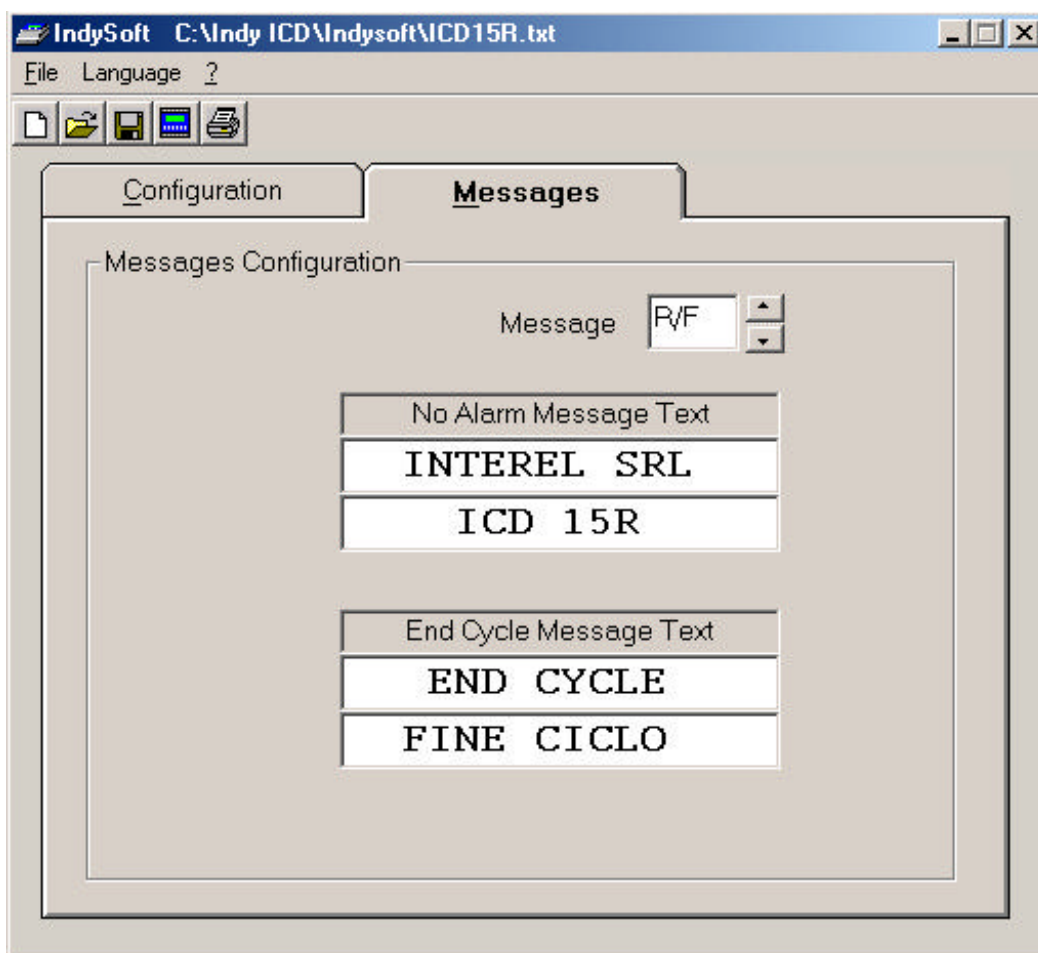
Indysoft

After clicked on **File**, click on **Open**, you will see the start page
