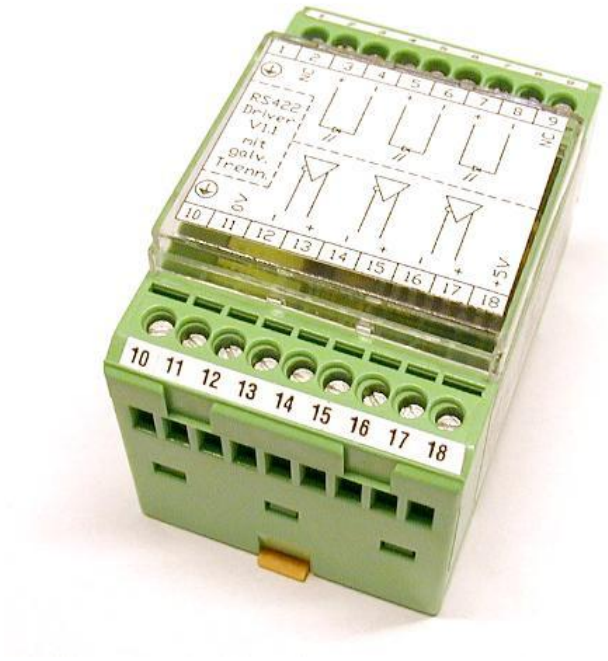
Incremental Signal Amplifier

INCDRV



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Notification

This handbook corresponds with the unit version of 30.1.2002. The company Digitronic Automationsanlagen GmbH reserves the right to implement changes that result in an improvement of the quality and the functions of the device at any time and without any announcements.
This instructions manual was created with a maximum of care, but mistakes are not out of the question. We are thankful for any comments, regarding possible mistakes in the instruction manual.

Update
You can also obtain this instruction manual on the Internet at **http://www.digitronic.com** in the latest version as PDF file.

Qualified personal only
Commissioning and operation of the device may only be carried out by qualified personal. Qualified personal are persons, authorized with commissioning, grounding and labeling devices, systems and electrical circuits according to the applicable standards of security

Liability
(1) The salesperson is liable for any damages for which he or the rightful owner is responsible up to the amount of the actual salesprice. Liability concerning missed profits, failed-to-appear savings, indirect damages and consequential damage is excluded.
(2) The liability restrictions above are not valid concerning assured characteristics and damages, which are caused by intention or coarse negligence.

Protection

Note: This device fulfills the following norms: DIN EN 61000-6-2, DIN EN 61000-4-2, DIN EN 61000-4-4, DIN EN 61000-4-5, DIN EN 61000-4-8 and DIN EN 55011 and RoHS 2 (2011/65/EU)..

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1. Introduction

The INCDRV allows you to intensify, physically separate or convert the RS422 signals of your incremental path-measuring system.

Features:

- Transmission level 3 * RS422.
- Conversion of RS422 signals to 24 volt signals and vice versa.
- Physical separation of input and output by optically coupled insulator (OCI).
- Up to 850 KHz transmission frequency.
- Screw terminal connections correspond to IP20.
- Snapped onto a symmetrical carrier bar in accordance with EN 50 022, can be ranked.
- International protection casing corresponds to IP20.

2. Installation

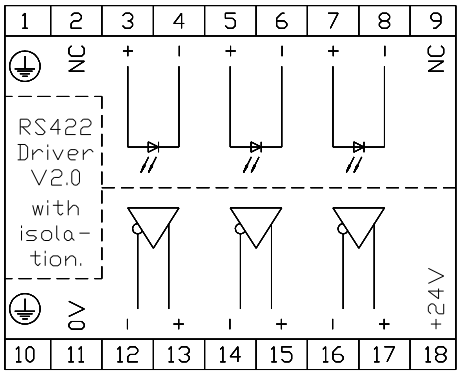
The appliance is locked onto an "EN – carrier bar" in the switch cabinet (see chapter "6. Measurements" on page 7). The cable shielding and earth connectors have to be laid on a series earthing clamp arranged next to the appliance on the shortest route. Due to the earthed mounting panel and its electrical connection to the EN – carrier bar, optimal leakage of the stray effects on the shielding is achieved. All cable connections must be made in the dead state! Only use shielded paired connecting cable. Do not lay the cable parallel to high-voltage cables. If possible, apply shielding to both sides.

