DATCON
INDUSTRIAL MEASUREMENT

DT2014

Four-channel Power Supply

Operating Instructions

CE

Contents

1. About this document

1.1. Function

This operating instructions manual has all the information you need for quick set-up and safe operation of DT2014 Four-channel Power Supply Please read this manual before you start setup.

1.2. Target group

This operating instructions manual is directed to trained personnel. The contents of this manual should be made available to these personnel and put into practice by them.

1.3. Symbolism used

Information, tip, note
This symbol indicates helpful additional information.

Caution, warning, danger
This symbol informs you of a dangerous situation that could occur. Ignoring this cautionary note can impair the person and/or the instrument or it's environ.

List
• The dot set in front indicates a list with no implied sequence.

Action
→ This arrow indicates a single action.

Sequence
1 Numbers set in front indicate successive steps in a procedure.

2. For your safety

2.1. Authorized personnel

All operations described in this operating instructions manual must be carried out only by trained and authorized specialist personnel. For safety and warranty reasons, any internal work on the instruments must be carried out only by DATCON personnel.

2.2. Appropriate use

The DT2014 is a Four-channel Power Supply for industrial use. Detailed information on the application range is available in chapter **3. Product description**.

2.3. Warning about misuse

Inappropriate or incorrect use of the instrument can give rise to application-specific hazards, or damage to system components through incorrect installing or adjustment.

2.4. General safety instructions

Using the DT2014 Four-channel Power Supply requiring the strict observance of standard regulations and guidelines. The user must take note of the safety instructions in this operating instructions manual, the country-specific installation standards as well as all prevailing safety regulations and accident prevention rules.

2.5. CE conformity

The DT2014 is in conformity with the provisions of the following standards:
MSZ EN 61010-1:2001 (safety)
MSZ EN 61326:2004 (EMC)
MSZ EN 61000-4-11:2005

2.6. Environmental instructions

Protection of the environment is one of our most important duties.
Please take note of the instructions written in the following chapters:

- Chapter **3.4. Storage and transport**
- Chapter **7.2. Disposal**

3. Product description

3.1. Delivery configuration

Delivered items

The scope of delivery encompasses:

- DT2014
- documentation:
  this operating instructions manual
  certification
  warranty

3.2. Operating principle

Area of application

The DT2014 Four-channel Power Supply is designed primarily to supply power for 4-20 mA two-wire transmitters. The unit provides four galvanic isolated 22 VDC, 25 mA outputs. The outputs are overcurrent protected, the current limit is approx. 30 mA.