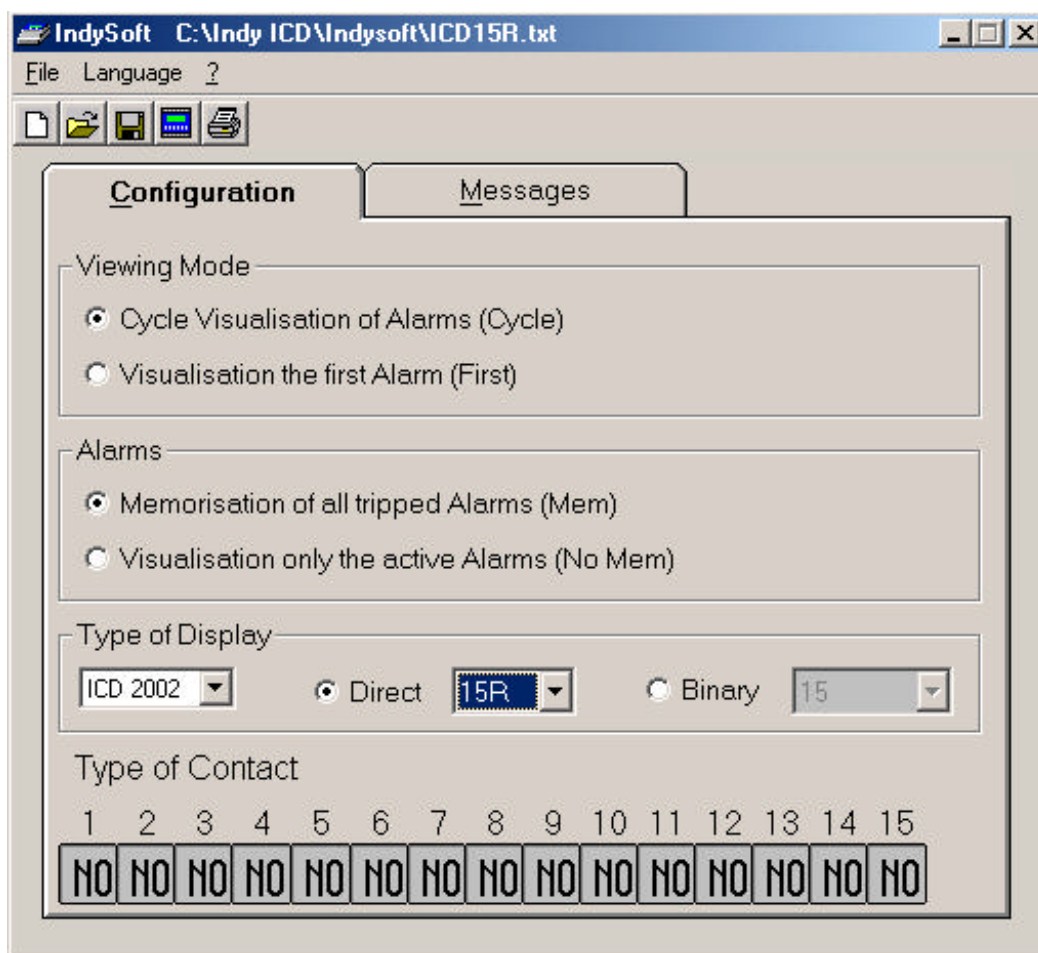
In this page you can set the right type of the text display you bought, the inputs