3. Connections

Please find the connections for your INCDRV in the following chapters. At first, compare the appliance type printed on the right side of the casing starting with "**D PK/.....**" with the identification in the respective structural point.

4. INCDRV as an amplifier or physical separator

4.1. Model: "D PK/24/5-5" with 24 volt supply voltage.



Note:
Clamps 2 and 9 must not be connected.

Clamps 1 and 10 must both be connected and earthed.

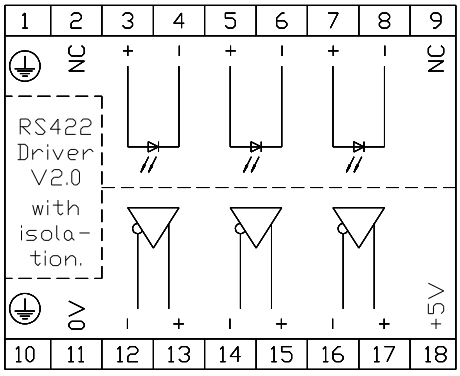
Clamps 11 and 18 for power supply.

4.1.1. Technical Data

Supply voltage..... 24V DC ± 20%
Power consumption without load ... 30mA
Input ..... 3 * RS422 / 180Ohm
Output ..... 3 * RS422 with physical separation
output and supply potential is connected.
Output current..... 20mA

Note: Also note chapter "7. General Technical Data" on page 7.

4.2. Model: "D PK/5/5-5" with 5 volt supply voltage.



Note:
Clamps 2 and 9 must not be connected.

Clamps 1 and 10 must both be connected and earthed.

Clamps 11 and 18 for voltage supply.

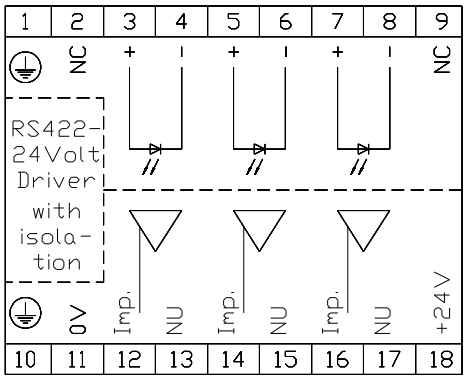
4.2.1. Technical Data

Supply voltage..... 5V DC ± 2%
Power consumption without load ... 100mA
Input ..... 3 * RS422 / 180Ohm
Output ..... 3 * RS422 with physical separation
output and supply potential is connected.
Output current..... 20mA

Note: Also note chapter "7. General Technical Data" on page 7.

5. INCDRV as a converter

5.1. Model: "D PK/24/5-24" converting RS422 to 24 volt signal



Note:
Clamps 2, 9, 13, 15 and 17 must not be connected.

Clamps 1 and 10 must both be connected and earthed.

Attention: **G** The outputs are not short-circuit-proof and must not be laid parallel onto other signals.

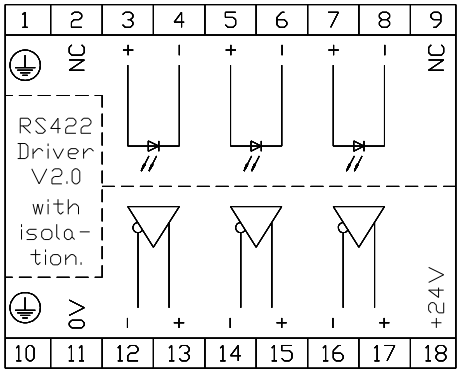
Clamps 11 and 18 for voltage supply.

5.1.1. Technical Data

Supply voltage..... 24V DC ± 20%
Power consumption without load ... 30mA
Input ..... 3 * RS422 / 180Ohm
Output ..... 3 * 24 volt push/pull with physical separation,
not short-circuit-proof, output and supply potential is connected.
Frequency response ..... 0 - 100kHz
Output current..... 50mA

Note: Also note chapter "7. General Technical Data" on page 7.

5.2. Type: "D PK/24/24-5" converting 24 volt to RS422 signal



Note:
Clamps 2 and 9 must not be connected.

