MOUNTING AND INSTRUCTION MANUAL

DTS 2345.serial-distributor

Please read these instructions carefully before installation.

Product Certification

CE

STANDARDS

The DTS 2345.serial-distributor was developed and produced in accordance with the EU Guidelines

2004 / 108 / EC
96 / 48 / EC

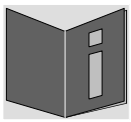
References to the Instruction Manual

1. The information in this Instruction Manual can be changed at any time without notice. The current version is available for download at www.mobatime.com.
2. This Instruction Manual has been composed with the utmost care, in order to explain all details in respect of the operation of the product. Please do not hesitate to contact us if you have any questions. Thank you for reporting any possible mistakes.
3. We do not answer for direct or indirect damages which could occur when using this manual.
4. Read the instructions carefully. Only start setting-up the product if you have understood the information for installation and operation.
5.

Content

1 Safety

1.1 Safety instructions



Read this chapter and the entire instruction manual carefully and follow all instructions listed. This is your assurance for dependable operations and a long life of the device. Keep this instruction manual in a safe place to have it handy every time you need it.

1.2 Symbols and Signal Words used in this Instruction Manual

	**Danger!** Please observe this safety message to avoid electrical shock! There is danger to life!
	**Warning!** Please observe this safety message to avoid bodily harm and injuries!
	**Caution!** Please observe this safety message to avoid damages to property and devices!
	**Notice!** Additional information for the use of the device.

1.3 Intended use

The **DTS 2345.serial-distributor** is a signal distributor for the RS232 and RS422 interfaces. The distributor comprises two identical lines, each of which connects their input interface to three output interfaces.

Please refer to section 3.3 – Function description – for a detailed function description.

1.4 Observe operating safety!

Caution!

- Never open the housing of the device! This could cause an electric short or even a fire, which would damage your device. Do not modify your device!
- The device is not intended for use by persons (including children) with limited physical, sensory, or mental capacities or a lack of experience and/or knowledge.
- Keep packaging such as plastic films away from children. There is the risk of suffocation if misused.

1.5 Consider the installation site!

- To avoid any operating problems, keep the device away from moisture and avoid dust, heat, and direct sunlight. Do not use the device outdoors.
- The DTS 2345.serial-distributor is designed for a 19“ rack and should only be operated installed in a 19“ rack.
- By operating the device, the heat sinks attached to the sides get warm.
  Make sure there is enough air circulation for the heat to dissipate.

Danger! Make sure
that you wait before using the device after any transport until the device has reached the ambient air temperature. Great fluctuations in temperature or humidity may lead to moisture within the device caused by condensation, which can cause a short.

1.6 Observe electromagnetic compatibility!

Caution!

The device complies with the requirements of EMC directive 2004/108/EC and 96/48/EC

2 Maintenance

2.1 Troubleshooting: Repairs

If you cannot rectify the problems, contact your supplier from whom you have purchased the device.

Any repairs must be carried out at the manufacturer's plant.

Disconnect the power supply immediately and contact your supplier, if …

- liquid has entered your device
- the device does not properly work and you cannot rectify this problem yourself.

2.2 Cleaning

- Please make sure that the device remains clean especially in the area of the connections, the control elements, and the display elements.
- Clean your device with a damp cloth only.
- Do not use solvents, caustic, or gaseous cleaning substances.

2.3 Disposing

Device
At the end of its lifecycle, do not dispose of your device in the regular household rubbish. Return your device to your supplier who will dispose of it correctly.

Packaging
Your device is packaged to protect it from damages during transport.
Packaging is made of materials that can be disposed of in an environmentally friendly manner and properly recycled.

3 General Information - introduction

3.1 Scope of delivery

Please check that the delivery is complete and notify your supplier within 14 days of receipt of the delivery if it is not complete.

In the package purchased by you, you have received:

- DTS 2345.serial-distributor
- 1 actuation tool for spring terminals

3.2 Device designation in this manual

This manual relates to the **DTS 2345.serial-distributor**. For purposes of better readability, the designations **serial distributor** or simply **distributor** are used in the following sections.

3.3 Function description

The **DTS 2345.serial-distributor** is a signal distributor for the RS232 and RS422 interfaces.