polarities, the visualisation mode and the type of the memorization of the messages.
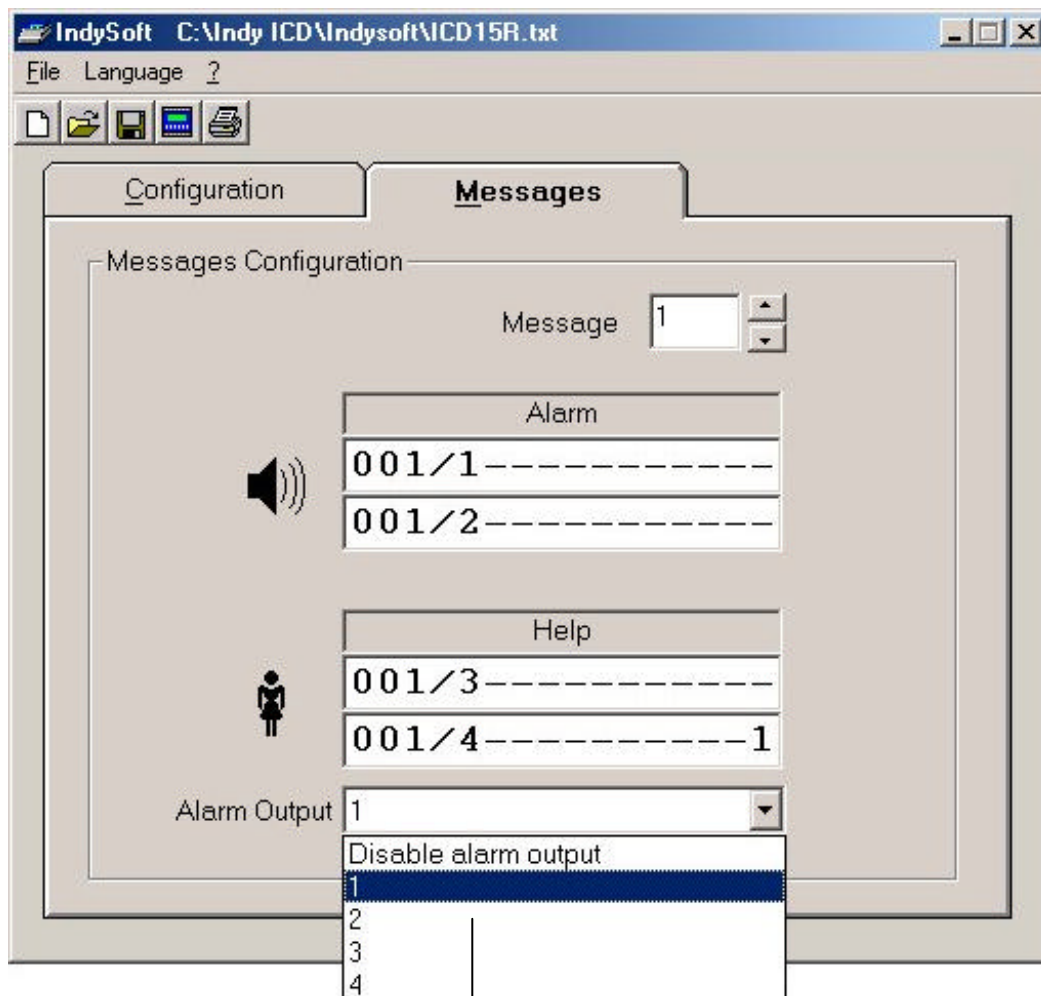
Indysoft