Principle of operation

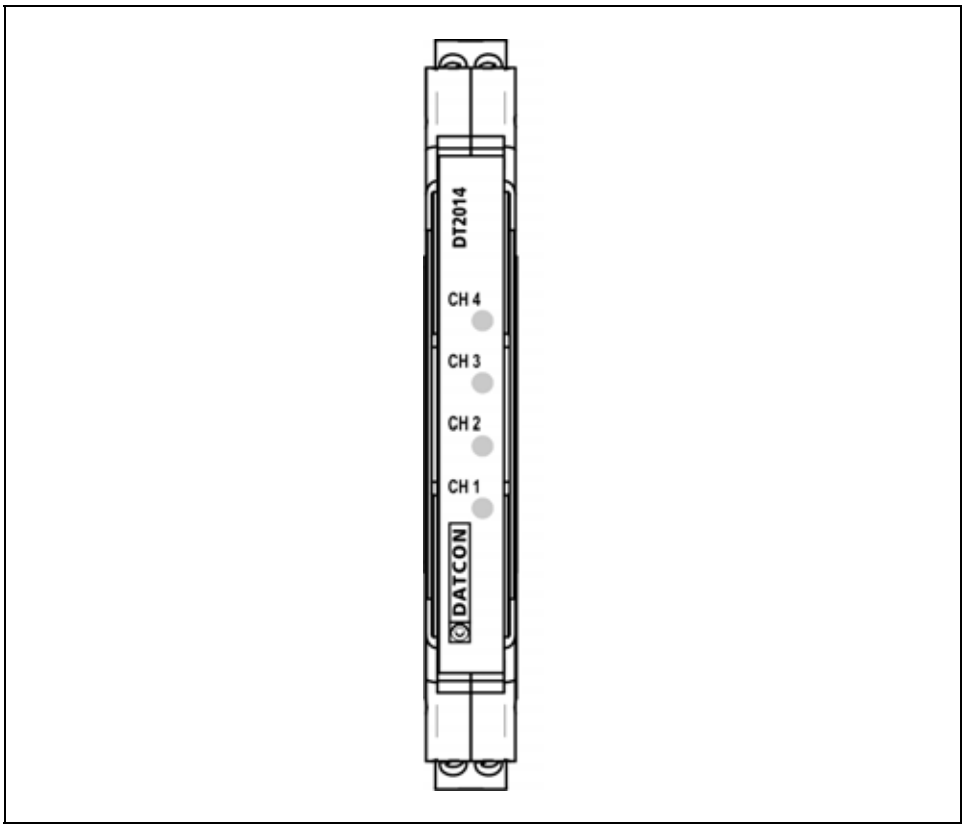
The input stage of the instrument converts the mains voltage into DC voltage.
An input stabilized flyback converter circuit drives the isolating transformer primary coil. The ferrite core planar transformer produces on its four separate secondary coils the appropriate voltages for the output stages.
After rectifying and filtering draw up the 4 x 22 VDC output voltages. The current protection circuits limit the output currents at approx. 30 mA.

Power supply

See Chapter: **8.1. Technical specification**

3.3. Indicators

The following figure shows the indicators on the DT2014 front panel.



CH1-CH4 green LED indicators show the state of the four outputs. In normal operating mode all of the indicators light. In overcurrent mode the indicator of the overloaded output blows out.
(A small decrease of the intensity vs. output current is normal.)

3.4. Storage and transport

This instrument should be stored and transport in places whose climatic conditions are in accordance with chapter **8.1. Technical specification**, as described under the title: Environmental conditions.

The packaging of DT2014 consist of environment-friendly, recyclable cardboard is used to protect the instrument against the impacts of normal stresses occurring during transportation. The corrugated cardboard box is made from environment-friendly, recyclable paper. The inner protective material is nylon, which should be disposed of via specialized recycling companies.

4. Mounting

4.1. General instructions

The instrument should be installed in a cabinet with sufficient IP protection, where the operating conditions are in accordance with chapter **8.1. Technical specification**, as described under the title: Operating conditions.

