DATEXEL

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DATESOFT
Version 2
User Guide

GENERAL DESCRIPTION

DATESOFT is a software developed by Datexel srl, running under the operative system Windows® designed to program and visualize the measure of the converters programmable by PC listed in the table below. To operate with DATESOFT it is necessary to use the programming interface (PRODAT) between the P.C. and the device on programming.

DEVICE / INTERFACE	PRODAT-04 / PRODAT USB
DAT 4530	✓
DAT 4531 A	✓
DAT 4531 B	✓
DAT 4531 C	✓
DAT 4531 D	✓
DAT 4532 A	✓
DAT 4532 B	✓
DAT 4532 C	✓
DAT 4532 D	✓
DAT 4631 A	✓
DAT 4631 B	✓
DAT 4631 C	✓
DAT 4631 D	✓
DAT 4632 D	✓
DAT 4540	✓

✓ = usable interface.

To connect devices and interface refer to the relative technical Data-sheets .

SYSTEM REQUIREMENTS

Operative System	Windows® 98 / 2000 / NT / ME / XP / Vista / Win7
Available Hard Disk space	2 MB

PROCEDURE OF INSTALLATION

• Close eventual active or background applications .
• Insert the installation CD-ROM into the driver.
• Wait for the Autorun' s window opening .
  If the Autorun function is disabled, open the CD-ROM and execute the installation file using the path:
 <CD Driver>:/doc/download.html
• Click on the button Tools.
 Click on the button "download" in the section DATESOFT.
• Follow the Installation Wizard.

OPEN DATESOFT

Connect the programming interface PRODAT to the Com port of the PC.
If the programming interface is the PRODAT USB, verify the Com port number assigned to it by Windows® during its installation (go to Control Panel – System and Maintenance - Device Manager).
Connect the PRODAT to the device by the proper cable as shown in the device's data-sheet.
Power on the device.
Be sure that the Com port selected is not used by other applications or programs.
Execute the program at the path "Start \ Programs \ DATESOFT \ DATESOFT".
When the software is running, the default window appears (Picture 1).
Set the number of the Com port (1, Picture 1).
Click on the button "Open Com"(2, Picture 1); the program tries to communicate with the device. If the communication ends correctly, the led of communication becomes green. (3, Picture 1) .
When active, DATESOFT allows the user to:
• program the device by PC(Program mode)
• visualize the measure ("Measure" mode) ;
• control the dip-switches settings and configure them (Switch mode).

MENU BAR (Picture 1)

- *Menu "File"* : contains the commands to open and save the configuration files.
   Open : allows the user to open a configuration file previously saved with the format (*.DST).
   Save: allows the user to save the configuration in use overwriting the existing file.
   Save as: allows the user to save the configuration in use creating a new file or overwriting an existing file (*.DST).
- *Menu "View"* : contains the commands to recall the mode windows of the software.
   Measure : allows to recall the Measure mode window.
   Program: allows to recall the Program mode window.
   Switch: allows to recall the Switch mode window.
- *Menu "Action"* : contains the following action commands.
   Program → read: allows the user to read the configuration data from the device in the "Program" mode.
   Program → write: allows the user to send the configuration data to the device in the "Program" mode.
   Measure → start: starts the reading of the data measured from the device in the "Measure" mode.
   Measure → stop: stops the reading of the data measured from the device in the "Measure" mode.
- *Menu "?"* : contains the information about DATESOFT and a direct link to the DATEXEL website.
- *Command "Exit"* : allows to exit DATESOFT.

TOOLBAR (Picture 1)

- *Button "Com" (1)*: allows to set the number of the Com port (port numbers available from 1 to 8).
- *Button "Open/Close Com"(2):* enables (Open Com) or stops (Close Com) the communication with the device.
- *Filling bar and led of communication (3)* the filling bar shows the progress of the data transmission from DATESOFT to the device. The red led shows the data transmission in progress, the green led the end of it.
   In the "Measure mode", when the data transmission is continuous, the led blinks from red to green.
- *Label "Version"(4):* shows the type and version of the device connected.
- *Button "View measure"(5):* allows to move to the "Measure" mode window (if it is still open) or to open it.
- *Button "View program"(6):* allows to move to the "Program" mode window (if it is still open) or to open it.
- *Button "View switch"(7):* allows to move to the "Switch" mode window (if it is still open) or to open it.
- *Button "Read"(8):* when the "Program" and/or the "Switch" mode windows are active allows to read the programming data from the device.
- *Button "Write"(9):* when the "Program" mode window is active allows to send the new programming data to the device.
- *Button "Start / Stop"(10):* starts or stops the reading of the data measured from the device in the "Measure" mode.
- *Button "Language"(11):* allows to set the language (English or Italian) of DATESOFT.

