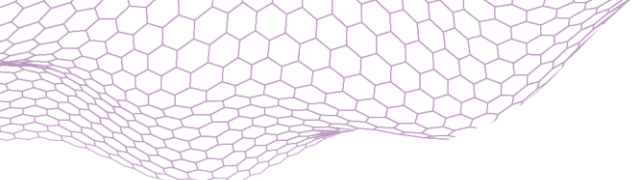




# 1 PORT RS232/485 DIN-RAIL ETHERNET SERIAL DEVICE SERVER

## DDSE SERIES





## SYNOPSIS

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- EQUIPPED WITH 1 × RS232/RS485 SERIAL INTERFACE AND 1 × 10/100 MBPS ETHERNET PORT
- SUPPORTS MULTIPLE COMMUNICATION PROTOCOLS INCLUDING UDP, TCP, MODBUS, HTTP, WEBSOCKET, MQTT, AND VIRTUAL SERIAL PORT
- ENABLES SEAMLESS PROTOCOL CONVERSION BETWEEN MODBUS RTU/ASCII AND MODBUS TCP
- SUPPORTS TRANSPARENT TRANSMISSION OF MODBUS RTU/ASCII OVER TCP
- INDUSTRIAL-GRADE DESIGN WITH WIDE-RANGE DC 9–36V POWER INPUT AND REVERSE POLARITY PROTECTION
- OPERATES RELIABLY ACROSS AN EXTENDED TEMPERATURE RANGE OF -40°C TO +85°C
- PROVIDES ROBUST PROTECTION WITH HIGH-LEVEL ESD, SURGE, AND EFT IMMUNITY FOR POWER, ETHERNET, AND SERIAL INTERFACES

## FEATURES

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- POWERED BY A 32-BIT ARM CORTEX-M7 PROCESSOR WITH A CLOCK FREQUENCY OF UP TO 400 MHZ
- INTEGRATED HARDWARE WATCHDOG MECHANISM TO ENSURE SYSTEM STABILITY AND PREVENT UNEXPECTED CRASHES
- SERIAL INTERFACE SUPPORTS CONFIGURABLE BAUD RATES RANGING FROM 600 BPS TO 460.8 KBPS
- SUPPORTS UDP AND UDP MULTICAST MODES, ENABLING EFFICIENT POINT-TO-POINT, POINT-TO-MULTIPOINT, AND MULTIPOINT-TO-MULTIPOINT COMMUNICATION
- SUPPORTS TCP CLIENT AND SERVER MODES FOR RELIABLE SESSION-BASED COMMUNICATION; TCP CLIENT SUPPORTS UP TO 4 CONCURRENT SESSIONS, WHILE TCP SERVER SUPPORTS UP TO 8 CONCURRENT SESSIONS
- COMPLIANT WITH RFC2217, ALLOWING DYNAMIC MODIFICATION OF SERIAL COMMUNICATION PARAMETERS SUCH AS BAUD RATE
- SUPPORTS PAIR CONNECTION IN MASTER/SLAVE MODE FOR SIMPLE AND RELIABLE DEVICE PAIRING
- SUPPORTS MODBUS RTU/ASCII MASTER AND SLAVE MODES WITH SEAMLESS PROTOCOL CONVERSION BETWEEN MODBUS TCP AND MODBUS RTU/ASCII
- ENABLES MODBUS SLAVE PRE-FETCHING WITH AUTOMATIC LEARNING CAPABILITY FOR UP TO 32 RTU OR 16 ASCII COMMANDS, ENSURING FAST RESPONSE TIMES
- SUPPORTS REALCOM FUNCTIONALITY FOR MAPPING NETWORK DEVICES TO LOCAL COM PORTS, ENABLING TRANSPARENT SERIAL COMMUNICATION OVER IP NETWORKS
- SUPPORTS HTTP CLIENT MODE WITH GET AND POST METHODS FOR INTERACTION WITH HTTP SERVERS
- SUPPORTS WEBSOCKET CLIENT MODE FOR FULL-DUPLEX, BIDIRECTIONAL COMMUNICATION WITH WEBSOCKET SERVERS
- PROVIDES FLEXIBLE PACKET SEGMENTATION MECHANISMS BASED ON DATA LENGTH OR TIME INTERVALS, OPTIMIZING SERIAL-TO-ETHERNET DATA TRANSMISSION FOR REAL-TIME APPLICATIONS
- SUPPORTS REGISTRATION AND HEARTBEAT PACKETS FOR CONNECTION AUTHENTICATION AND REAL-TIME STATUS MONITORING
- SUPPORTS MODBUS VIRTUAL ID MAPPING TO ELIMINATE CONFLICTS CAUSED BY DUPLICATE SLAVE IDS
- PROVIDES CONFIGURATION OF SERIAL COMMUNICATION PARAMETERS, OPERATING MODES, AND REAL-TIME TRANSMISSION/RECEPTION STATISTICS MONITORING