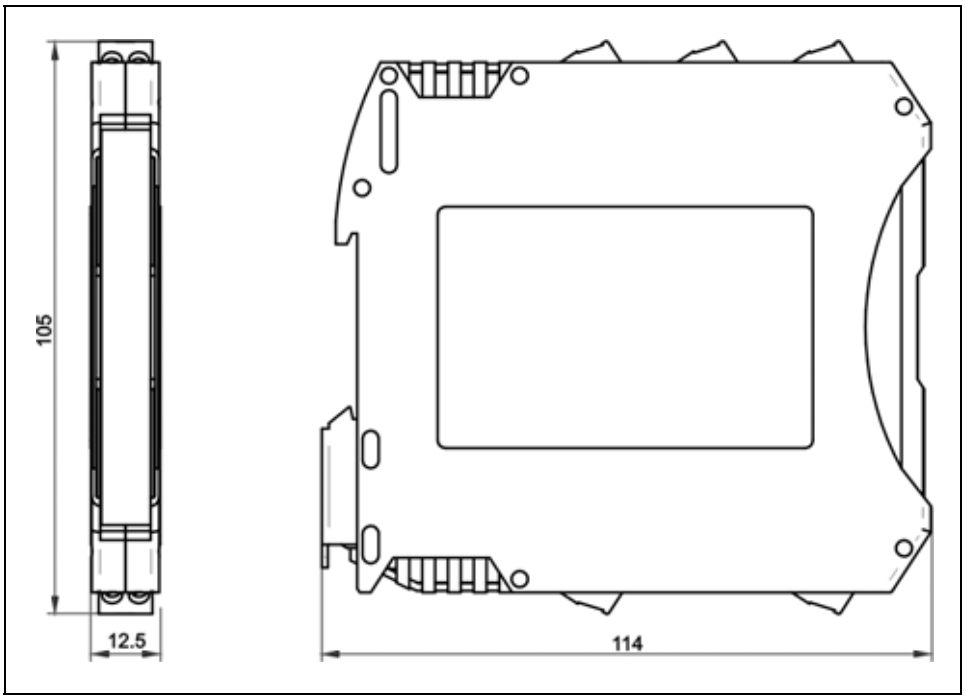
Mounting position

The DT2014 is built in a plastic housing, for mounting on TS-35 rail.
The instrument should be mounted in vertical position (horizontal rail position).

Horizontal mounting may cause overheating and damage of the instrument.

4.2. Main dimensions of the instrument

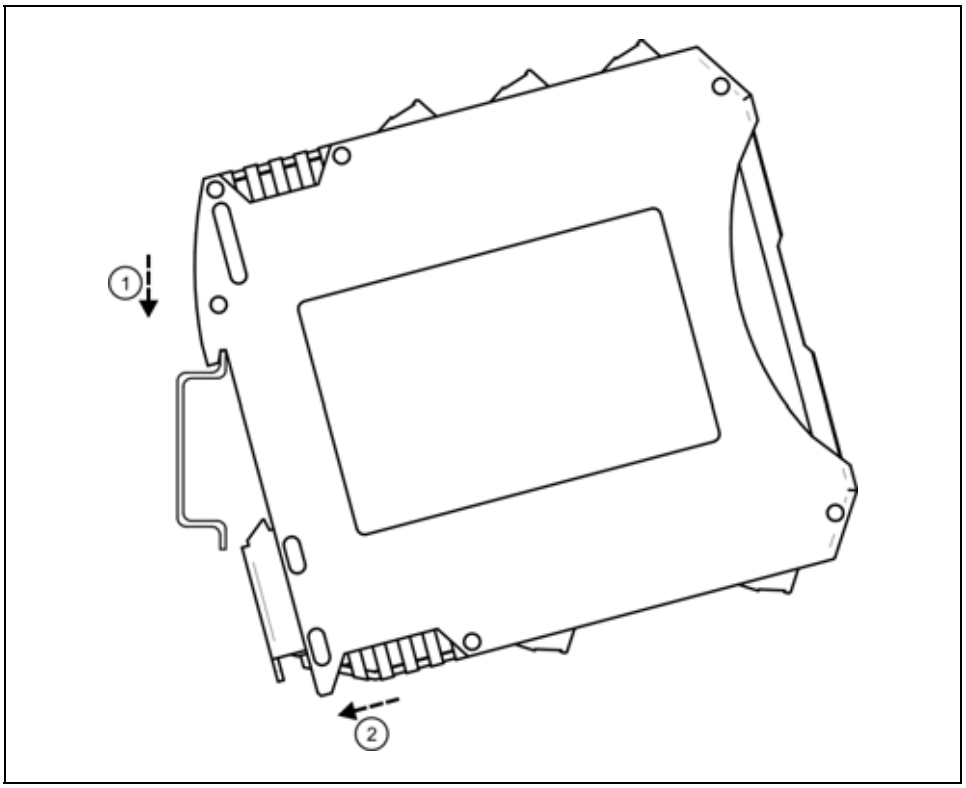
The following figure shows the dimensions of the DT2014:



4.3. Mounting procedure

The following figure shows the mounting procedures (fixing on the rail):

Mounting on the rail



The mounting doesn't need any tools.
1. Tilt the instrument according to the figure; put the instrument's mounting hole onto the upper edge of the rail (figure step 1.).
2. Push the instrument's bottom onto the bottom edge of the rail (figure step 2.), you will hear the fixing assembly closing.
3. Check the hold of the fixing by moving the instrument firmly.