MEASURE MODE (Picture 2)

Picture 2 – Measure mode active
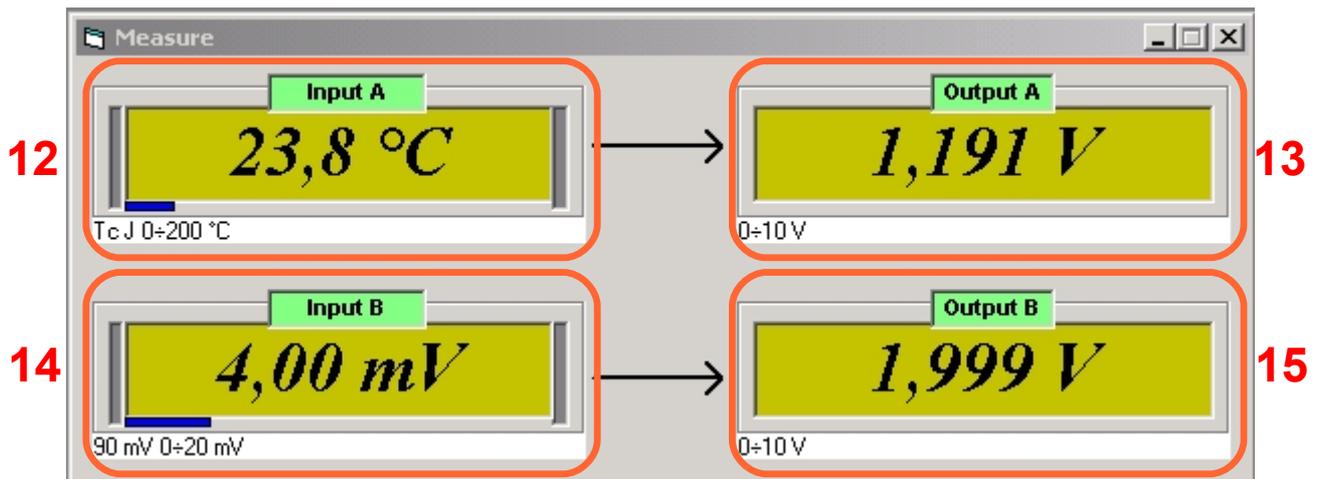
The "Measure" mode window allows to visualize, in real time, the input and output measures.
This window appears clicking on the button "View measure" (5-Picture 1) on the Toolbar and works only if the communication with the device has been enabled (button Open Com, 2-Picture 1) .
To start the measure, click on the button "start/stop" (10-Picture 1) on the Toolbar; to stop the measure click on the same button. It is also possible to do these operations use the action commands described in the section "Menu action".
It is possible to visualize the measures either if the device has been programmed by PC or by dip switches.
- Sections "Input A" (12) and "Input B" (14): visualize the input measures of each channel expressed in the engineering unit programmed; the input type and range programmed are shown on the bottom left side of the each section.
- Sections "Output A" (13) and "Output B" (15): visualize the output measures of each channel expressed in the engineering unit programmed ; the output type range programmed are shown on the bottom left side of the each section.
The sections 12, 13, 14 and 15 will be visualized in function of the type of device connected:
• DAT 4531 series: visualization of the sections 12 and 13.
• DAT 4532 series: visualization of the sections 12, 13, 14 and 15.
• DAT4530 and DAT 4631 series: visualization of the sections 12, 13 and 15.
Note: for the DAT4530 this window shows the trip alarm status by one led set to the following condition:
Red: active alarm.
Green: not active alarm.
Yellow: changing of the alarm state in progress (delay)

PROGRAM MODE

By this window it is possible to set the parameters of configuration and to save them in Eeprom.
The input and output parameters programmed by this window will be active only if all of the dip-switches relative to the input types are in OFF position; vice-versa, the options parameters will be active either in case of programming by PC or dip-switches.
The visualization of the programmable parameters depends on the type of device connected.
Notes:
1) it is possible to change the data in this window only if the communication has been enabled ("Open Com" - 2, Picture 1).
2) the parameters programmed are saved in Eeprom also if the device has been configured by dip-switches.