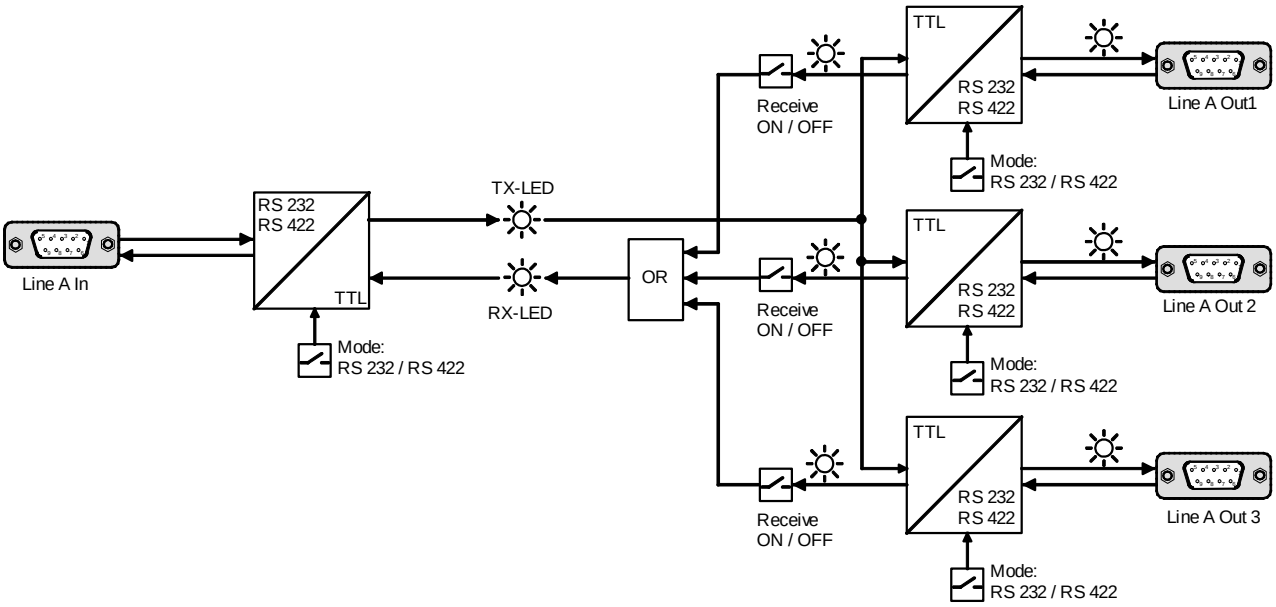
The distributor comprises two identical lines. Each line has an input interface and three output interfaces.

Each input and output interface is individually configurable as a RS232 or RS422 interface. It is not imperative for the inputs and outputs to be configured in the same way.

The signals are transmitted transparently, i.e. without changes to content.

The following illustration shows the block circuit diagram of a line. The signal level is just prepared and monitored.

The following is the block diagram of a line.



3.3.1 Signal transmission

The signal received at the input interface (Rx connection) is transmitted to the downstream devices at all three output interfaces (Tx connection).

In the opposite direction, DIP switches may be used to select which of the data received at the output interfaces (Rx connection) must be transmitted to the Tx connection of the input interface.

The user himself is responsible for the prevention of collisions on the backward channel. In order to do this he must either activate only the backward channel of an output interface or ensure by appropriate protocols that at all times only one of the connected devices attempts to communicate with the superior device.

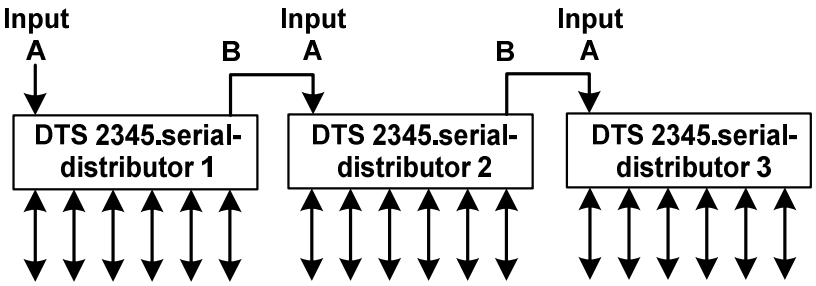
3.3.2 Bridge mode

With the two DIP switches "Bridge Rx In +" and "Bridge Rx In -", the incoming signals of both input interfaces can be connected to each other.