5. Connecting

5.1. Preparing the connection

Always observe the following safety instructions:

- Connect only in the complete absence of line voltage
- If overvoltages are accepted, overvoltage arresters should be installed
- You should take note the data concerning on the overcurrent protection in installation.
- Use only a screwdriver with appropriate head

Select connection cable

Take note the suitability of the connecting cable (wire cross-section, insulation, etc.).
In case of mains connection the wire cross-section should be 1 mm^2 (min.).
You may use either solid conductor or flexible conductor.

Preparing cables

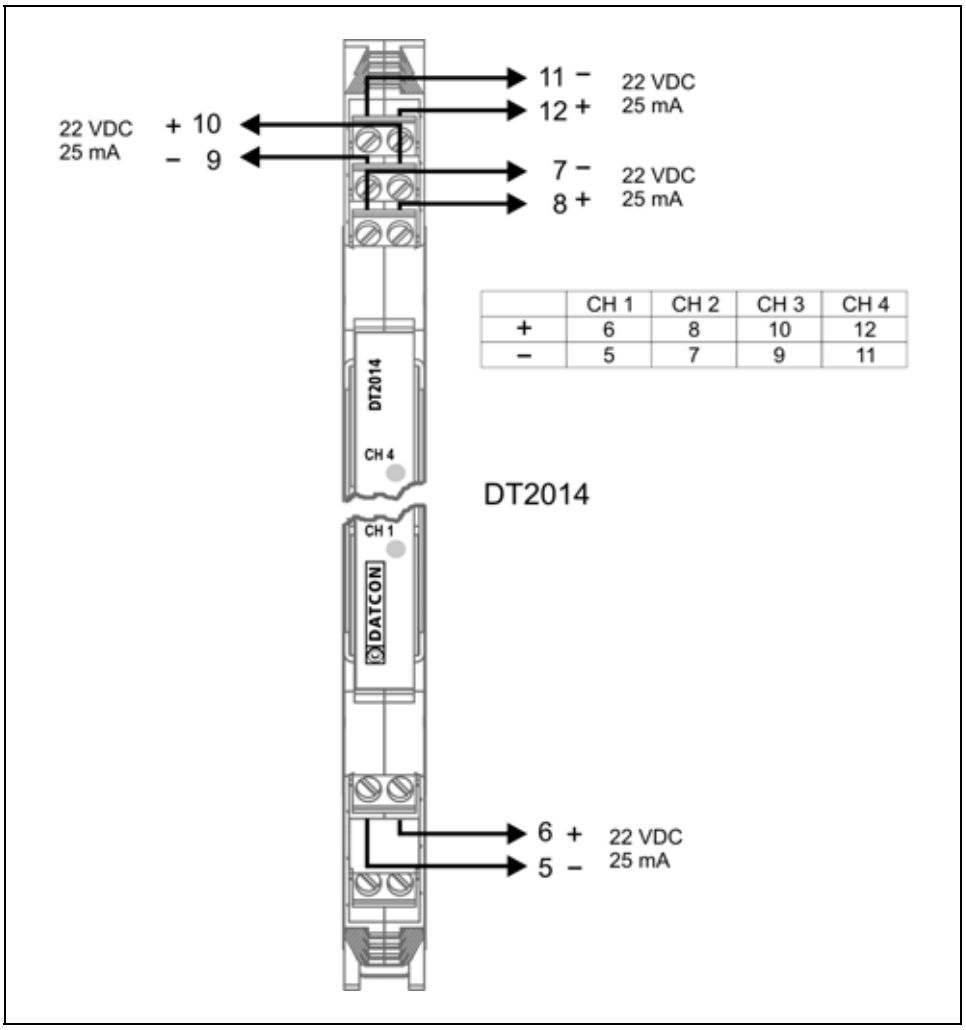
Prepare the cable for the connection.
Strip approx. 8 mm insulation.
In case of using flexible cable, crimp the cable end.

