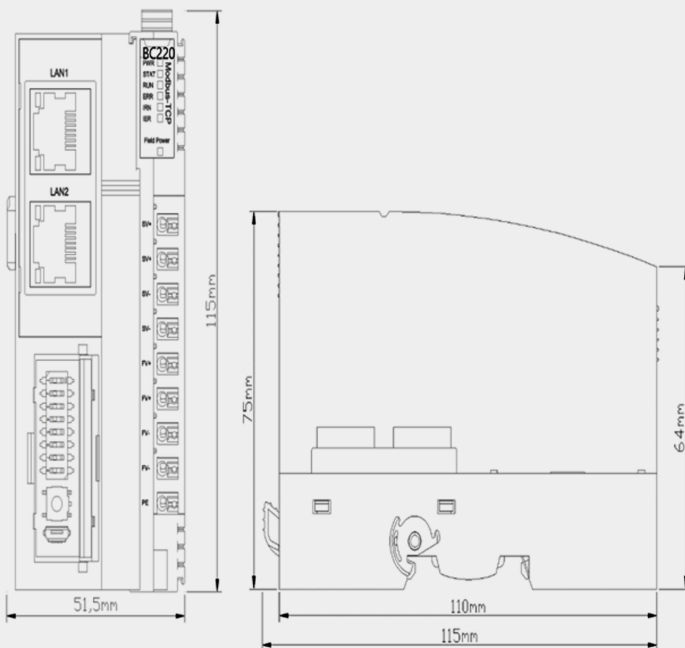


Overview :

The BC220 Modbus TCP Network Adapter facilitates standard communication between devices over a network via Modbus TCP Server Communication. Utilizing Ethernet connectivity, it seamlessly integrates with dual-port switches for multi-device connectivity. Supporting up to 5 Modbus TCP clients concurrently, it accommodates various Modbus function codes and boasts a watchdog feature for real-time monitoring. With a capacity of handling up to 8192 bytes of data and supporting connection to 32 extension IO modules, it offers robust diagnostic capabilities for seamless communication monitoring.

Dimension drawing :

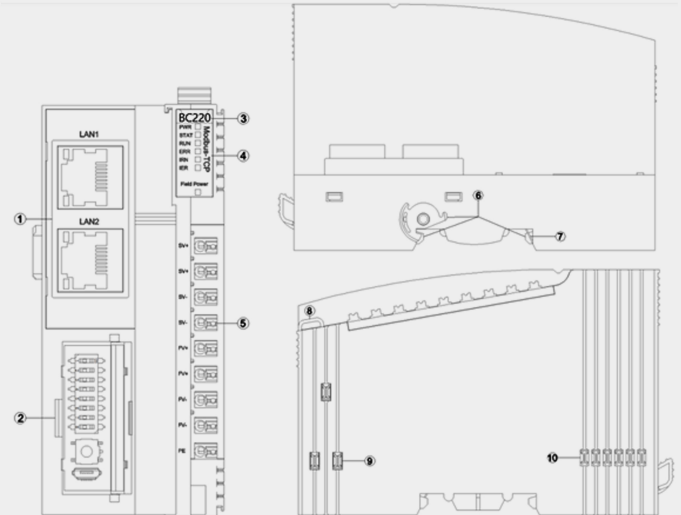


Network Interface :

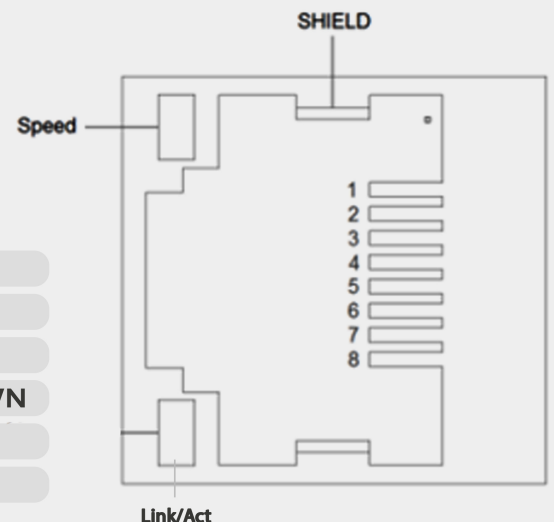
LAN1/LAN2 support switch function, 10Mbps and 100Mbps data rates, MDI/MID-X auto crossover.