## TECHNICAL SPECIFICATIONS

### INTERFACE

|                         |                                                                                                                                                                                                                   |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>100M Copper Port</b> | 1x10/100Base-T(X) auto-sensing RJ45ports, support full/half duplex, Auto MDI/MDI-X                                                                                                                                |
| <b>Serial Port</b>      | Serial port type : 1 * RS232/485<br>Baud rate : 600bps to 460800bps<br>Data bits : 7bit, 8bit<br>Stop bit : 1 bit, 2 bit<br>Check bits : None, Odd, Even<br>Connection method : 5.08mm pitch 5-pin terminal block |
| <b>Button</b>           | One-click restart, or factory reset                                                                                                                                                                               |
| <b>Status LED</b>       | Power LED; Operation LED; Ethernet interface speed and connection/activity status LED; Serial port sending and receiving data LED                                                                                 |

### SOFTWARE

|                                        |                                                                                                                      |
|----------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| <b>Network Protocol</b>                | IP, TCP/UDP, ARP, ICMP, DHCP, DNS, HTTP, RFC2217                                                                     |
| <b>IP Obtaining Method</b>             | Static IP/DHCP                                                                                                       |
| <b>Domain Name Resolution</b>          | Support                                                                                                              |
| <b>User Configuration</b>              | Web configuration                                                                                                    |
| <b>Simple Transparent Transmission</b> | UDP/ UDP Multicast/ TCP Client/ TCP Server/ RealCOM/ Pair Connection                                                 |
| <b>Modbus</b>                          | Modbus RTU/ASCII to Modbus TCP                                                                                       |
| <b>Serial Packaging Mechanism</b>      | The time and length can be set. The default value varies based on the baud rate. Maximum packaging length 1460 bytes |
| <b>TCP Server Connection</b>           | Single serial port supports up to 8 TCP client connections                                                           |
| <b>Network Cache</b>                   | Send: 16Kbyte; Received: 16Kbyte                                                                                     |
| <b>Serial Cache</b>                    | Send: 1.5Kbyte; Received: 1.5Kbyte                                                                                   |
| <b>Heartbeat Package</b>               | Support TCP Keepalive mechanism and customize heartbeat packet content                                               |
| <b>Registration Package</b>            | Custom registration package content                                                                                  |
| <b>RFC2217</b>                         | Supported                                                                                                            |
| <b>HTTPD Client</b>                    | Supported                                                                                                            |
| <b>Websocket Client</b>                | Supported                                                                                                            |
| <b>RealCOM</b>                         | Support                                                                                                              |
| <b>Average Transmission Delay</b>      | <10ms                                                                                                                |

## POWER

|                          |                                   |
|--------------------------|-----------------------------------|
| <b>Input Voltage</b>     | DC 9 to 36V                       |
| <b>Power Consumption</b> | < 0.8W@DC12V                      |
| <b>Connection</b>        | 5.08mm pitch 2-pin terminal block |

## MECHANICAL

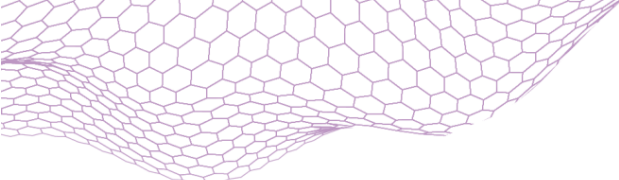
|                      |                                              |
|----------------------|----------------------------------------------|
| <b>Dimensions</b>    | 90×28×65mm (Din-rail mounting clip excluded) |
| <b>Installations</b> | 35mm standard Din-rail mounting              |
| <b>Housing</b>       | Plastic housing                              |
| <b>Weight</b>        | Approximately 90g                            |

## ENVIRONMENT

|                              |                           |
|------------------------------|---------------------------|
| <b>Operating temperature</b> | -40 to 85°C               |
| <b>Storage temperature</b>   | -40 to 85°C               |
| <b>Relative humidity</b>     | 5% to 95% (no condensing) |

## APPROVALS & STANDARDS TESTED FOR

|                      |                                                                                                                                  |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <b>IEC 61000-4-2</b> | Electrostatic Discharge<br>Air discharge: ±4kV<br>Contact discharge: ±4kV                                                        |
| <b>IEC 61000-4-4</b> | Electrical Fast Transient<br>Power supply: ±0.5kV<br>Data port: ±0.5kV                                                           |
| <b>IEC 61000-4-5</b> | Surge Immunity<br>Power supply: Differential mode ±2kV<br>RS485: Differential mode ±2kV<br>Ethernet port: differential mode ±2kV |



## ORDERING CODE

DDSE M D 24 P ME

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|             |                                         |
|-------------|-----------------------------------------|
| <b>DDSE</b> | 1* RS232/485 Serial to Ethernet Gateway |
| <b>M</b>    | Modbus Supported                        |
| <b>D 24</b> | Supply 24 VDC (Ranges 9 to 36V)         |
| <b>P</b>    | Plastic Enclosure                       |
| <b>ME</b>   | Fixed                                   |

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