5.2. Connecting the loads

The following figure shows the wiring plan, connecting the loads to the output terminals:

Wiring plan, connecting the loads
(see also “Application example”)

Be careful the polarity of the cables

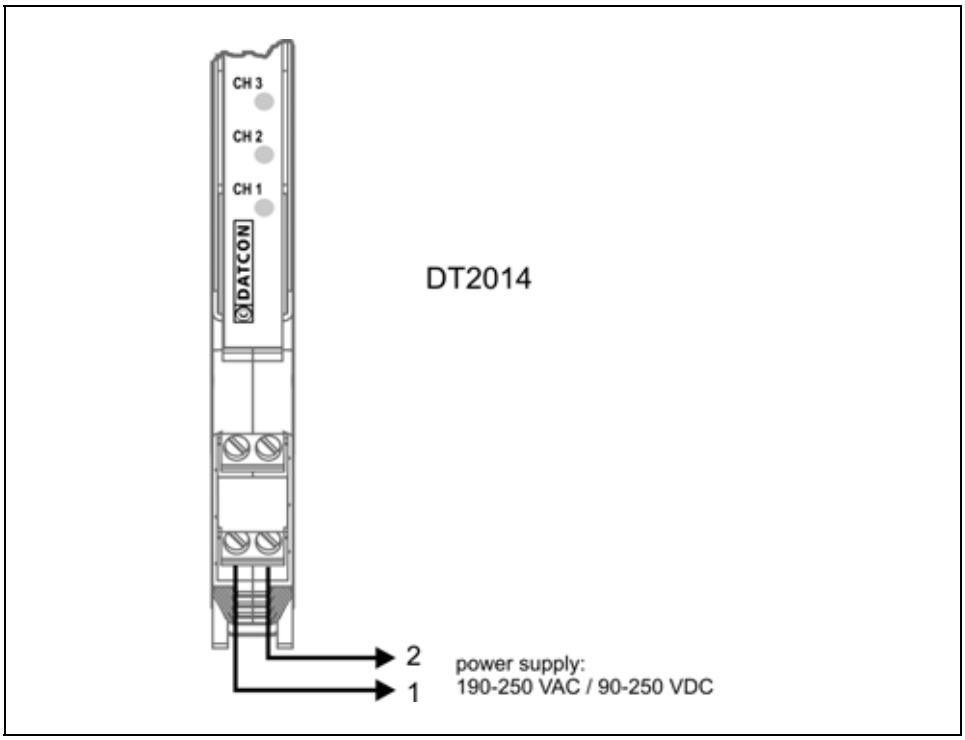


1. Loosen terminal screws.
2. Insert the wire ends into the open terminals according to the wiring plan.
3. Screw the terminal in.
4. Check the hold of the wires in terminals by pulling on them firmly.

5.3. Connecting the power supply

The following figure shows the wiring plan, connecting the mains:

Wiring plan, connecting the mains
(see also “Application example”)



DC polarity indifferent

1. Loosen terminal screws.
2. Insert the wire ends into the open terminals according to the wiring plan.
3. Screw the terminal in.
4. Check the hold of the wires in terminals by pulling on them firmly.

Checking the connections

Check if the cables are connected properly (have you connected all the cables, have you connected to the right place, do not the cable-ends touch each other).

6. Fault rectification

6.1. Fault finding

- All of the four green indicators are dark → check the supply voltage and check the loads.
If the supply voltage and the loads are OK: the instrument is defective.
- One, (two or three) green indicator(s) is (are) dark → check the corresponding load(s).
If the load(s) is (are) OK: the instrument is defective.

When the result of fault finding is that the instrument is defective call the manufacturer service department.

