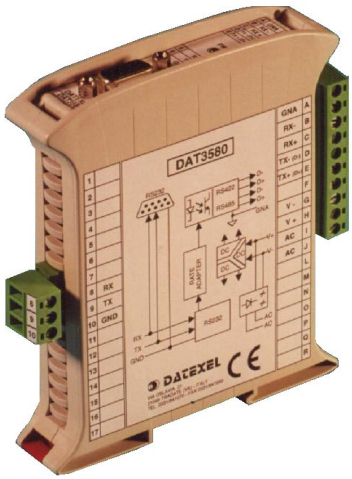
RS-232 to RS-485/RS-422 Converter

DAT 3580

FEATURES
3-way 2000Vac Isolation
Asynchronous data transmission
Automatic fitting of baud rate
Transmission rate up to 115.2Kbaud
Distance up to 1200m
Point-to-point or multipoint connection
24Vdc power supply
Serial line connection on DB9 and removable terminals
Suitable for DIN rail mounting



APPLICATIONS
- Connection of RS-232 equipments to RS-485 or RS-422 equipments
- RS-232 link extension
- Noise protection in industrial environments

GENERAL INFORMATIONS

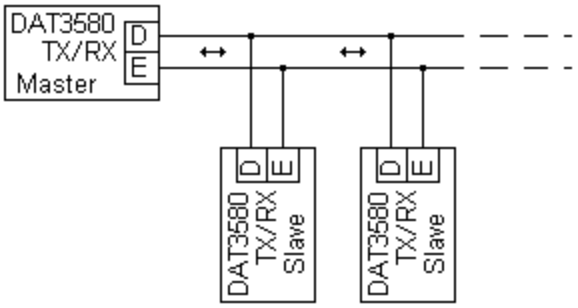
The DAT3580 is an interface converter between serial line RS-232 and RS-485 or RS-422 serial line. It allows a full electric isolation between the lines toghether with an effective protection against the noise that can be verified in the industrial environments.
The 2000Vac isolation between input, output and power supply is obtained by the use of optoisolators over the data line and a DC/DC converter on power supply.
It has been designed to operate on RS-422 serial full-duplex over two twisted pairs or on RS-485 half-duplex over one twisted pairs at a transmission rate from 75 baud to 115.2 Kbaud. An important feature of DAT3580 consists in the fact that , being it able to adapt itself automatically to the baud rate of the transmitted data, it don't need any presetting.
The device, housed in a strong plastic container suitable for DIN rail mounting, uses a connection system based on removable terminal blocks to permit an easy installation and maintenance. The DAT3580 converter, designed, manufactured and tested in strict accordance with the quality assurance standard UNI EN ISO 9001/2000, is in compliance with the directive 89/336/EEC on the electromagnetic compatibility and the CE marK is proof of its compliance.

TECHNICAL SPECIFICATIONS (Typical @25°C and in the nominal conditions)

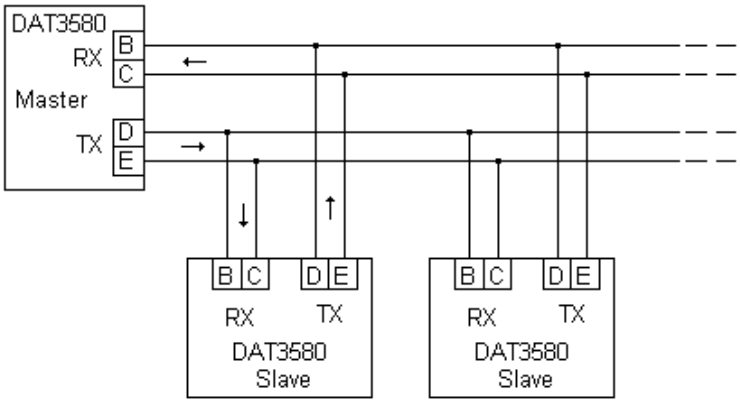
In conformance with EIA RS-232 , RS-422 and RS-485	
Transmission rate	from 75 to 115200 baud
Distance / Rate	1.2 Km @ 38.4 Kbaud 2 Km @ 19.2 Kbaud 3 Km @ 9.6 Kbaud 4 Km @ 4.8 Kbaud 5 Km @ 2.4 Kbaud 7 Km @ 1.2 Kbaud
Line Impedance	100 Ohm
Terminals that can be connected in multipoint RS-485	32 Max.
Consumption	60 mA Max. @ 24 Vdc
Power supply	10 - 30 Vdc 9 - 18 Vac (18-24 Vac on request)
3-way Isolation	2000 Vac, 50 Hz, 1 min.
Electromagnetic Compatibilty(EMC)	In accordance with EN50081-2 and EN50082-2
RS-232 side connection	DB9 and screw terminal blocks
RS-422 and RS-485 side connection	Screw terminal blocks
Operating temperature range	- 20 ÷ 70 °C
Storage temperature range	- 40 ÷ 100 °C
Relative humidity(not condensing)	0 ÷ 90 %
Dimensions (W x H x T) in mm.	101 x 119 x 22,5
Weight	100 g. approx.