Picture 3 – Program mode – DAT 4530
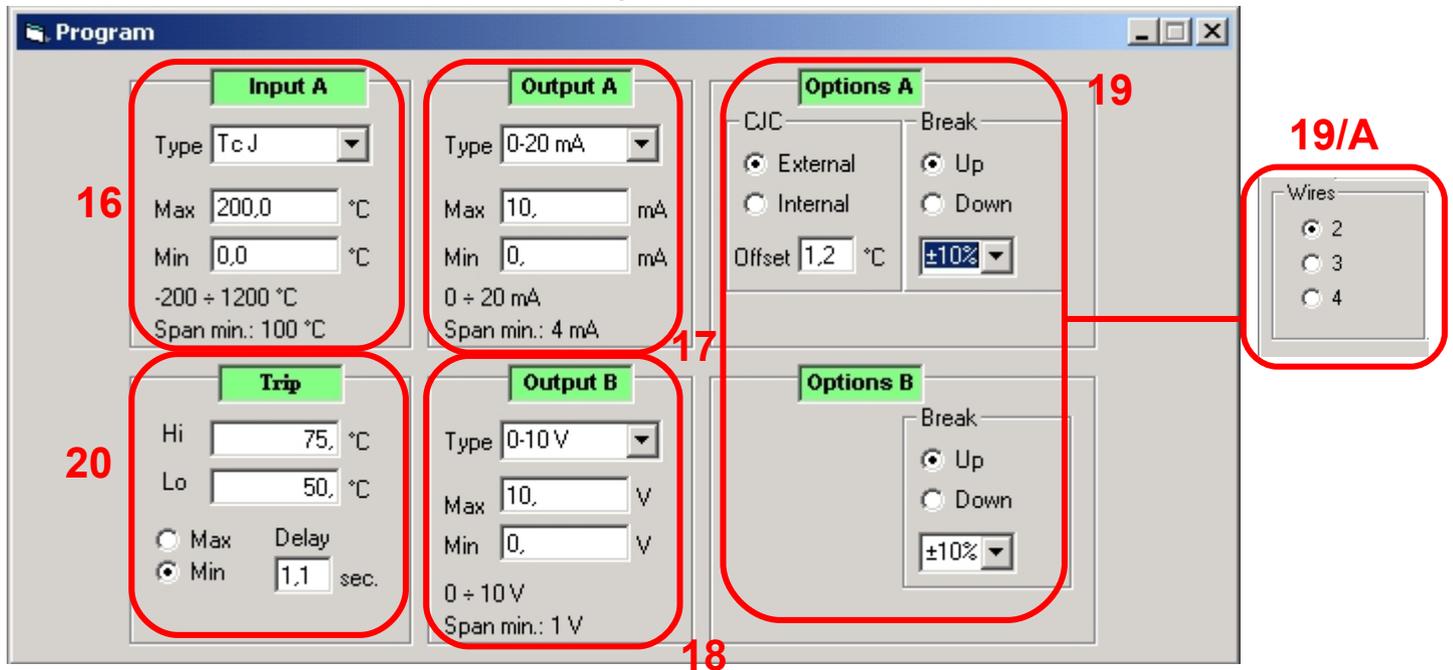
DAT 4530 (Picture 3)

- Section "Input" (16): allows to select the input type and the zero and full scale values of the input range. The specification limits admitted for each input type selected are shown on the bottom side of the section.
- Sections "Output A" (17) and "Output B" (18) : allow to select the output type and the minimum and maximum values of the output range for each output. The specification limits admitted for each output selected are shown on the bottom side of the section.
- Section " Input options" (19 - 19/A): allows to set the options for the input signal.
Input options.
Thermocouple: setting of the CJC as internal or external (not required for the "B" type), setting of the CJC offset value with a maximum variation of ± 12.5 °C variable per step of 0.1 °C.
RTD, PTC or resistance: setting of the cable compensation as 2, 3 or 4 wires (**19/A**).
Output options.
Setting of the break condition (out of scale value) as "Up" (output signal higher than the maximum output value) or "Down" (output signal lower than the minimum output value); setting of the break level as percentage of the output range.
It is possible to select different break points per each output channel.
- Section "Trip" (20): allows to:
• set the trip and the hysteresis levels in the same engineering units of the input range (Hi and Lo);
• set the type of trip as high or low alarm (Max and Min);
• set the delay time of energizing and de-energizing expressed in seconds (Delay).