6.2. Repairing

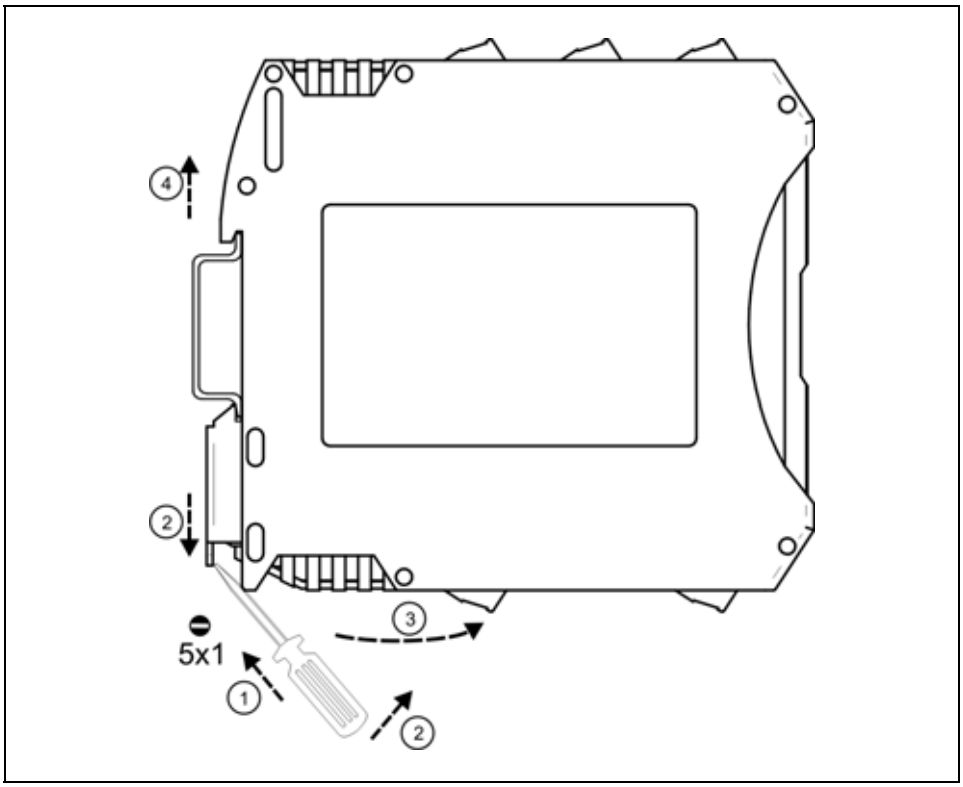
There is no user repairable part inside the instrument.
In accordance with Point **2.1.: For safety and warranty reasons, any internal work on the instrument must be carried out only by DATCON personnel.**

7. Dismounting

7.1. Dismounting procedure

Before dismounting take note the warnings written in chapter **5.1. Preparing the connection**.
The following figure shows the dismounting procedures.

Dismounting from the rail



The dismounting procedure needs a screwdriver for slotted screws.
Before dismounting disconnect all wires.
1. Put the screwdriver end into the fixing assembly's hole (figure step 1.).
2. Lift the screwdriver handle until it possible to open the fixing assembly (figure step 2.).
3. Keeping the screwdriver in this position lift the instrument bottom from the bottom edge of the rail (figure step 3.).
Lift the whole instrument (you may put out the screwdriver) (figure step 4), the instrument will be free.

7.2. Disposal

According with the concerning EU directive, the manufacturer undertakes the disposal of the instrument that are manufactured by it and intended to be destroyed.
Please deliver it in contamination-free condition to the site of the Manufacturer or to a specialized recycling company.

8. Appendix

8.1. Technical specification

Safety data:

The output and the supply voltage are galvanic isolated from each other; the isolation is in compliance with the standard EN 61010-1

Pollution level:	2
Overvoltage group:	II
Test voltage between the outputs:	1 kVDC
Overcurrent protection in installation:	4 A (B)

Output parameters:

Number of outputs (channels):	4
Output voltage:	22 VDC @ 4 x 25 mA 22.5 VDC @ 4 x 20 mA ~25 VDC @ unloaded
Output current:	25 mA (nominal)
Output resistance:	100 Ω @ 2-25 mA
Output noise voltage:	50 mV p-p (20 MHz bandwidth)
Overcurrent protection:	28-32 mA, limiter characteristic
Overload time without damage:	48 hours (all of the outputs are shorted)
Power supply regulation:	2% (in the whole supply voltage range)

