

# FL COMSERVER UNI 232/422/485 - Interface converters



2313452

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**Second generation** FL COMSERVER UNI..., serial device server for converting a serial 232/422/485 interface to Ethernet, supports TCP, UDP, Modbus gateway, and PPP applications, incl. COM port redirector software and user documentation

## Product description

The FL COMSERVER...232/422/485 products are used to integrate serial V.24 (RS-232)/RS-422/RS-485 interfaces into existing Ethernet networks. This provides an easy way of implementing functions such as cable replacement, network integration or a Modbus gateway.

## Your advantages

- Modbus gateway between Modbus/RTU / ASCII and Modbus/TCP
- All connections can be plugged in using a COMBICON screw terminal block
- Configuration via web-based management
- Software for virtual COM ports supplied as standard



# Ethernet



## Commercial data

Item number	2313452
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN11
Product key	DNC321
GTIN	4046356451321
Weight per piece (including packing)	172.9 g
Weight per piece (excluding packing)	120.26 g
Customs tariff number	85176200

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Country of origin	DE
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## Technical data

### Notes

#### Note on application

Note on application	Only for industrial use
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#### Utilization restriction

CCCex note	Use in potentially explosive areas is not permitted in China.
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### Product properties

Product type	Interface converter
Application	TCP, UDP, Modbus gateway, PPP
MTTF	2013 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)
	879 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%)
	359 Years (SN 29500 standard, temperature 40°C, operating cycle 100%)
MTBF	666 Years (Telcordia standard, 25°C temperature, 21% operating cycle (5 days a week, 8 hours a day))
	179 Years (Telcordia standard, 40°C temperature, 34.25% operating cycle (5 days a week, 12 hours a day))

### Functions

Management	Web-based management
	SNMP v1/v2
Supported browsers	Netscape Communicator versions 4.5 and up or Internet Explorer versions 5.5 and up

### System properties

#### Modbus/TCP-Client

Number of Modbus/TCP clients	8
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#### System requirements

Supported browsers	Netscape Communicator versions 4.5 and up or Internet Explorer versions 5.5 and up
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### Electrical properties

Electrical isolation	VCC // Ethernet // Serial
Maximum power dissipation for nominal condition	2.4 W
Test voltage data interface/data interface	1.5 kV <sub>rms</sub> (50 Hz, 1 min.)
Test voltage data interface/power supply	1.5 kV <sub>rms</sub> (50 Hz, 1 min.)

#### Supply

Supply voltage range	19.2 V AC/DC ... 28.8 V AC/DC (via pluggable COMBICON screw terminal block)
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	22.8 V DC ... 25.2 V DC (as an alternative or redundant, via backplane bus contact and system current supply)
Typical current consumption	100 mA (24 V DC)
Function	
Management	Web-based management, SNMP, emergency exit with Telnet and serial
Status and diagnostic indicators	LEDs: UL (logic voltage), TD + RD (data activity serial), FD (full duplex), 100 (100 Mbps mode), Link (Ethernet), Activity (Ethernet), ERR (error)

## Connection data

### Supply

Single conductor/terminal point, rigid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Single-wire/terminal point, flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Stripping length	7.00 mm
Tightening torque	0.5 Nm ... 0.6 Nm

## Interfaces

Signal	Ethernet
	Modbus
Web server	yes

Data: Ethernet interface, 10/100Base-T(X) in accordance with IEEE 802.3

Serial transmission speed	10/100 Mbps, auto negotiation
Connection method	RJ45 jack, shielded
No. of channels	1
Transmission length	≤ 100 m (shielded twisted pair)
Protocols supported	TCP/IP, UDP, Modbus (TCP, RTU/ASCII), PPP
Auxiliary protocols	ARP, DHCP, BOOTP, SNMP, RIP, RARP, HTTP, TFTP, ICMP
Data flow control/protocols	Modbus/TCP

Data: V.24 (RS-232) interface in acc. with ITU-T V.28, EIA/TIA-232, DIN 66259-1

Serial transmission speed	0.3; 0.6; 1.2; 2.4; 4.8; 7.2; 9.6; 19.2; 38.4; 57.6; 115.2; 187.5; 230.4 kbps
Connection method	D-SUB 9 plug
Tightening torque	0.4 Nm
Pin assignment	DTE/DCE switchover via web-based management
Transmission length	15 m
File format/coding	UART/NRZ: 7/8 Bit Data, 1/2 Bit Stopp, None/Even/Odd Parity
Data flow control/protocols	Software handshake, Xon/Xoff, or hardware handshake RTS/CTS // 3964 R compatible, Modbus RTU/ASCII

