



TOP-TSR4002C

Intelligent 4G/3G/2G Remote Control Device

8-Ch AI, 1-Ch AO, 12-Ch DI and 6-Ch DO Module

Features	
■	Multi-band LTE-TDD/LTE-FDD/HSPA+ and GSM/GPRS/EDGE
■	Dual-band UMTS/HSDPA 900/1800 MHz
■	Modbus/TCP-UDP-ASCII-RTU Protocol for SCADA Software
■	Support Modbus Master Protocol
■	Support DNP3/TCP-Serial_IEC60870-101-104 Protocol
■	Support DNP3 Master Protocol
■	Ethernet, serial, and cellular communication
■	10/100 Base-TX Ethernet / RS485 / RS232
■	IO Scan Time < 1ms

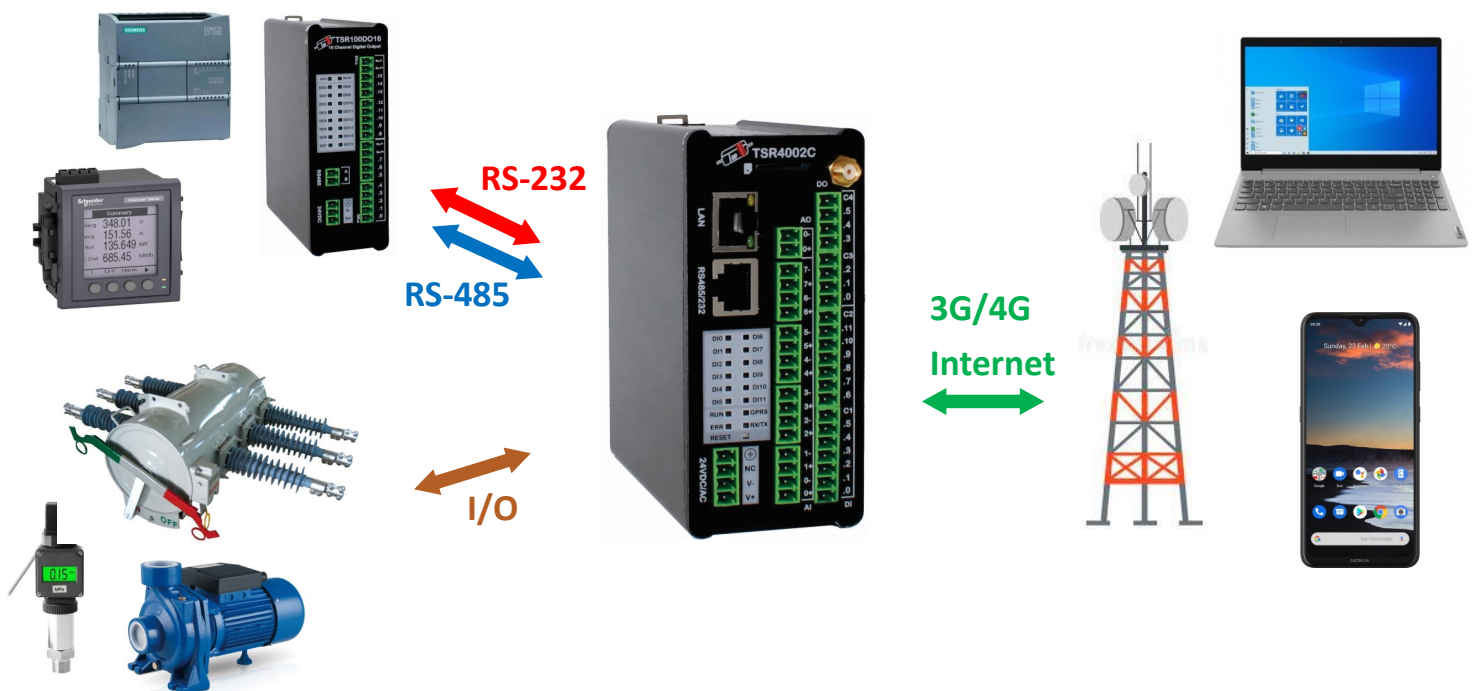
Introduction

TSR400x RTU controllers are compact, industrial-grade standalone RTUs with internal LTE Modem for remote monitoring and control applications.

TSR4002 has 12 programmable INPUTs with IO Scan Time < 1ms and 6 OUTPUTs. TSR4002 has 8 ANALOG INPUTs for metering 4-20 mA current or 0-10 volt and 1 ANALOG OUTPUT.

TSR4002 has 3 Communication ports for DNP3.0, MODBUS, IEC60870-5-101,104 and Interface Software.