Page for *idle* and *end cycle* messages:

In this page you can set the *idle* and the *end cycle* messages.
If you click on the arrow up on the right, it will show the other messages to set.

Indysoft

In this page you can set the text of the messages and the output you will choise for each message:
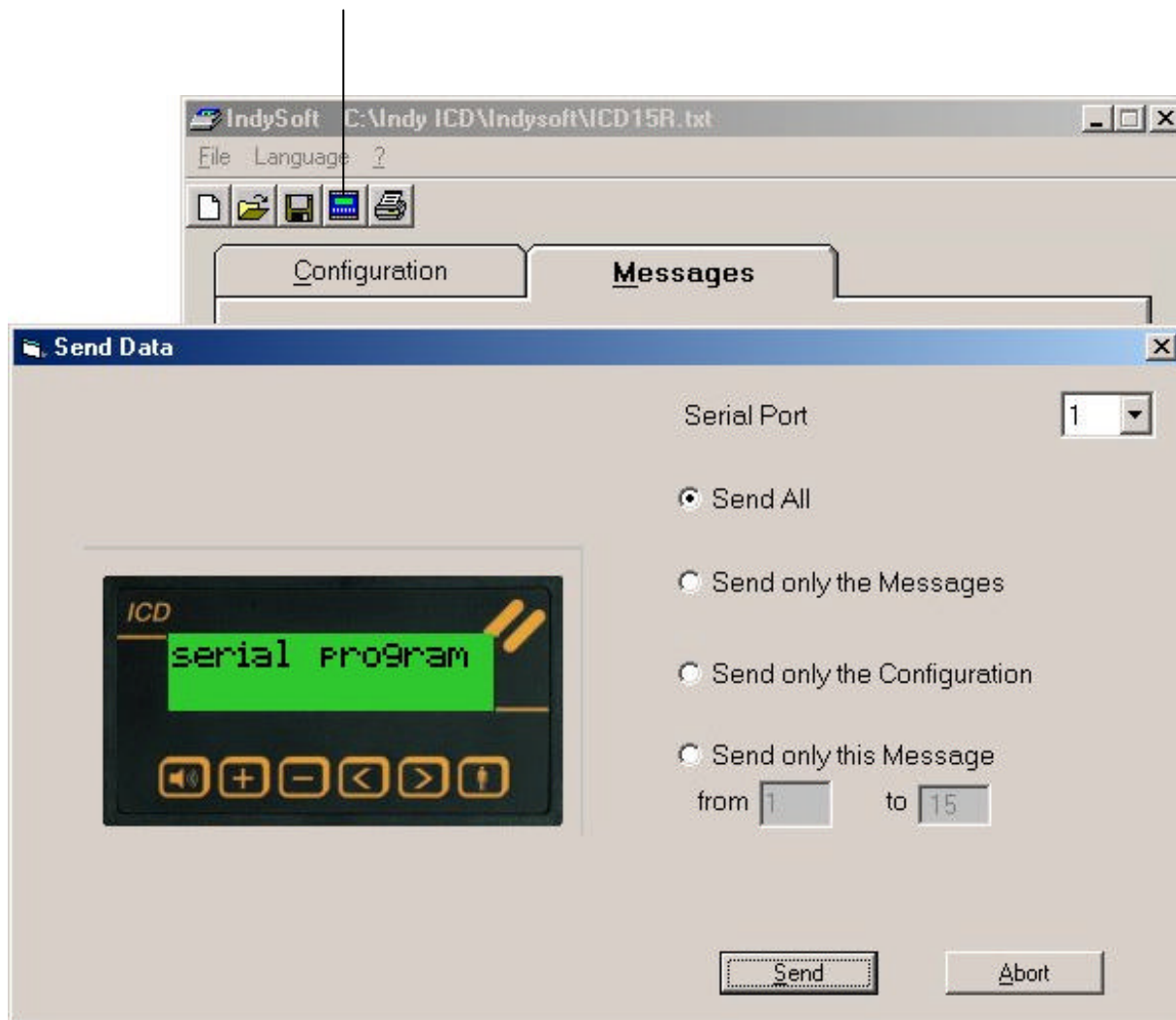

Here you can set the output for the message

Before to set the outputs nr. 3 and 4, you have to set the right position of the internal jumpers in the text display.

Indysoft

Data trasmission page from the PC to the text display:
To get in in this page you have to click in the botton unter the question mark.

After setted the type of date you want to transmit to the text display, click on the button *transmit.*

On the display of the ICD, you will see some numbers running.
When they stop you must to disconnect the CP11 cable.
To confirm the setting in the EEPROM, you have to switch off and to restart the ICD.

Hardware
Position of the extractable fuse and of the I/O jumpers

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
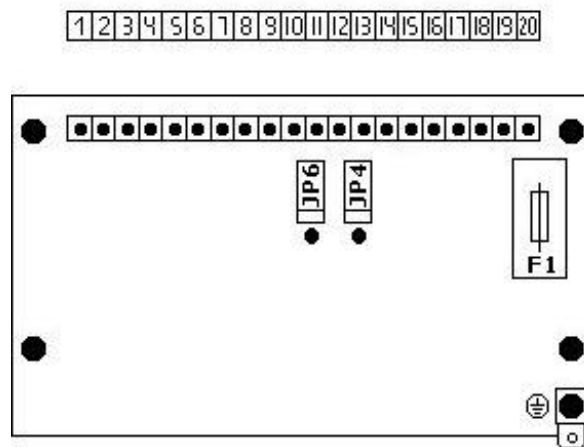
F1 = extractable Fuse

jumper JP4 = O3 (-) / I 15 setting

jumper JP6 = O4 (-) / I 11 setting

To change the contacts 11, 15 e 16 from IN to OUT, you have only to switch off the ICD, remove the rear and to move the jumpers from he default position to the other possible.

For the replacement of the fuse, you have only to remove the cap and replace it.