Data: RS-422 interface in acc. with ITU-T V.11, EIA/TIA-422, DIN 66348-1

Serial transmission speed	0.3; 0.6; 1.2; 2.4; 4.8; 7.2; 9.6; 19.2; 38.4; 57.6; 115.2; 187.5; 230.4; 500; 1000 kbps
Connection method	Plug-in/screw connection via COMBICON
Transmission length	≤ 1200 m

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Termination resistor	390 Ω (configurable)
	180 Ω
	390 Ω
File format/coding	UART/NRZ: 7/8 Bit Data, 1/2 Bit Stopp, None/Even/Odd Parity
Data flow control/protocols	Automatic control

Data: RS-485 interface, in acc. with EIA/TIA-485, DIN 66259-4/RS-485 2-wire

Serial transmission speed	0.3; 0.6; 1.2; 2.4; 4.8; 7.2; 9.6; 19.2; 38.4; 57.6; 115.2; 187.5; 230.4; 500; 1000 kbps
Connection method	Plug-in/screw connection via COMBICON
Termination resistor	390 Ω
	180 Ω
	390 Ω (configurable)
File format/coding	UART/NRZ: 7/8 Bit Data, 1/2 Bit Stopp, None/Even/Odd Parity
Data flow control/protocols	Automatic control

## Dimensions

Width	22.5 mm
Height	99 mm
Depth	116 mm

## Material specifications

Color (Housing)	green (RAL 6021)
Material (Housing)	PA 6.6-FR

## Mechanical tests

Free fall in accordance with IEC 60068-2-32	Free fall: 1 m
Vibration resistance in accordance with EN 60068-2-6/IEC 60068-2-6	: 5g, 10...150 Hz, 2.5 h, in XYZ direction
Shock in accordance with EN 60068-2-27/IEC 60068-2-27	: 15g, 11 ms period, half-sine shock pulse
	: 30g, 11 ms period, half-sine shock pulse

## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-25 °C ... 60 °C
	-20 °C ... 60 °C (in acc. with UL)
Ambient temperature (storage/transport)	-25 °C ... 70 °C
Altitude	≤ 5000 m (For restrictions, see the manufacturer's declaration for altitude operation)
Permissible humidity (operation)	10 % ... 95 % (non-condensing)
Permissible humidity (storage/transport)	5 % ... 95 % (non-condensing)

## Approvals

CE

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Certificate	CE-compliant
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## ATEX

Identification	Ⓜ II 3 G Ex ec IIC T4 Gc
Certificate	PxCIF11ATEX2313478X
Note	Please follow the special installation instructions in the documentation!

## UL, USA/Canada

Identification	508 Listed
	Class I, Div. 2, Groups A, B, C, D

## UL, USA

Identification	Class I, Zone 2, AEx nA IIC T5
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## UL, Canada

Identification	Class I, Zone 2, Ex nA IIC T5 Gc X
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## KC approval for South Korea

Certificate	MSIP-REI-PCK-2313452
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## Corrosive gas test

Identification	ISA-S71.04-1985 G3 Harsh Group A
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## EMC data

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Noise immunity	EN 61000-6-2:2005

## Noise emission

Standards/regulations	EN 61000-6-4
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## Electrostatic discharge

Standards/regulations	EN 61000-4-2
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## Electrostatic discharge

Contact discharge	± 6 kV
Discharge in air	± 8 kV
Comments	Criterion B

## Electromagnetic HF field

Standards/regulations	EN 61000-4-3
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## Electromagnetic HF field

Field intensity	10 V/m
Comments	Criterion A

## Fast transients (burst)

Standards/regulations	EN 61000-4-4
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## Fast transients (burst)

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Input	2 kV (5 kHz)
Signal	1 kV (5 kHz)
Comments	Criterion A

## Surge current load (surge)

Standards/regulations	EN 61000-4-5
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## Surge current load (surge)

Input	2 kV
Signal	1 kV
Comments	Criterion B

## Conducted interference

Standards/regulations	EN 61000-4-6
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## Conducted interference

Comments	Criterion A
Voltage	10 V

## Emitted interference

Standards/regulations	EN 55032
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## Criteria

Criterion A	Normal operating behavior within the specified limits.
Criterion B	Temporary impairment to operational behavior that is corrected by the device itself.

## Standards and regulations

Free from substances that could impair the application of coating	VDMA 24364:2018-05
Standards/regulations	EN 50121-4
Standard designation	Railway applications

## Mounting

Mounting type	DIN rail mounting
Assembly note	The product can be snapped onto all 35 mm DIN rails in accordance with EN 60715.