Picture 4 – Program mode – DAT 4532 Series
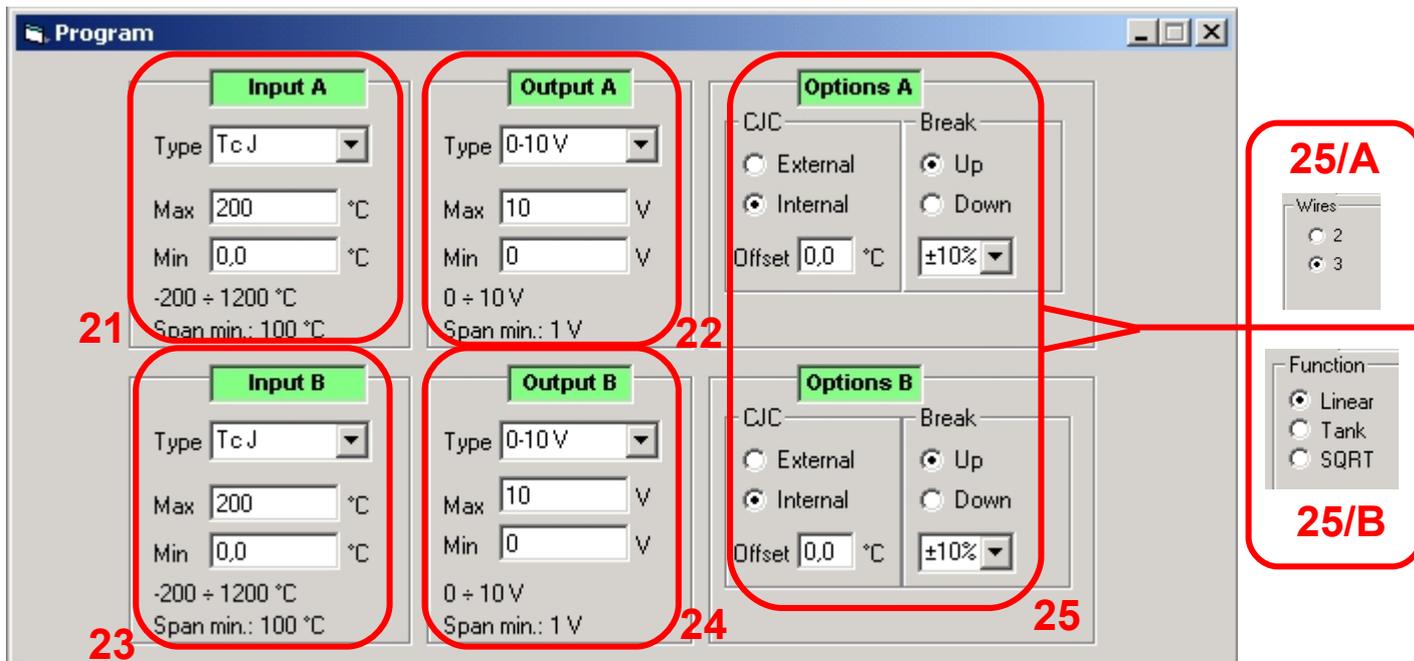
DAT 4532 SERIES (Picture 4)

- Sections "Input A" (21) and "Input B" (23): allow to select the input type for each channel and the zero and full scale values of the input ranges. The specification limits admitted for the input type selected are shown on the bottom side of the sections.

- Sections "Output A" (22) and "Output B" (24): allow to select the output type for each channel and the minimum and maximum values of the output ranges. The specification limits admitted for the output selected are shown on the bottom side of the sections.

- Section "Options" (25 – 25/A – 25/B): allows to set the options for the input and output signals per channel.

Input options.

Thermocouple: setting of the CJC as internal or external (not required for the "B" type), setting of the CJC offset value with a maximum variation of ± 12.5 °C variable per step of 0.1 °C.

Note: it is possible to set the channel B as thermocouple with internal CJC only if the same option has been selected for the channel A.

RTD, PTC or resistance: setting of the cable compensation as 2 or 3 wires (**25/A**).

Output options.

Setting of the break condition (out of scale value) as "Up" (output signal higher than the maximum output value) or "Down" (output signal lower than the minimum output value); setting of the break level as percentage of the output range.

Option "Functions" **(25/B)**

For the device DAT4532 D are available the following type of output linearisation:

• Linear: output signal proportional with the input.

• Tank: special linearisation to measure the variation of the level of a liquid in an horizontal cylindrical tank.