Indicators:

4 green LED	for indicating the output states

Power supply:

Power supply:	190-250 VAC / 90-250 VDC
Power consumption:	4.2 VA @ full load 1.2 VA @ no load

Electromagnetic compatibility (EMC):

Accordance with the standard EN 61326:2004

Immunity:	-A- criterion
Noise emission:	-A- class

Ambient conditions:

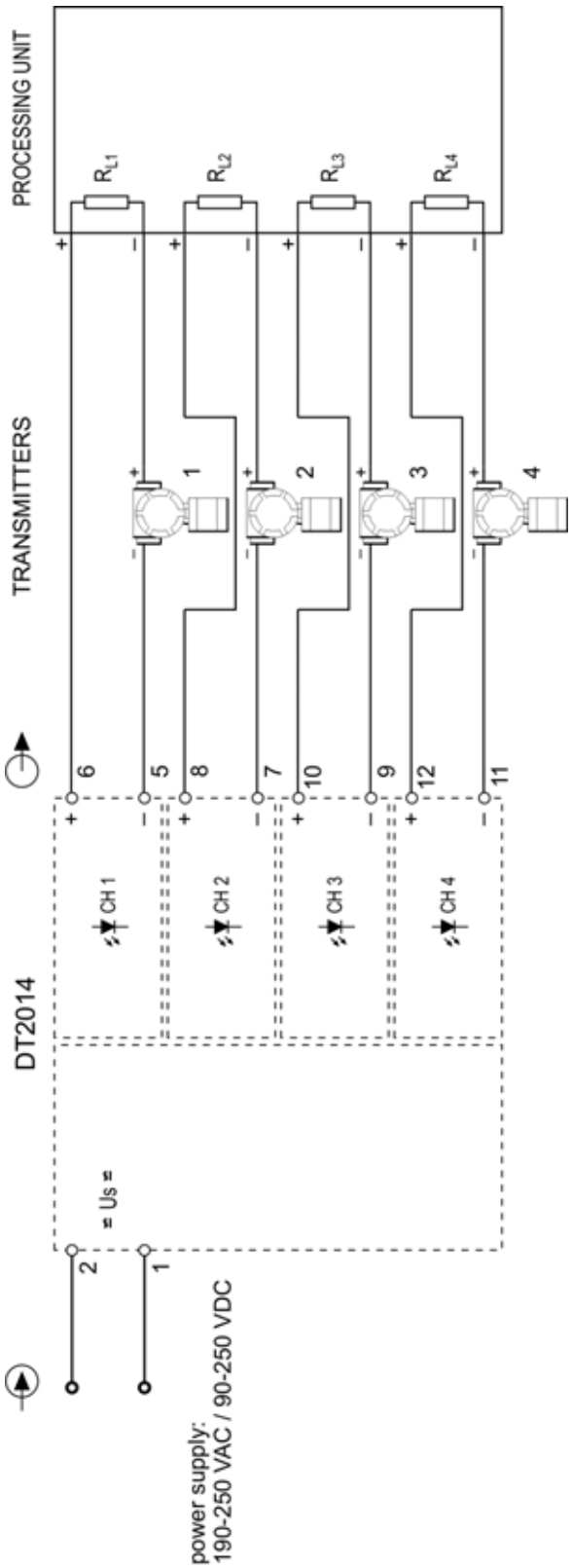
Operating temperature range:	0-50 °C
Relative air humidity:	90 % (non condensing)
Place of installation:	cabinet

General data:

Housing:	TS-35 rail-mounting housing material: polyamide PA6.6
Connection:	screw-fixed type connection
Connecting cable:	2.5 mm^2 (max.)
Dimensions:	12.5 x 105 x 114 mm (width x height x depth)
Weight:	0.11 kg
Protection:	IP 20

The Manufacturer maintains the right to change technical data.

8.2. Application example



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