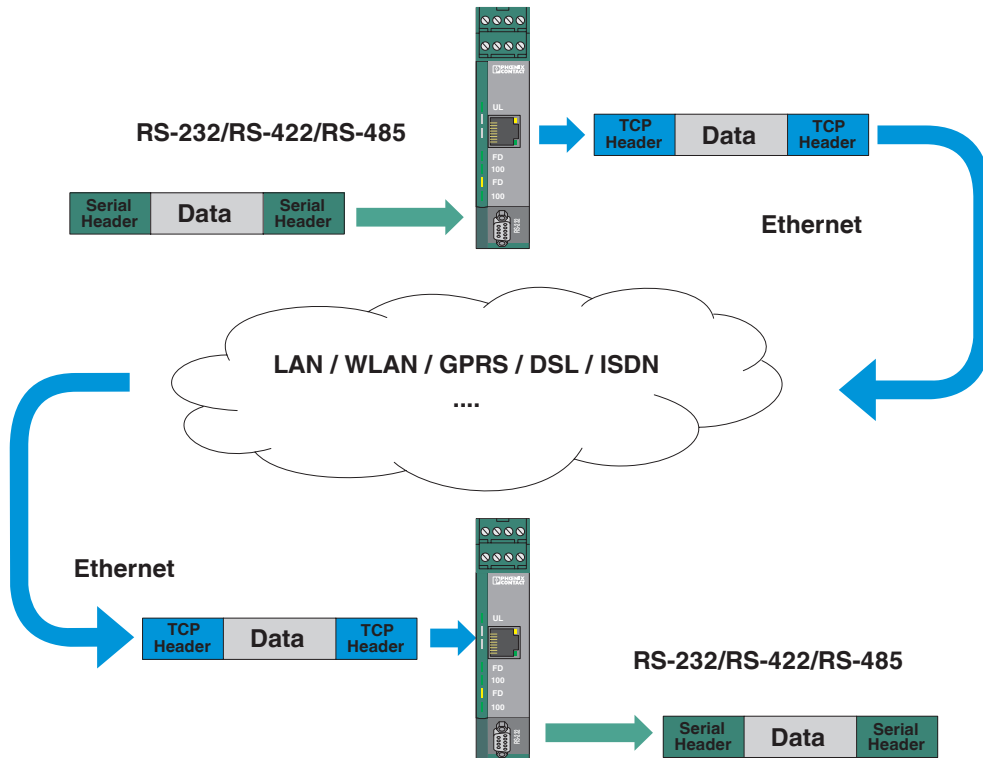
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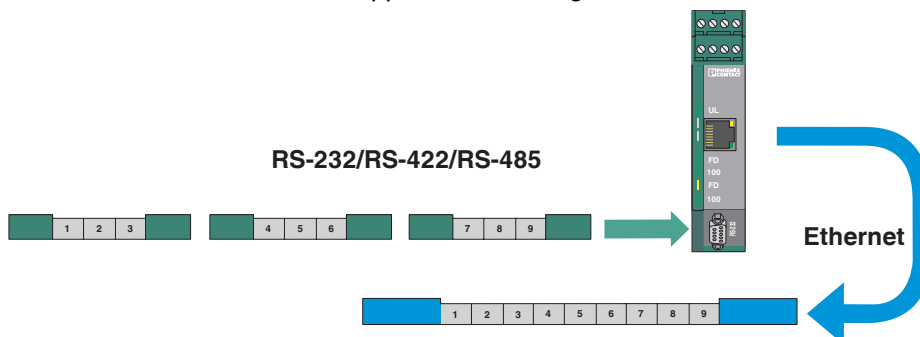
## Drawings

Application drawing



Serial data transmission via Ethernet

Application drawing



Large value: "Idle Force Timeout Characters"