• SQRT :special linearisation to measure sensors that require a square root extraction.
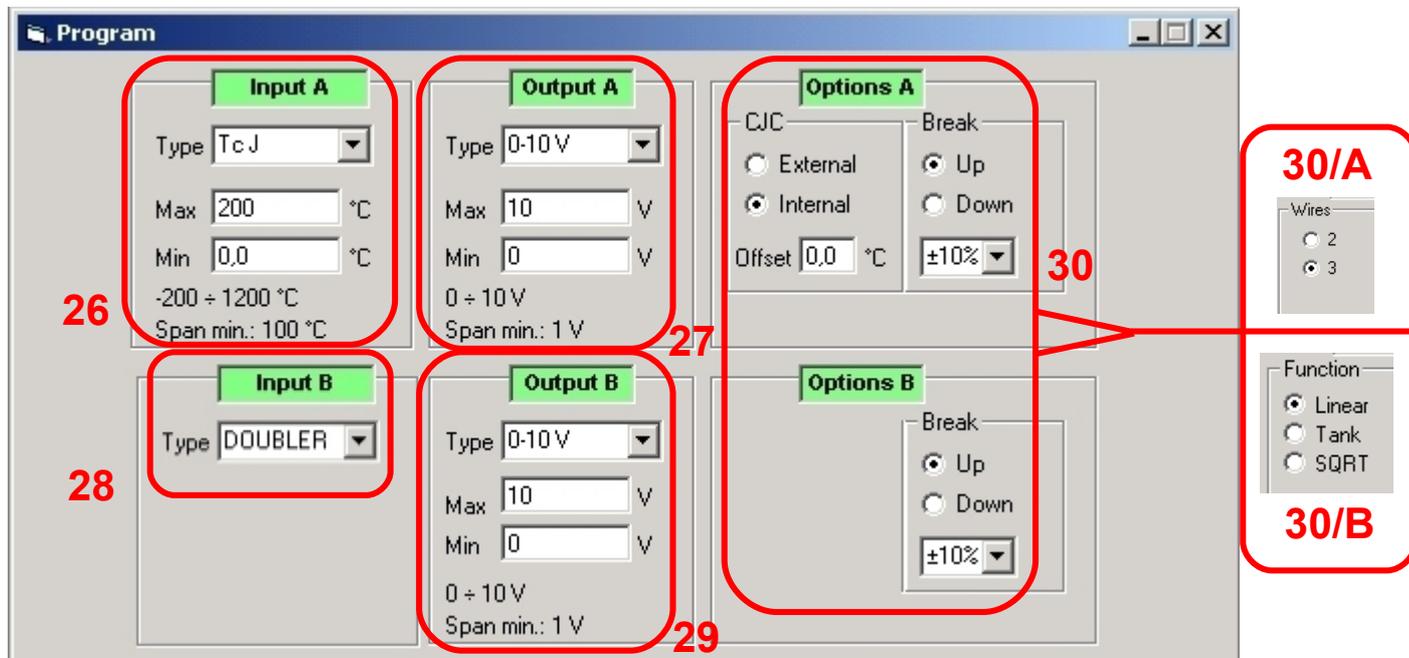
DAT 4631 SERIES (Picture 5)

- Section "Input A" (26): allows to select the input type and set the zero and full scale values of the input range. The specification limits admitted for the input type selected are shown on the bottom side of the section.

- Sections "Output A" (27) and "Output B" (29): allow to select the output type for each channel and set the minimum and maximum values of the output range. The specification limits admitted for the output type selected are shown on the bottom side of the section.

- Section "Input B" (28): this section, not variable, is fixed on the option "Doubler".

- Section "Options" (30 – 30/A – 30/B): allows to set the options for the input and output signals per channel.

Input options.

Thermocouple: setting of the CJC as internal or external (not required for the "B" type), setting of the CJC offset value with a maximum variation of ± 12.5 °C variable per step of 0.1 °C.

RTD, PTC or resistance: setting of the cable compensation as 2 or 3 wires (**30/A**).

The options selected in this section work on both the output channels.

Output options.

Setting of the break condition (out of scale value) as "Up" (output signal higher than the maximum output value) or "Down" (output signal lower than the minimum output value); setting of the break level as percentage of the output range.

The options selected in this section work separately per output channel.

Option "Functions" **(30/B)**

For the device DAT4631 D are available the following type of output linearisation:

• Linear: output signal proportional with the input.

• Tank: special linearisation to measure the variation of the level of a liquid in an horizontal cylindrical tank.

• SQRT :special linearisation to measure sensors that require a square root extraction.

The options selected in this section work separately per output channel.

DAT 4531 SERIES (Picture 6)

- Section "Input A" (31): allows to select the input type and set the zero and full scale values of the input range. The specification limits admitted for the input type selected are shown on the bottom side of the section.

- Section "Output A" (32): allows to select the output type and set the minimum and maximum values of the output range. The specification limits admitted for the output type selected are shown on the bottom side of the section.

- Section "Options" (33 – 33/A – 33/B): allows to set the options for the input and output signals per channel.

Input options.

Thermocouple: setting of the CJC as internal or external (not required for the "B" type), setting of the CJC offset value with a maximum variation of ± 12.5 °C per step of 0.1 °C.

RTD, PTC or resistance: setting of the cable compensation as 2 or 3 wires (**33/A**).

Output options.

Setting of the break condition (out of scale value) as "Up" (output signal higher than the maximum output value) or "Down" (output signal lower than the minimum output value); setting of the break level as percentage of the output range.

Option "Functions" **(33/B)**

For the device DAT4531 D are available the following type of output linearisation:

• Linear: output signal proportional with the input.

• Tank: special linearisation to measure the variation of the level of a liquid in an horizontal cylindrical tank.

• SQRT :special linearisation to measure sensors that require a square root extraction.

By this window it is possible to control and set the dip-switches.

The visualization of the programmable parameters depend on the type of device connected.

The setting of the dip-switches will force the device working; the options setting saved in Eeprom work only if they are not selectable by dip-switch.

For the devices DAT4532 A, B and C, the configuration via dip-switches is the same for both the channels, for the devices DAT4532 D and the DAT4530 the configuration via dip-switches is dedicated per channel.

Note: it is possible to visualize and change the data in this window only if the communication has been enabled by the button "Open Com" (2, Picture 1).

