

# TOTUS DGA Communication and IO Guide



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## Communication Carriers and Protocols

The following communication carriers and protocols are provided as standard

Protocol	Carrier			
	Ethernet via UTP	GSM	RS232	RS485
Web Server HTTP & HTTPS	✓	✓	-	-
Modbus TCP	✓	-	-	-
Modbus RTU	-	-	✓	✓

**Fig 1:** Standard communication carriers and protocols

The following communication carriers and protocols are provided as optional extras

Protocol	Carrier			
	Ethernet via UTP	Ethernet via Fiber	RS232	RS485
Web Server HTTP & HTTPS	-	✓	-	-
Modbus TCP	-	✓	-	-
DNP3	✓	✓	✓	✓
IEC61850	✓	✓	-	-

**Fig 2:** Optional communication carriers and protocols

\*To provide Ethernet via Fiber we require information on mode, fiber diameter and connection type.

## I/O Connections

The following I/O connections are provided as standard.

	Inputs	Outputs
Digital	5x 24V Isolated	4x NO or NC, user configurable Relays rated for 6A @250Vac
Analog	3x PT100 (for temperature sensors)** 3x 4-20mA 1x Load CT	-

**Fig 3:** Standard I/O Connections

The following I/O connections are provided as optional extras.

	Inputs	Outputs
Analog	Fiber Optic Temperature Sensor Input	8x 4-20mA output

**Fig 4:** Optional I/O Connections

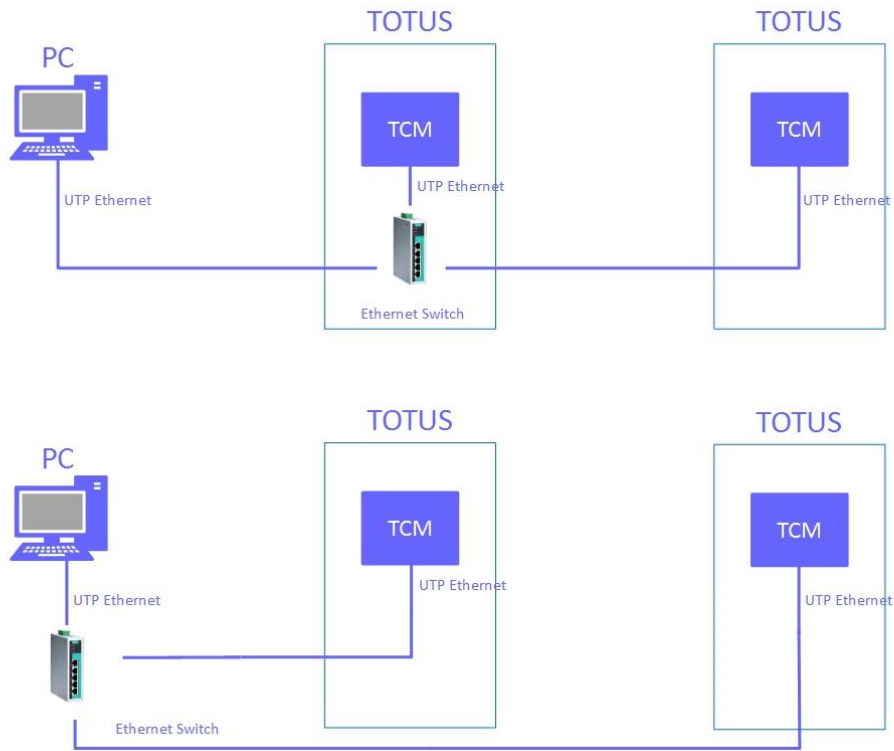
\*\***TOTUS DGA** comes with an ambient temperature sensor as standard. One additional PT100 magnetic mount temperature sensor is also included as standard. Additional sensors can be purchased from **Camlin Power**.

## Network Topologies

The diagrams on the following pages show possible physical configurations. It is possible to combine different elements if required.

