

MICROZED COMMUNICATION INTERFACE – MCI_HUB

FEATURES

Microcontroller based design
MODBUS RS485 communication interface to Microzed
MODBUS RS485 communication interface to Diagnostic tool
Ethernet interface
USB interface
Serial RS232S interface

DESCRIPTION

MCI_HUB is an intelligent 24V communication interface to the Microzed boards. The **MCI_HUB** is responsible for forwarding PC/SMS requests received on the remote communication interfaces – Ethernet, USB and RS232S – to the Microzed. It, then, collects and sends the response back to the requesting parties. The **MCI_HUB** can be programmed to send an SMS message whenever a fault occurs on the Microzed. This feature is available if a GSM modem is installed on the serial RS232S interface. Since the **MCI_HUB** is connected to the Microzed on the interface originally designed for the Diagnostic tool, the **MCI_HUB** contains an extra RS485 interface to connect the Diagnostic tool to bus.



OPERATION

MCI HUB supports communication with the Microzed via RS485 Modbus protocol. A cable is supplied to connect the MCI HUB to the Microzed.

After connecting the MCI HUB to the Microzed, users can communicate with the Microzed by connecting the MCI HUB to a PC through an RS232 Serial Port, USB Port, Ethernet Port or a GSM Modem. When connecting from a PC, the program **MicroZed Control** allows the users to view status information such as present floor, requested calls, inputs, outputs... It also allows users to control the elevator by changing parameters, issuing calls...

The users can also communicate with the Microzed via SMS messages, when a GSM modem is installed. To set up this feature, the user must connect the USB port and set the following parameters using the **MicroZed Control** software:

1. The Modem setting (GSM Phone Modem): This parameter must be set to **Installed** to notify the MCI HUB that a GSM modem is installed.
2. The identification of the MCI HUB module (HUB ID): This ID will be included as a header of all sent or received SMS messages. It must contain 6 digits which can be numbers (from 0 to 9) or letters (A to Z). Any message with a wrong ID will be ignored.
3. The phone number (Phone Number): When a fault occurs, The MCI HUB will send an SMS containing as a header the HUB ID followed by the board address, the fault description, the floor and the door status at the time the fault occurred. This SMS is sent to the phone number specified by the user. The phone number must be between 3 and 18 digits long.



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Following is a description of the functions supported via SMS:

| Command Description | SMS Format ¹ |
|------------------------------------|--|
| Initiate a Homing trip | HUB ##### MZn Homing ² |
| Delete Fault Log | HUB ##### MZn dlfault |
| View Lift status | HUB ##### MZm status |
| Modify the parameters ³ | HUB ##### MZn update parameter1=value1,parameter2=value2 ⁴ Example: HUB HUB001 MZ1 update A01=5,A03=0,A04=1 |
| View the parameters ⁵ | HUB ##### MZm request parameter1,parameter2,parameter3 Example: HUB HUB001 MZ1 request A01,A03,A07 |

“n” represents the board address. Multiple boards can be addressed by specifying their board addresses separated by a comma. Specifying “x” as board address means that the message will target all boards. “m” represents the board address. Only one board can be targeted by this message.

When viewing or modifying parameters through SMS, the SMS alias is used to identify the parameter being updated/requested: Thus if the user wants to update the parameters light time to 15sec and floor stopping time to 3.5sec on the MicroZed modules having board addresses 1 and 3, the SMS would then be: “HUB HUB001 MZ1,3 A01=15,A02=35” where HUB001 is the HUBID.

| SMS Alias | Parameter Description | MZ Range | SMS Parameter Range |
|-----------|-----------------------|------------------|---------------------|
| A01 | Light time | 5 to 99 sec | 5 to 99 |
| A02 | Floor stopping time | 1.0 to 9.9 sec | 10 to 99 |
| A03 | Minimum load | Disabled/enabled | 0 / 1 |
| A04 | Main landing Floor | None or 0 to 31 | 100 or 0 to 31 |
| A05 | Landing minutes | 0 to 9min | 0 to 9 |
| A06 | Landing seconds | 0 to 59sec | 0 to 59 |
| A07 | Power on homing | Disabled/Enabled | 0 / 1 |

To set up the Ethernet module, the user must connect the USB port and set the following parameters using the **MicroZed Control** software:

1. The DHCP Module (DHCP): If the network to which the MCI HUB is being connected distributes IP addresses automatically, then the DHCP Module on the MCI HUB must be enabled (**DHCP** set to **Enabled**). If a fixed IP should be assigned to the MCI HUB, then **DHCP** should be set to **Disabled**.
2. Network Configuration (IP Address, Mask, Gateway): If **DHCP** is set to **Disabled**, the user must specify to the MCI HUB: the IP Address (**IP Address**), the Subnet Mask (**Mask**) and the Default Gateway (**Gateway**).
3. The identification of the MCI HUB module (HUB ID): the **HUB ID** is used by the Ethernet module as a Net BIOS Name (NBNS).

¹ SMS letters are not case sensitive.

² ##### being the **HUB ID**.

³ Only 5 parameters can be modified in one SMS.

⁴ Parameter1, Parameter2 can take any value between A01 and A07. Value1, Value2 can take any value within the parameter’s value range.

⁵ Only 5 parameters can be viewed in one SMS.