Clamps 1 and 10 must both be connected and earthed.

Clamps 4, 6 and 8 must be set to 0 Volt.

The +24 volt signals are each applied on clamps 3, 5 and 7.

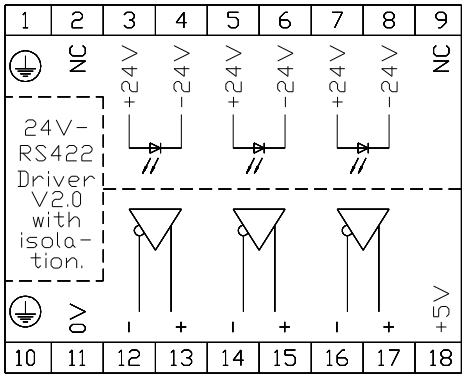
Clamps 11 and 18 for supply voltage.

5.2.1. Technical Data

Supply voltage..... 24V DC ± 20%
Power consumption without load ... 30mA
Input ..... 3 * 24volt 2.2kOhm
Output ..... 3 * RS422 with physical separation
output and supply potential is connected.
Frequency response ..... 0 - 100kHz
Output current..... 20mA

Note: Also note chapter "7. General Technical Data" on page 7.

5.3. Type: "D PK/5/24-5" Converter 24Volt to RS422 signal with 5 Volt power supply



Note:
The terminals 2 and 9 must not be used

The terminals1 and 10 must both be connected, i.e. grounded.

The terminals 4, 6 and 8 must be set to 0 Volt.

The terminals 3, 5 and 7 are set to +24 Volt signals each.

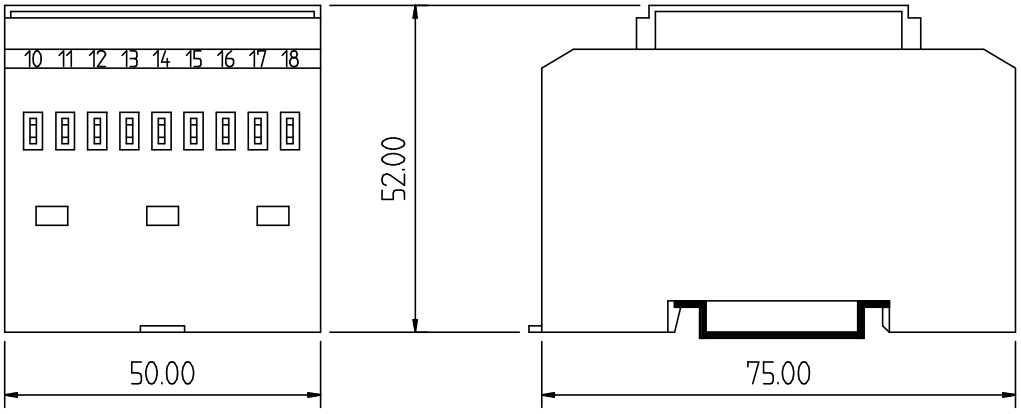
The terminals 11 and 18 for voltage supply.

5.3.1. Technische Daten

Supply voltage..... 5V DC ± 2%
Current-supply without load 100mA
Input: ..... 3 * 24Volt 2.2kOhm
Output: ..... 3 * RS422 with galvanical separation.
Output- and supply-potential are connected.
Frequency response ..... 0 - 100kHz
Output current 20mA

Note: Please also regard chapter "7. General Technical Data" on page 7.

6. Measurements



7. General Technical Data

Displays..... 3 light-emitting diodes, antiparallel to the input OCI.
Frequency response ..... 0 - 850kHz (only with RS422 Type: D PK/X/5-5)
Earthing..... separated between input and output.
Connections ..... screw terminals correspond to IP20.
Installation ..... snap onto symmetrical carrier bar in accordance with EN 50 022, can be ranked.
Dismantling ..... by withdrawing the snap lock.
Measurement ..... See chapter "6. Measurements" on page 7.
International protection..... Casing corresponds to IP20.
Operating temperature..... 0°C ... + 50° C
Weight..... approx. 110g

Note: Please also note the chapters on "Technical Data" of the different appliance types.