Picture 7 – Devices with the same configuration for both the channels
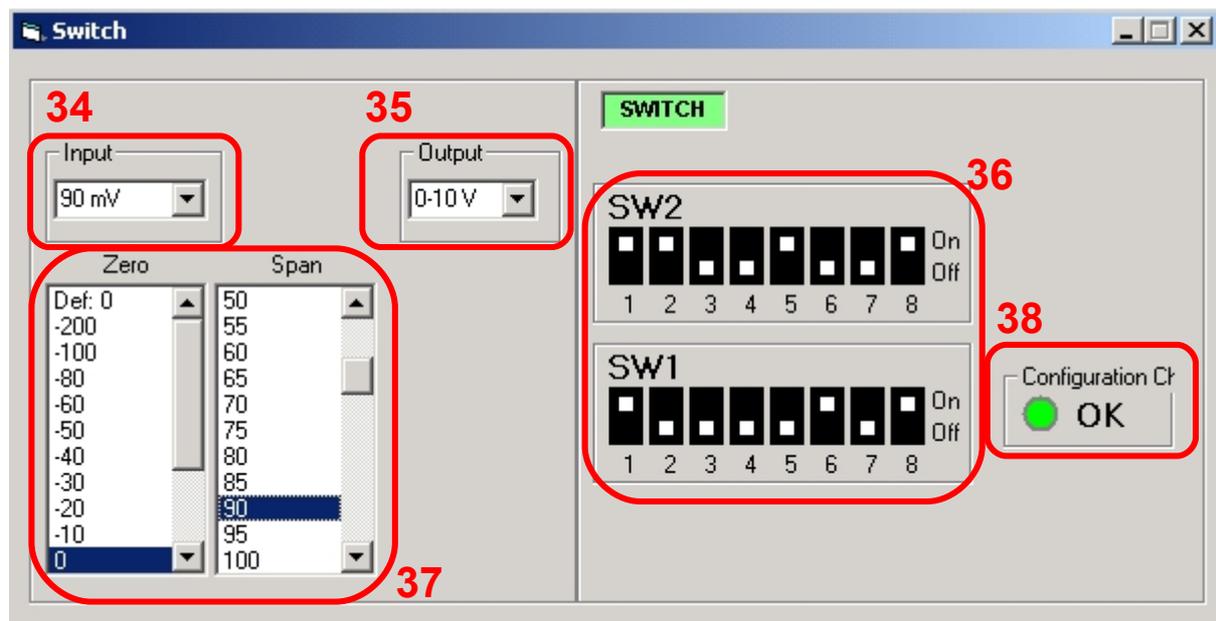
Devices with the same configuration for both the channels (Picture 7)

• To visualize how the device has been programmed click on the button "view Switch" (7, Picture 1) to read the configuration of the dip-switches. The sections in this window will be automatically updated in function of the dip-switches settings.

• To visualize how to configure the device.

- Section "Input" (34): allows to select the input type; the sections **"SW1" & "SW2"(36)** and **"Zero" & "Span"(37)** will be automatically updated in function of the selection.

- Sections "Zero" & "Span"(37): visualize the minimum input scale (Zero) and the full scale (Span) values; to change the programming of the device select the values in the columns; the sections **"SW1" & "SW2"(36)** will be automatically updated in function of the selection.

Note: for each input type it is possible to set a "Default" values for the "Zero" and "Span" and save them in Eeprom. It is possible to write this values clicking on the position "Def: " of each column, click two times by the left button of the mouse, write the desired value and confirm it clicking on the button OK. The "Default" values are active only when all the dip-switches relative to the input range are in OFF position.

- Section "Output" (35): allows to select the output signal; the section **"SW1" & "SW2"(36)** will be automatically updated in function of output signal selected.

*- Sections "SW1" & "SW2"(36): visualiz*e the configuration of the dip switches.

- "Configuration Check" (38): each configuration selected is checked to verify that the data are included into the specification limits. The LED of this section will become green with the message "OK" if the configuration made is correct, red with the message "ERR" if it is wrong.