Speed	Network Speed (Green)	ON	100Mbps
		OFF	10Mbps
Link/Act	Link State Active State(Orange)	ON	Link UP
		OFF	Link DOWN
		Flash	Active
SHIELD	RJ45 Shield Interface		

Hardware Interface:



- ① Network Interface
- ② Config Interface
- ③ Module type
- ④ LED Indicator
- ⑤ Wiring Terminal
- ⑥ Buckle
- ⑦ Grounding Resilient Sheet
- ⑧ Fixed Wiring Harness
- ⑨ Field Power
- ⑩ Internal Bus



Pin	Definition	Description
1	TD+	Transmitter Signal Positive
2	TD-	Transmitter Signal Negative
3	RD+	Receiver Signal Positive
4	--	--
5	--	--
6	RD-	Receiver Signal Negative
7	--	--
8	--	--

Specification :

Hardware Specification

System Power	Nominal:24Vdc, Range: 9-36Vdc
	Reverse Protection: YES
Power Consumption	50mA @ 24Vdc
Current Output	Max.2.5A @ 5VDC
Isolation	System Power to Field Power Isolation
Field Power	Nominal:24Vdc, Range:22-28Vdc
Field Power Current	Max. DC 8A
IO Modules Supported	32 pcs
Wiring	Max.1.5mm ² (AWG 16)
Mounting Type	35mm DIN-Rail
Size	115*51.5*75mm
Weight	130g

Environment Specification

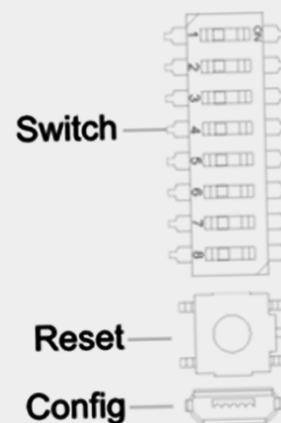
Operation Temperature	"-40~85℃
Operation Humidity	5%-95% (No Condensation)
Protection Class	IP20

Communication Interface Specification

Protocol	Modbus-TCP
Process Data	Area Sum of input and output:8192 Byte
Diagnostic Function	Supported
Number of TCP	5 Clients
TCP Keepalive	YES
Modbus Watchdog	YES (Default: Enable, 30 Seconds)
Function Code	01/02/03/04/05/06/15/16/23
Network Interface	2*RJ45
Speed	10/100Mbps, MDI/MIDX, Full-Duplex
Distance	100m
IP Address	DIP switch set or IO-Config software set

Configuration Interface :

The switch, called the DIP switch, helps set the IP address. By default, the IP address is 192.168.1.100. If the switch value is set to 0, the software configures all four parts of the IP address, or it uses the default one (192.168.1.100). If the switch value is not 0, the last part of the IP address depends on the switch value, while the first three parts can be set by the software or use the default (192.168.1). Here's how the IP address relates to the switch value:



Switch Bit Number (ON: 1, OFF: 0)								Switch Value	IP Address
1	2	3	4	5	6	7	8		
0	0	0	0	0	0	0	0	0	Configured by software
1	0	0	0	0	0	0	0	1	x.x.x.1
0	1	0	0	0	0	0	0	2	x.x.x.2
1	1	0	0	0	0	0	0	3	x.x.x.3
.
.
0	1	1	1	1	1	1	1	254	x.x.x.254
1	1	1	1	1	1	1	1	255	x.x.x.255

Notice: Following a device reset, the IP address defaults to 192.168.1.100.

RESET: To reset the module, press and hold the reset button for at least 5 seconds. This action will restore all parameters of the module to their default values. When the reset button is pressed, a green indicator will illuminate in the upper left corner of the button.

