

techfass

# **MRMC 82**

Relay control module for RM-4, RM-8

# Introduction

3The MPMC 82 module is intended for controlling the output relays of RM-4 or RM-8 modules in the APS mini Plus system. It exists as a variant on a DIN rail or in a flush-mounted installation box KU 68, or surface LK 80. The relevant output is controlled by a valid authorization, either by identification medium (e.g. card, key fob) or direct control from the WebHit web application or from the desktop applications APS Hit, APS Administrator.

## a. Application

- Post boxes
- Cabinets, boxes
- Controlled electrical plug
- Lift control
- Home & Building Automation

## b. Parameters

- Input voltage 8 ÷ 28 Vdc
- Typical current consumption 53 mA @ 12 V
- Maximum input power 1,1 W
- 1x RS 485 (system bus APS mini Plus)
- 1x RS 485 (relay modules control)
- 1x Wiegand (the possibility to connect external reader)
- DIN rail mounting, recessed installation box KU 68 or surface mounted LK 80.

## c. Variants

KATALOGUE NUMBER	PART NUMBER	SYSTEM	VARIANT
53482100	MRMC 82 DISGRT	APS mini Plus	DIN rail
53482110	MRMC 82 EISGRT	APS mini Plus	KU 68-1901
53482120	MRMC 82 FISGRT	APS mini Plus	LK 80

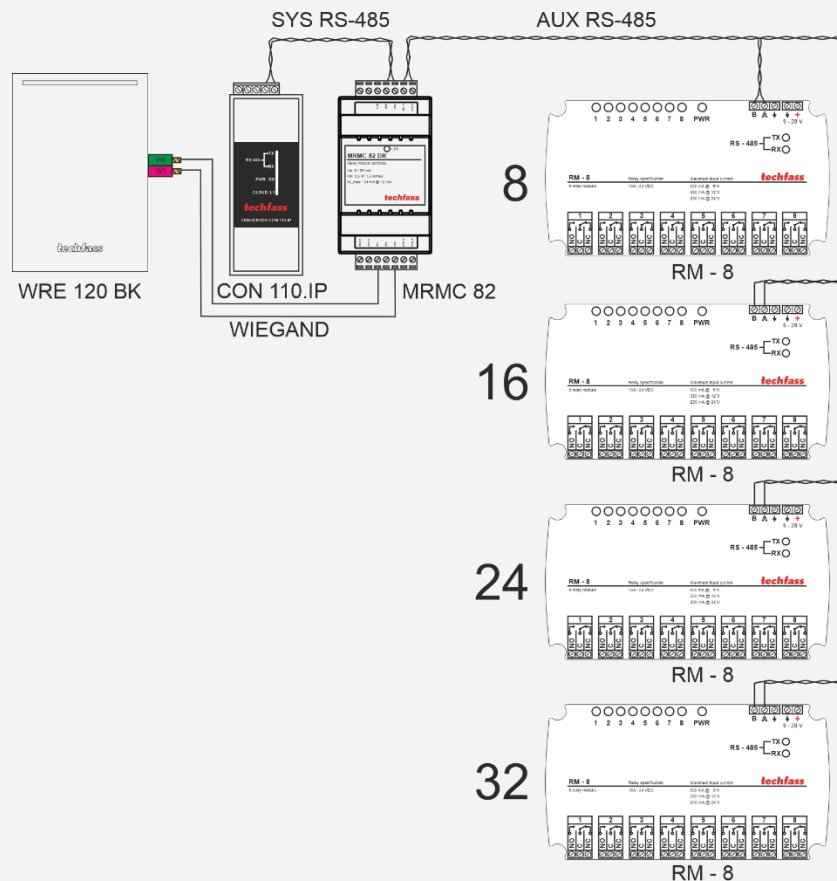
## d. Marking

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
M	R	M	C		8	2			D	I	S	G	R	T
System		Product type		HW type		Mechanics		Environment		Design		Colour		Connection
M: APS mini Plus		RMC: Relay module controller				D: DIN rail		I: Indoor		Standard		GR: Gray		T: Terminals
N: APS 400						E: KU68-1901		range T: -10 ÷ +55°C						
						F: LK 80								