Picture 8 – Devices with configuration dedicated per channel
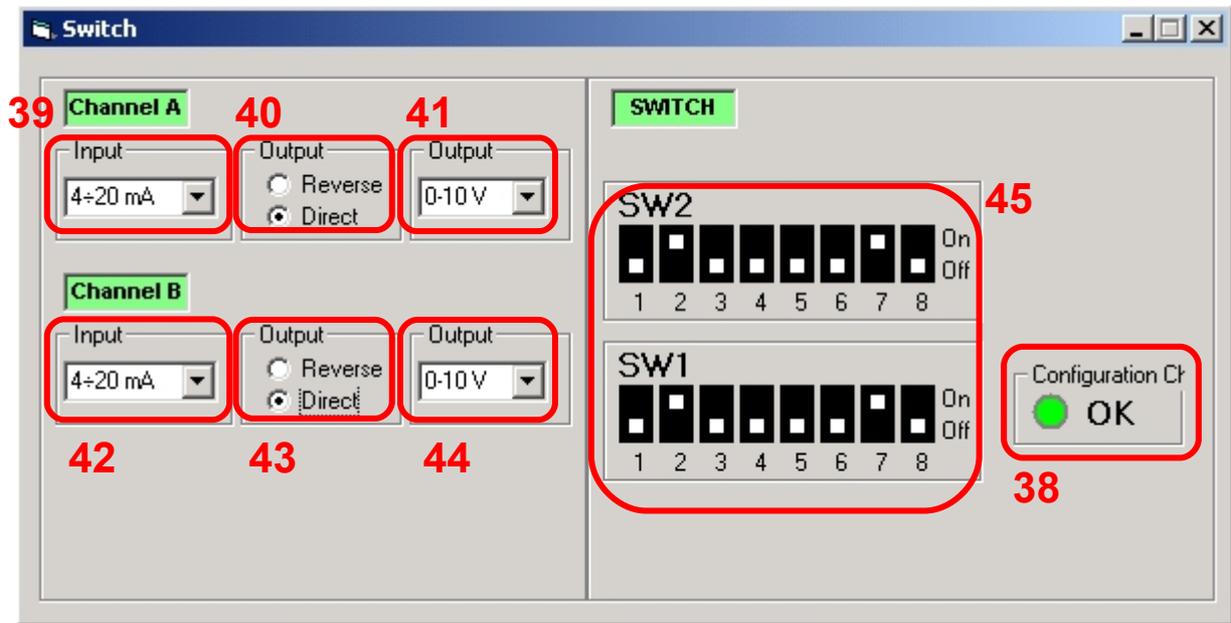
Devices with configuration dedicated per channel (Picture 8)

• To visualize how the device has been programmed click on the button "view Switch" (7, Picture 1) to read the configuration of the dip-switches. The sections in this window will be automatically updated in function of the dip-switches settings.

• To visualize how to configure the device.

   - Section "Input A" (39): allows to select the input type for the channel A; the section **"SW1" (43)** will be automatically updated in function of the selection.

   - Section "Option A" (40): allows to select the option of direct or reverse signal for the output of the channel A; the section **"SW1" (43)** will be automatically updated in function of the selection.

   - Section "Output A" (41): allows to select the output type for the channel A; the section **"SW1" (43)** will be automatically updated in function of the selection.

   - Section "Input B" (42): allows to select the input type for the channel B; the section **"SW2" (47)** will be automatically updated in function of the selection.

   - Section "Option B" (43): allows to select the option of direct or reverse signal for the output of the channel B; the section **"SW2" (47)** will be automatically updated in function of the selection.

   - Section "Output B" (44): allows to select the output type for the channel B; the section **"SW2" (47)** will be automatically updated in function of the selection.

  - Section "SW1" & "SW2" (45) **:** visualizes the configuration of the dip switches relative to both the channels: SW1 is about the channel A and SW2 is about the channel B.

   - "Configuration Check" (38): each configuration selected is checked to verify that the data are included into the specification limits. The LED of this section will become green with the message "OK" if the configuration made is correct, red with the message "ERR" if it is wrong.

Picture 9 – DAT4530
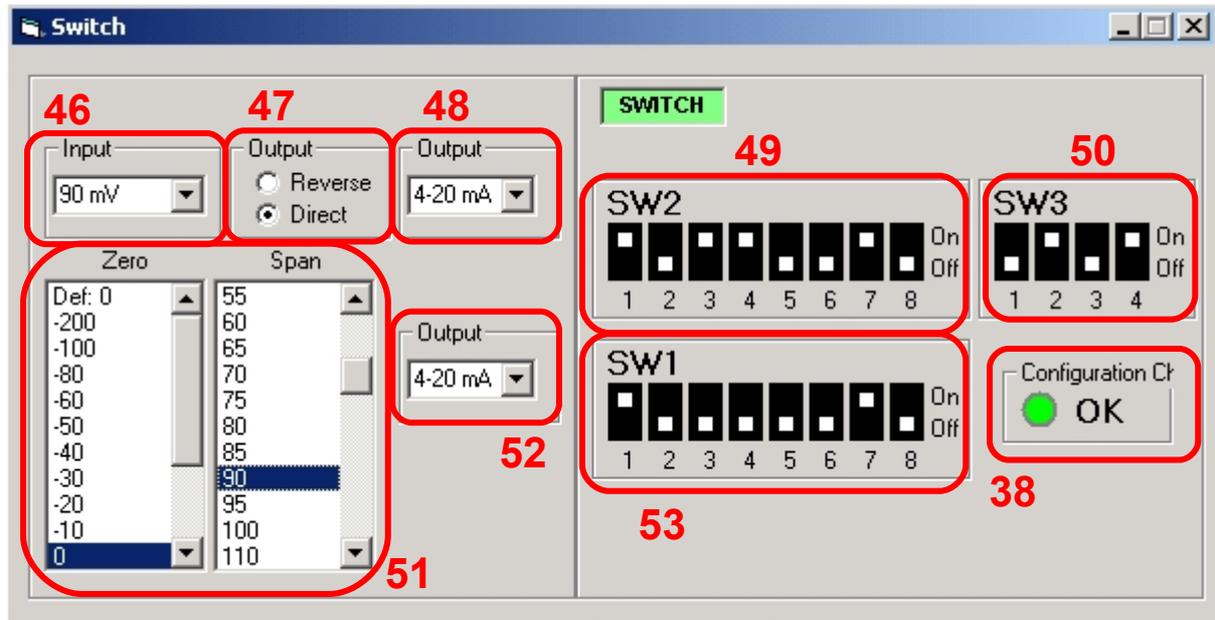
DAT4530 (Picture 9)