Application

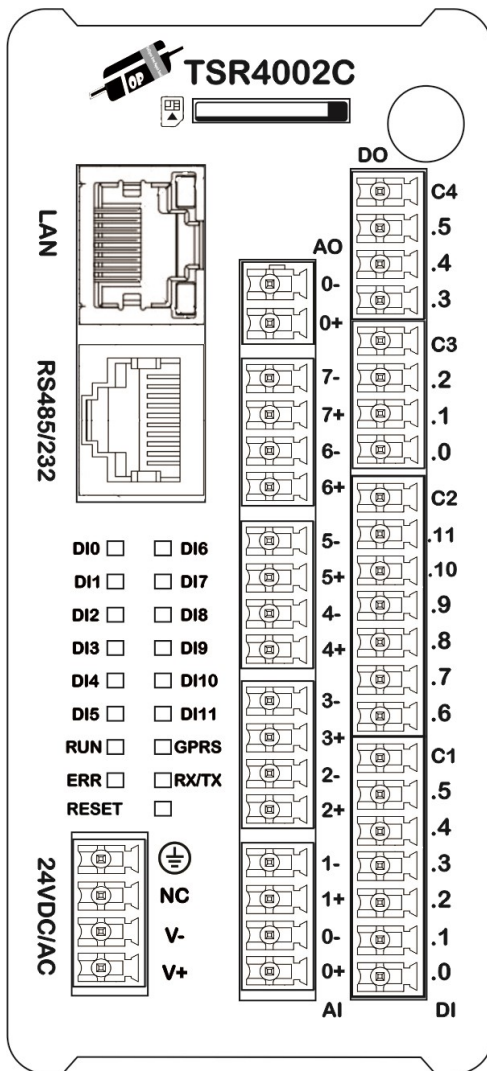


System Specification

System		
CPU		ARM Cortex M7
SRAM		1 Mbyte
Flash Memory	Internal	2 Mb High Speed Flash
	External	32 Mb
Watchdog Timer		Yes
LED Indicator		16LEDs (RUN, GPRS, RX/TX, ERR,12DI)
Communication		
Ethernet Port		10/100 Base-TX and automatic MDI/MDI-X
Serial Port	RS485	Modbus master Modbus slave (ASCII – RTU)
	RS232	Modbus master Modbus slave (ASCII – RTU) DNP3 Slave IEC60870-101
LED Indicators		
RUN		System Running
ERR		Fault Indicator
RX/TX		Serial
GPRS		NET
DI0 ~ DI11		Digital Inputs
Power Requirements		
Reverse Polarity Protection		Yes
Frame Ground Protection		ESD , Surge, EFT, Hi-Pot
Powered from Terminal Block		Yes, +18 Vdc ~ +36 Vdc
Power Consumption		5.52W (230mA@24V)
Mechanical		
Casting		Metal
Dimension (W x L x H)		50mm x 105mm x 112mm
Installation		DIN-Rail or Wall mounting

Cellular Interface		
Standards		LTE-TDD/LTE-FDD/HSPA+
Band Option	Multi-band GSM/GPRS/EDGE 900/1800 MHz	
	LTE-TDD B38/B40/B41 FDD-LTE B1/B3/B5/B7/B8/B20	
HSPA+ Data Rate		Max. 5.76Mbps(UL) , 42Mbps(DL)
LTE cat1 Data Rate		5Mbps (UL) , 10Mbps(DL)
GPRS Data Rate		85.6Kbps (DL/UL)
GPRS Multi-Slot Class		Class 12
Analog Input		
Channels		8 (Differential)
Range		0 ~ +10 V, 0~20mA , 4~20mA
Resolution		16 bit
Sampling Rate		100 K Sample/Sec. (Total)
Accuracy		±1 LSB
Overcurrent Protection		40 mA Max.
Individual Channel Configuration		Yes
Input Impedance	Voltage	2MΩ
	Current	150Ω
Analog Output		
Channels		1
Range		0 ~ +10 V
Resolution		12 bit
Digital Input		
Channels		12 (Sink & Source)
Type		Isolated Contact
On Voltage Level		+10 VDC ~ +40 VDC
Off Voltage Level		+4 VDC Max.
Input Impedance		10 KΩ , 0.5W
Overvoltage Protection		+40 VDC
Digital Output		
Channels		6
Type		Form A (N.O.) Relay
Environment		
Operating Temperature		-20 °C ~ +70 °C
Storage Temperature		-40 °C ~ +85 °C
Humidity		10 ~ 90% RH, Non-condensing

Pin Assignment



Power & Communication			
Power Supply		V+	DC +24v
		V-	DC GND
			Earth
COM1	RS232	1	GND
		2	RTS
		3	TXD
		4	RXD
		6	CTS
	RS485	7	RS485+
	8	RS485-	
LAN	Ethernet 10/100		

Inputs And Outputs		
Analog Inputs	0+	AIN0+
	0-	AIN0-
	1+	AIN1+
	1-	AIN1-
	2+	AIN2+
	2-	AIN2-
	3+	AIN3+
	3-	AIN3-
	4+	AIN4+
	4-	AIN4-
	5+	AIN5+
	5-	AIN5-
	6+	AIN6+
	6-	AIN6-
7+	AIN7+	
7-	AIN7-	
Analog Output	0+	AOUT0+
	0-	AOUT0-
Digital Inputs	.0	DIN1
	.1	DIN2
	.2	DIN3
	.3	DIN4
	.4	DIN5
	.5	DIN6
	C1	COM1
	.6	DIN7
	.7	DIN8
	.8	DIN9
	.9	DIN10
	.10	DIN11
	.11	DIN12
	C2	COM2
Digital Outputs	.0	DOUT1
	.1	DOUT2
	.2	DOUT3
	C3	COM3
	.3	DOUT4
	.4	DOUT5
	.5	DOUT6
	C4	COM4