If both incoming signals are connected to each other, the device works as a 1:6 distributor. In this operation mode, the data received at one of the two input interfaces is transmitted to all six output interfaces.

The backward channel is not bypassed. Thus only responses from the three output interfaces that are part of the input interface used can be sent back to the superior device.

If a particularly high number of outputs are necessary, the unused input interface can be directed as cascading output straight to another serial distributor.



3.3.3 Monitoring and alarm system

The Tx signal of each output interface is compared with the Rx signal of the corresponding input interface. If a discrepancy is detected, for example because the output contains a short-circuit, an alarm is activated, which in its turn activates the alarm LED and the alarm relay.

3.3.4 Display

The status of both input interfaces is shown on the front of the distributor by means of their Rx LED and Tx LED. The status of each output interface is shown on the back of the case by means of their Rx LED and Tx LED.

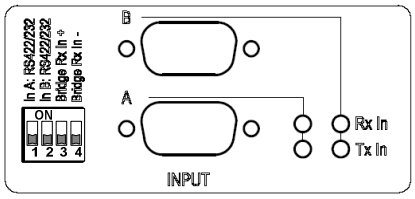
4 Configuration, displays and connections

4.1 Status displays on front

On the front of the case the status of the device is displayed by means of six LEDs.

LED		Status	Meaning
Power		On	The distributor is being supplied.
		Off	The distributor is not being supplied.
Alarm		On	At least one active error.
		Off	No active error.
Input line A	**Rx Data**	flashing	Data is being received (input interface A)
		Off	No data
	Tx Data	flashing	Data is being sent (input interface A)
		Off	No data
Input line B	**Rx Data**	flashing	Data is being received (input interface B)
		Off	No data
	Tx Data	flashing	Data is being sent (input interface B)
		Off	No data

4.2 Inputs – back of case



Both input interfaces of the serial distributor are combined in the input field on the back of the case. It comprises both D-sub connectors for the connection of the interface, the switches for the configuration of the inputs and the signal LEDs for controlling the status of both interfaces

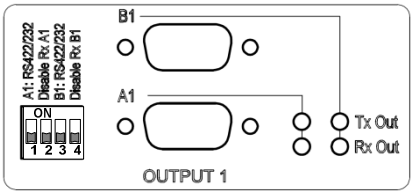
The connectors of both input interfaces have the following pin configuration:

Pin	RS422	RS232
1	-	-
2	Rx+	Rx
3	Tx+	Tx
4	-	-
5	GND	GND
6	-	-
7	Tx-	-
8	Rx-	-
9	-	-

Both input interfaces can be configured as follows:

Switch		Status	Meaning
1	**In A**	RS422 (OFF)	Input A is operated as RS422 interface.
		RS232 (ON)	Input A is operated as RS232 interface.
2	**In B**	RS422 (OFF)	Input B is operated as RS422 interface.
		RS232 (ON)	Input B is operated as RS232 interface.
3	**Bridge Rx In+**	OFF	Signal Rx+ Line A and B independent.
		ON	Signal Rx+ Line A and B internally bypassed.
4	**Bridge Rx In-**	OFF	Signal Rx- Line A and B independent.
		ON	Signal Rx- Line A and B internally bypassed.

4.3 Outputs – back of case



Both a line A and a line B output interface are combined in an output field on the back of the case. It comprises both D-sub 9 connectors for the connection of the interface, the switches for the configuration of the outputs and the signal LEDs for monitoring the status of both interfaces.

The switches of both output interfaces have the following pin configuration:

Pin	RS422	RS232
1	-	-
2	Rx+	Rx
3	Tx+	Tx
4	-	-
5	GND	GND
6	-	-
7	Tx-	-
8	Rx-	-
9	-	-

Both output interfaces can be configured as follows:

Switch		Status	Meaning
1	**Ax**	RS422 (OFF)	Output Ax is operated as RS422 interface.
		RS232 (ON)	Output Ax is operated as RS232 interface.
2	**Disable Rx Ax**	OFF	The backward channel from Ax to input A is disabled.
		ON	The backward channel from Ax to input A is activated.
3	**Bx**	RS422 (OFF)	Output Bx is operated as RS422 interface.
		RS232 (ON)	Output Bx is operated as RS232 interface.
4	**Disable Rx Bx**	OFF	The backward channel from Bx to input B is disabled.
		ON	The backward channel from Bx to input B is activated.