- To visualize how the device has been programmed click on the button "view Switch" (7, Picture 1) to read the configuration of the dip-switches. The sections in this window will be automatically updated in function of the dip-switches settings.
- To visualize how to configure the device.

  - Section "Input" (46): allows to select the input type; the section **"SW1" (53)** will be automatically updated in function of the selection.

  - Section "Option" (47): allows to select the input option if it is available; the section **"SW1" (53)** will be automatically updated in function of the selection.

  - Section "Output A" (48): allows to select the output type for the channel A; the section **"SW1" (53)** will be automatically updated in function of the selection.

  - Section "Output B" (52): allows to select the output type for the channel B; the section **"SW2" (49)** will be automatically updated in function of the selection.

  - Section "Zero and Span" (51): allows to select the minimum and maximum value of the input scale; the sections **"SW2" (49) and *"SW3"(50)** will be automatically updated in function of the selection.

  - Section "SW1"(53) **: visualiz**es the configuration of the dip switches relative to the input type, the options and the output type of the channel A.

  - Section "SW2"(49) **: visualiz**es the configuration of the dip switches relative to the output type of the channel B and the input full scale value.

  - Section "SW3"(50) **: visualiz**es the configuration of the dip switches relative to the minimum input scale value.

  - "Configuration Check" (38): each configuration selected is checked to verify that the data are included into the specification limits. The LED of this section will become green with the message "OK" if the configuration made is correct, red with the message "ERR" if it is wrong.

Error conditions

- Blinking condition of the device's LED "PWR" : shows that has been made a wrong configuration of the dip-switches.
Solution: control the dip-switches settings.

- No "DATESOFT" activity .
Solution: control that the communication has been enabled by the button "Open Com" (2, Picture 1).

- Configuration Check 's LED red (39, Pictures 7 and 8) : shows that has been made a a wrong configuration of the dip-switches.
Solution: control the dip-switches settings.

Error messages

- "Communication error":shows that the data communication between DATESOFT and the device doesn't end correctly.
Solutions.
Control that all the cables of the PRODAT interface have been correctly connected.
Control that the device has been correctly supplied referring to the technical data-sheet.

- "COM Port already in use": shows that the Com port selected is already in use from another application.
Solutions.
Close the external application.
Change the Com port.

- "File not compatible with the device connected": shows that the file (.DST) opened doesn't contain data compatible with the type and/or the version of the device connected.
Solutions.
Connect a device with right type and version .
Open "DATESOFT" in a new file.

-"Error: check configuration data": shows that one or more parameters are not correct (programming via PC).
Solution.
Verify that all parameters are included within the specification limits.

-"Device Changed": shows that the user tries to program a device of type and/or version different from that one which DATESOFT has been opened (Ex: from DAT4532 A to DAT4532 D)
Solution: Click on the button "Close Com", then "Open Com" (2, Picture 1) to start a new communication.

-"Device not compatible with this software version": shows that has been connected a DATEXEL device different from those listed on the of this document.
Solution: Connect a device of right type and version.

-"Wrong configuration: Channel A input must be a Thermocouple with Internal CJC": shows, with a device of the version A connected, that the user is programming the channel B as a Thermocouple with internal CJC but the channel A has been programmed as mV or Thermocouple with external CJC or "B" type.
Solutions.
Set the channel A as a Thermocouple with internal CJC.
Set channel A like channel B or vice-versa.

-"(MAX / MIN/ Span) input value exceeds limits":shows that one or more of the input parameters are not included between the specification limits.
Solution: control the parameters (see section "Program" mode).

-"(MAX / MIN) output value exceeds limits":shows that one or more of the output parameters are not included between the specification limits.
Solution: control the parameters (see section "Program" mode).

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 Datexel s.r.l. reserves its right to modify its product without notice at any time.

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