WIRING DIAGRAMS

RS-485 (2-wires)



RS-422 (4-wires)



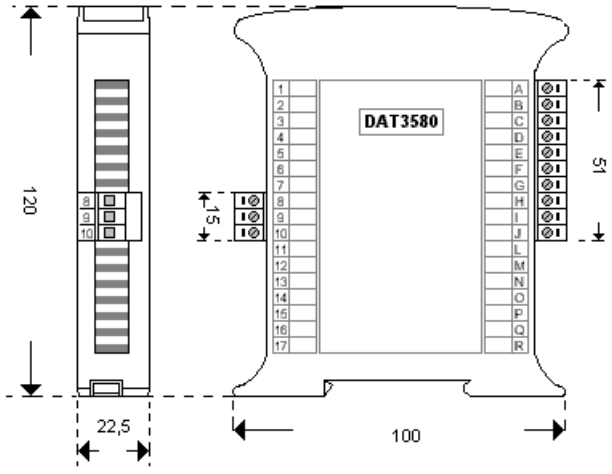
OPERATING INSTRUCTIONS

The DAT3580 device can be connected in a point-to-point or multi-point network, in RS-485 (half-duplex) configuration or RS-422 (full-duplex) configuration. The multi-point network permits a maximum of 32 terminals covering a maximum distance of 1.2 Km at a transmission rate of 115.2 Kbaud. The transmission is of the asyncrhonous serial type, without any need to set the protocol, the character format or the transmission rate.
The wiring diagrams illustrates two multi-point Master-Slave type networks, in 2 or 4 wires configuration. The same connections between Master and Slave can be used in a point-to-point network.
The module can be powered with a dc voltage (10 to 30 Vdc) between G and H pins, and with an ac voltage (9 to 18 Vac, or 18 to 24 Vac optional) between I and J pins.

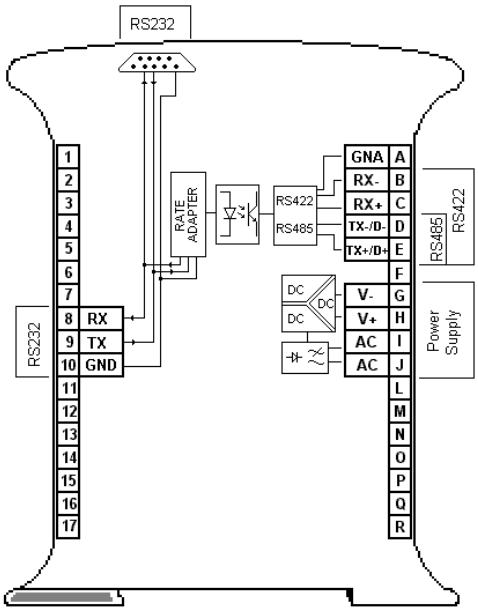
VERSIONS

The DAT3580-2w model is recommended for point-to-point or multi-point networks in RS-485 (2-wires) configuration, but it can be used also in RS-422 configuration, because it can adapt itself automatically to both the configurations.
The DAT3580-4w model is recommended for point-to-point or multi-point networks in RS-422 (4-wires) configuration, in fact, unlike the "2w" version, it avoid the "echo" effect between the slaves in the net, that in some applications can be undesired. It is possible to use this model in RS-485 networks with external connection, linking pin B to pin D and pin C to pin E; making this connection the module receive its own message, that is each message transmitted by the module is immediately received by the module itself.

MECHANICAL DIMENSIONS (mm.)



BLOCK DIAGRAM



RS-232 WIRING TABLE BETWEEN PC AND DAT3580

PC			DAT3580	
DB9		DB25	DB9	TERMINALS
rx	2	3 ←	2	8
tx	3	2 →	3	9
gnd	5	7 —	5	10

HOW TO ORDER:

DAT 3580 - [ ] - [ ]

- "12" = ac power supply 9..18 Vac
- "24" = ac power supply 18..24 Vac
- "2w" = RS-485 - 2-wires
- "4w" = RS-422 - 4-wires

EDIT.06.03-REV.01

DATEXEL S.r.l. - Via Oslavia, 21 21049 TRADATE (VA) ITALY - Tel 0331 - 841070 - Telefax 0331 - 841950