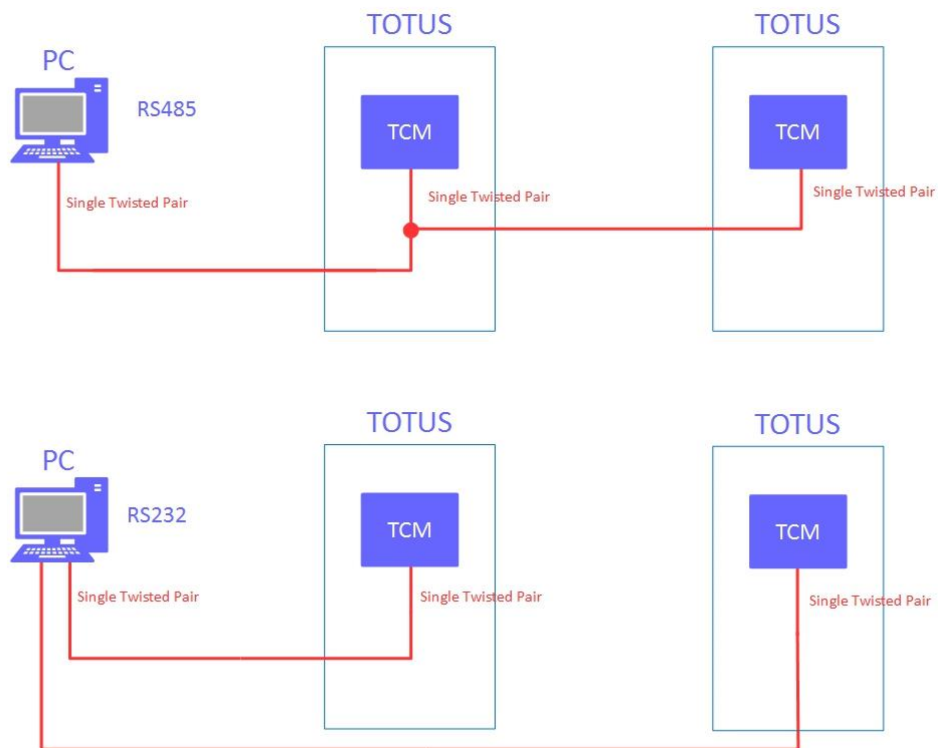
## Ethernet via UTP

The following diagrams show two possible physical configurations.



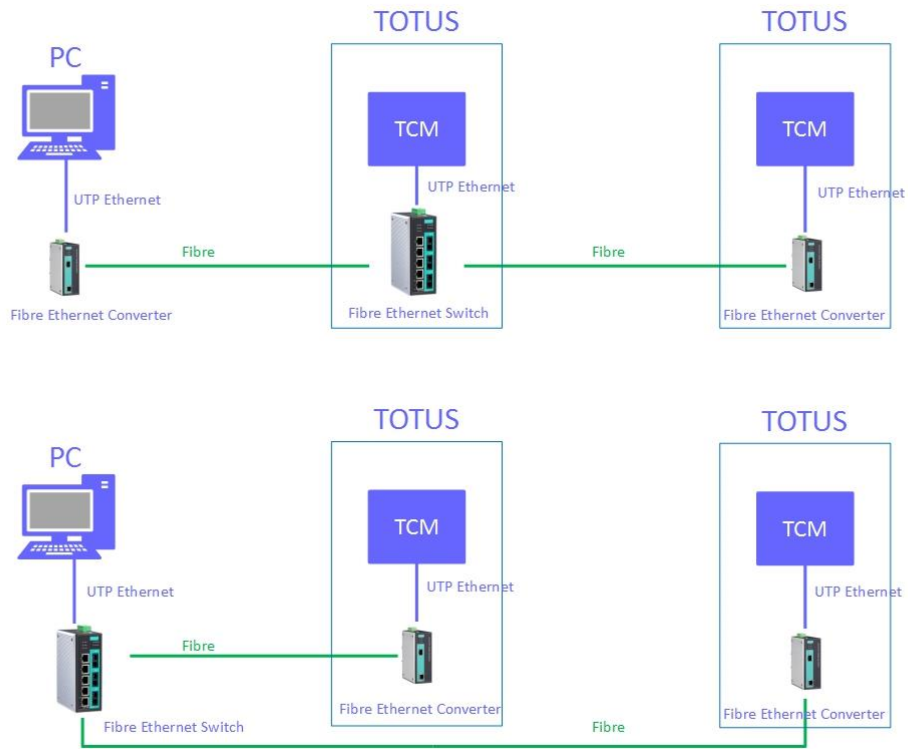
## Serial – RS485 and RS232

The difference in connections here, is that RS485 can be “daisy-chained” between all devices, RS232 requires an individual run for each device, and suitable individual termination.



## Ethernet via Fiber

The following diagrams show two possible physical configurations.



## Ethernet via DSL Extenders

With the use of DSL Extenders, you can use existing twisted pair cable that may already be run for serial, to allow full Ethernet access.