4.4 Supply

The power supply connector has the following pin configuration:

Terminal		Description
1	DC In+	Input for external DC supply 24-65V
2	DC In-	Earth connection for external DC supply

Functional earth port

In order to guarantee safe operation with regard to EMC, the device may be optionally connected to earth via the functional earth port.

4.5 Alarm relay

The alarm relay contacts are configured as follows:

Terminal	Connection	Description
3	Alarm relay opener	Opens on alarm
4	Alarm relay closer	Closes on alarm
5	Alarm relay changeover	Joint pickup

The relay contacts can carry the following loads:

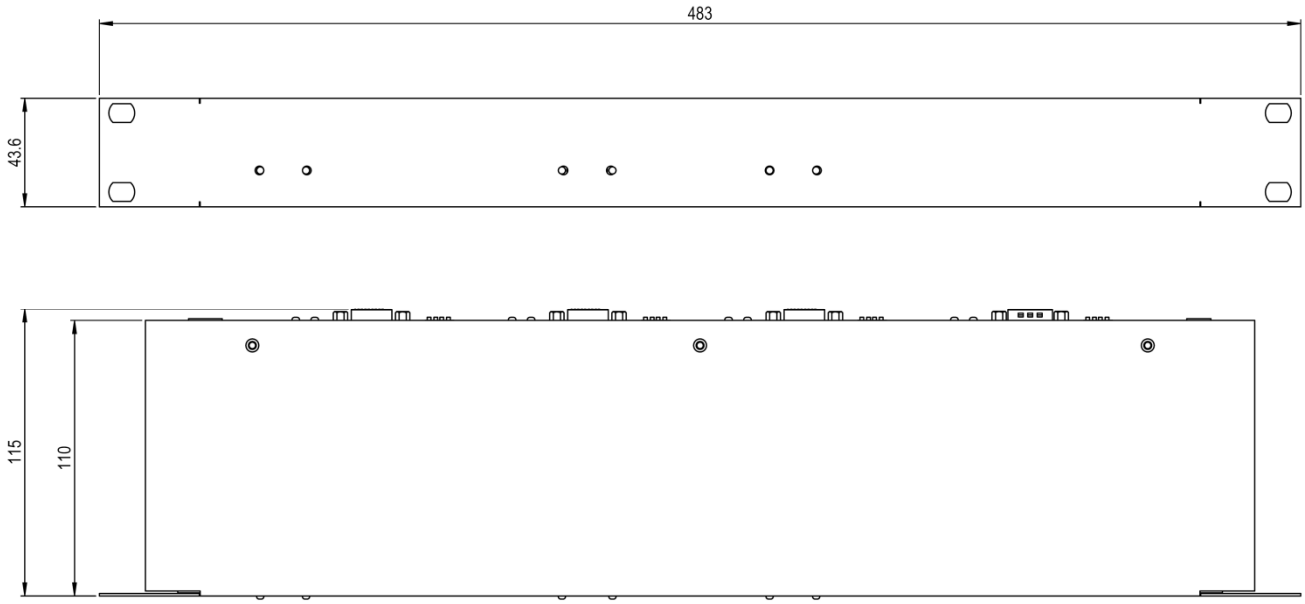
- 30W (max. 60 VDC or max. 1A) or
- 60VA (max. 30 VAC or max. 1A)

5 Technical data

Input	2 serial interfaces, both individually configurable as RS232 or RS422 interfaces.
Output	3 serial interfaces per input. Each output is individually configurable as RS232 or RS422 interface
Supply	24 – 65 VDC
Power consumption	< 20 W
Operation	1 DIP switch per interface for configuration as RS232 or RS422.
	2 DIP switches for bypassing of both inputs.
	1 DIP switch per output for configuration of transmission of RX data to the input.
Display	Power LED – front (green)
	Alarm LED – front (red)
	4x signal-in LEDs – front (green)
	4x signal-in LEDs – back (green)
	12x signal-out LEDs – back (green)
Monitoring	Monitoring of signal levels of outputs and comparison of data with the corresponding input
Alarm	Alarm relay (opener and closer)
	30 W (max. 60 VDC or max. 1 A)
	60 VA (max. 30 VAC or max. 1 A)
Case	19” rack / 1 HU
Temperature	-5 – +50 °C

6 Dimensions of serial distributor

The dimensions of the serial distributor are as follows in millimeters:



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