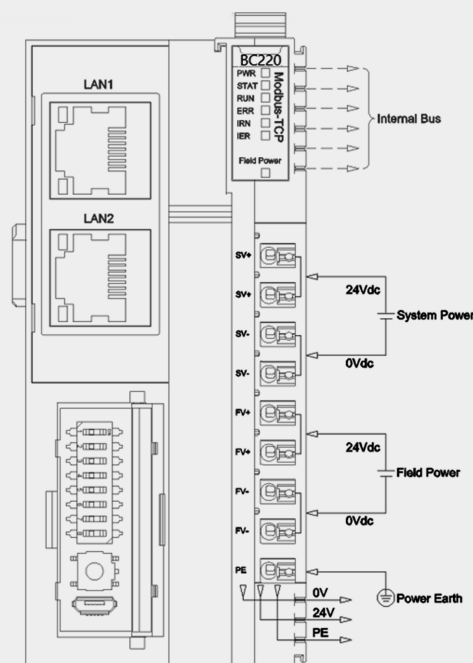
Config: The configure port is a typical Micro USB interface used for adjusting device settings and upgrading firmware.

WIRING :

Please be aware that for internal connections, two SV+ terminals, two SV- terminals, two FV+ terminals, and two FV- terminals are all linked together. However, for external connections, only one system power supply and one field power supply are required

Process data definition:

The Modbus-TCP adapter does not contain any input-output process data by itself

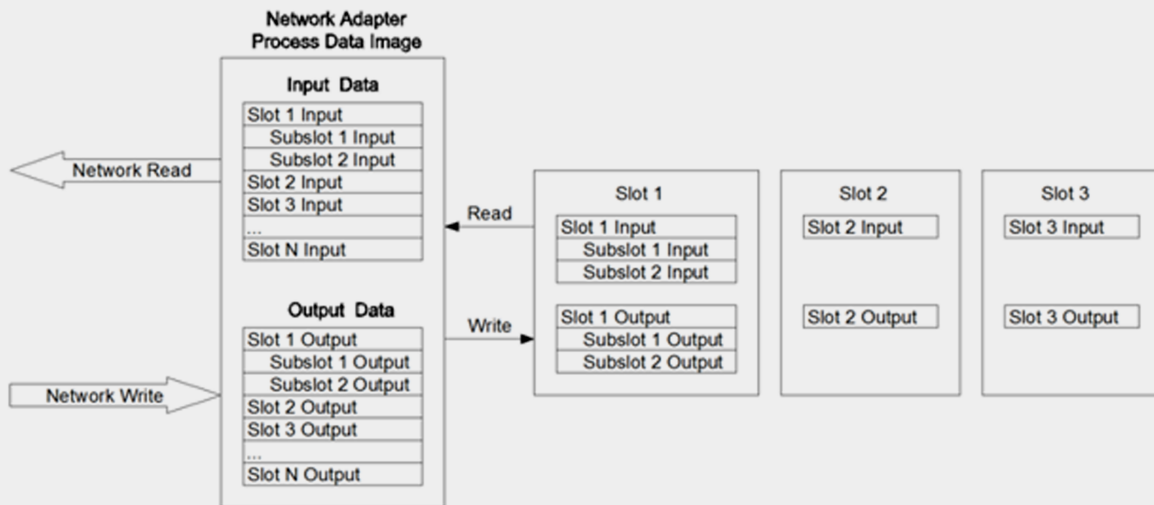




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Module process data mapping :

The network adapter reads and writes input and output process data from the IO module in real-time through the internal bus, and its data mapping model is illustrated as follows:



The Modbus address mapping table changes depending on the combination of modules, and you can access the detailed address mapping table using IO Config – the configuration software.

LED Indicator :

PWR Power State (GREEN)

ON

OFF

STAT Module State (RED/GREEN)

Double Flash (RED)

ON(GREEN)

Single Flash (GREEN)

Flash(2.5Hz) (RED/GREEN)

Flash(10Hz) (RED/GREEN)

RUN Network State (GREEN)

ON

OFF

Flash

Quadruple Flash

Flash(10Hz)

ERR Network Error (RED)

Flash(2.5Hz)

OFF

Flash(10Hz)

IRN IO Run (GREEN)

ON

OFF

IER IO Error (RED)

OFF

Double Flash

Field Power State (GREEN)

ON

OFF

Definition

System Power Normal

System Power Failure

Definition

Module Soft Restarted by Hard-Fault

Running

Stopping

Boot Mode

Firmware Updating

Definition

Modbus connected

Modbus disconnected

Modbus read-write

Led test

MAC address error

Definition

Modbus data exchanging normal

Modbus data exchanging failure

MAC Address Error

Definition

IO initialization normal

IO initialization failure

Definition

IO communication normal

IO communication failure

Definition

Field Power Normal

Field Power Failure