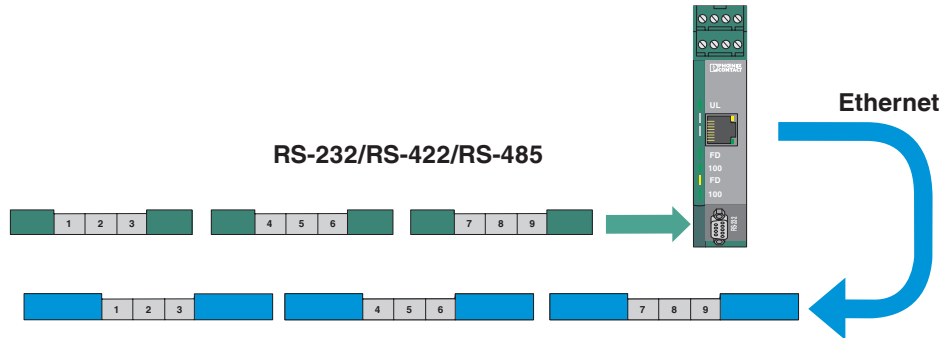
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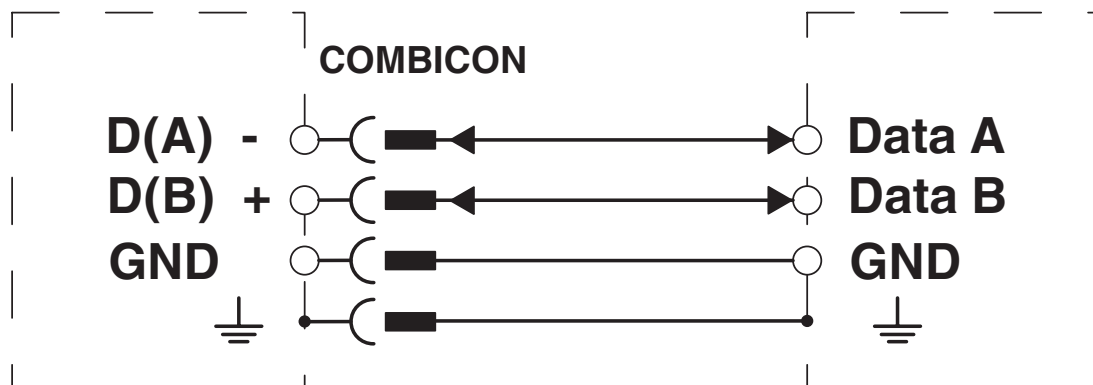
Application drawing



Small value: "Idle Force Timeout Characters"

Connection diagram

## FL COMSERVER RS-485



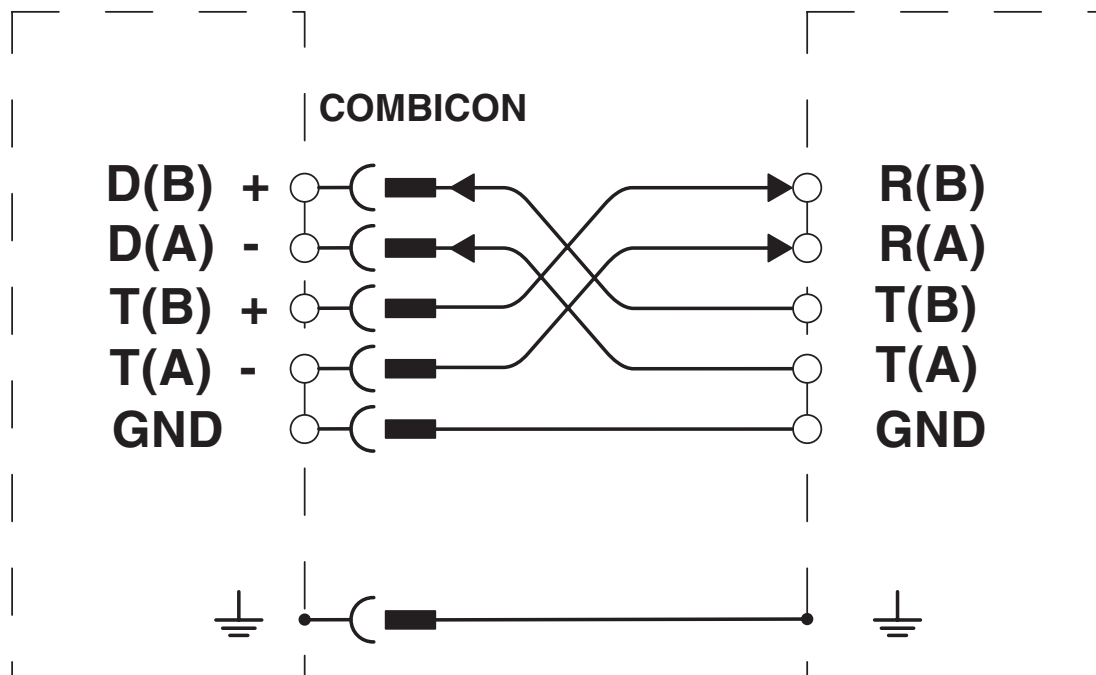
RS-485 connection

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Connection diagram

## FL COMSERVER RS-422



RS-422 connection

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## Approvals


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 **UL Listed**  
Approval ID: E238705

 **cUL Listed**  
Approval ID: E238705

 **KC**  
Approval ID: MSIP-REI-PCK-2313452

 **cUL Listed**  
Approval ID: E199827

 **UL Listed**  
Approval ID: E199827

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## Classifications

### ECLASS

ECLASS-13.0	27242208
ECLASS-15.0	27242208

### UNSPSC

UNSPSC 21.0	43222600
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	6(c), 7(a), 7(c)-I

### China RoHS

Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

### EU REACH SVHC

REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
SCIP	19a2f08d-521a-4fb9-860d-39c82142c9b4

### EF3.1 Climate Change

CO2e kg	17.23 kg CO2e
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