AMTECH
COMMUNICATION BOX

Amtech
robotics

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Controlling the MiR robot or MiRFleet server via REST API (PUT, POST)

Communication with MiR robot via Modbus TCP (Int32, Float32, Boolean)

Five programmable inputs. Possibility to define the command for logic 1 and 0 independently.

REST API / Modbus TCP

AMTECH communication box was primarily developed to communicate with MiR robots and the MiRFleet server. It is a device that converts an electrical signal into a user-defined software communication.

MiR / MiRFleet

AMTECH COMMUNICATION BOX

Primarily developed for communication with MiR robots and MiRFleet server.
Converts electrical signal to user-defined software communication REST API or Modbus TCP.
Five programmable inputs.
Possibility to define the command for logic 1 and 0 independently.
Ethernet or WiFi interface.
Power supply 11-58 VDC.
PoE (Power over Ethernet).
Internal memory and real-time clock backup.
Robust metal box.
WEB interface - simple and quick configuration.

Device description

The Amtech communication box was primarily developed to communicate with MiR robots and the MiRFleet server. The electrical signal applied to the device input is transformed into a software command and sent to a defined IP address (another device within the computer network - MiR robot, MiRFleet, etc.).
Individual inputs have separately definable behavior for logic 1 and logic 0. One command can be sent with logic 1. Another command can be sent with logic 0.
The device has five inputs and each individual input is individually definable. The communication interface of the box is Ethernet with the possibility of wireless WiFi.

Based on the user settings, software communication via the REST API or the Modbus TCP protocol can be defined

The device sends REST API instructions via HTTP

1. In a situation where MiRFleet should be connected to a fire alarm that does not support REST API communication, the only option is to use signal communication. The AMTECH communication box is connected to output signal of the fire alarm. When a fire alarm is triggered, the fire alarm signal is transformed into a REST API instruction that is sent to the MiRFleet. When the fire alarm ends, another instruction is sent to deactivate the fire alarm on the MiRFleet server.
2. For situations where it is necessary to add a mission to the queue by pressing a button or by a signal from the machine (PLC).

Sending of address change command to PLC MiR by Modbus TCP protocol

1. Communication of top module with PLC MiR. In the mission, it is possible to communicate with the top module using the Modbus TPC protocol without the need for a PLC.
2. Communication with PLC MiR in mission.
3. Direct control of the robot (Continue robot, Pause robot, Cancel current mission, Clear mission queue, Clear error, Continue robot)

Communication via Modbus TCP is customized to the requirements of the MIR robot PLC

Int32 – Registers 1-100
Float32 – Registers 101-200
Boolean – Coils 1-6

Technical parameters

Inputs

Type	for contact
Number	5
Contact closed current	13 mA
Working voltage	24 V
Maximum sampling frequency	1 kHz
Connector	removable screw terminal block

Output

Type	changeover contact of relay
Maximum switching voltage AC	50 V
Maximum switching voltage DC	85 V
Maximum switching current	2 A
Maximum switching power of resistive load	62,5 VA / 60 W
Protective varistor	UAC = 60 V; EMAX = 5 J; C = 0,64 nF
Connector	removable screw terminal block

Ethernet interface

Connection	TBase 10/100 Ethernet
Connector	RJ45
GET encryption	128 bit AES; Rijndael; CFB method

WiFi interface

Specification	IEEE 802.11 b/g a IEEE 802.11n (single stream)
Operating frequency	2,4 GHz
Antenna connector	SMA RP

Clock circuit and internal memory

Clock backup method (RTC)	capacitor (not replaceable by the user)
RTC backup time after power outage (if the device was previously connected to a power source for at least three hours without interruption)	5 days

Device electronics

PoE power supply	according to IEEE 802.3af
Power supply from an external source	11 - 58 V DC (with reverse polarity protection)
Current consumption from ext. source at 15 V	typ. 120 mA WiFi version: 31 mA
Current consumption from ext. source at 24 V	typ. 72 mA WiFi version: 20 mA
Current consumption from PoE	typ. 32 mA
Consumption	typ. 1,8 W
Power connector	coaxial 3,8 × 1,3 mm; + is inside
Operating temperature range	-20 to +70 °C
Dimensions (without connectors)	88 × 70 × 25 mm
Housing material	anodized aluminium
Degree of protection	IP 30

Other parameters

Weight	typ. 145 g

Default settings of the Ethernet

IP address	192.168.1.254
Mask	255.255.255.0 (8 bits; mask C)
IP address of the gateway	0.0.0.0

Available designs

Mountable on 35 mm DIN rail	optional accessory

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