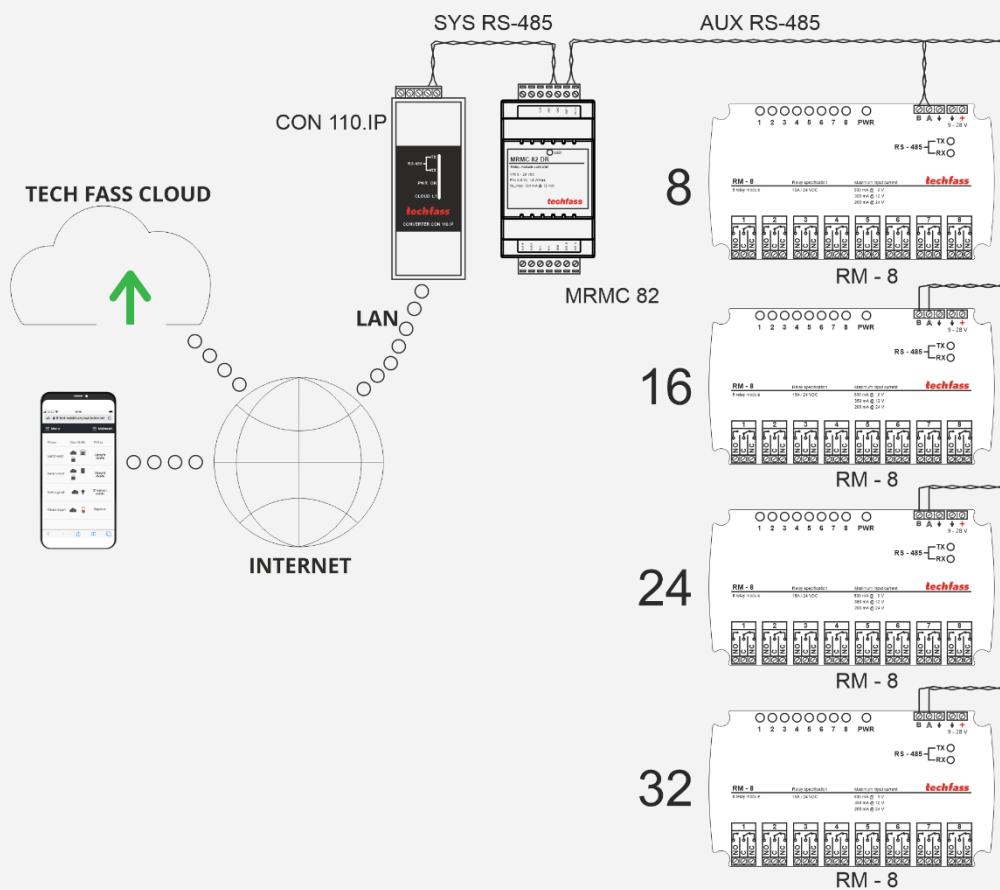


## e. Wiring

Control of outputs using RFID cards



- Control of outputs via mobile phone from the cloud, WebHit application



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# 1 Technical parameters

## 1.1 Electrical parameters

PARAMETR	CONDITION	MIN	MAX	UNIT
Input voltage Vin		8	28	V
Typical consumption I <sub>in</sub>	V <sub>in</sub> = 8 V V <sub>in</sub> = 12 V V <sub>in</sub> = 24 V		75 53 30	mA mA mA
Peak current consumption I <sub>in</sub>	V <sub>in</sub> = 8 V V <sub>in</sub> = 12 V V <sub>in</sub> = 24 V		106 73 42	mA mA mA
Typical input power			0,7	W
Maximum input power			1,1	W
RTC	Backup	24		h
Memory	ID media Events Time plans		2000 3400 64	pc
Signalization	RGB led Piezo		1 1	pc

## 1.2 Communication interface

INTERFACE DESCRIPTION	TECHNOLOGY	PROPERTIES
System data bus	RS 485	19 200 bit / s, 8 data bits, even parity, 1 stop bit
Auxiliary data bus (AUX)	RS 485	
Wiegand	Wiegand	Formats 26, 32, 34, 37, 44, 46, 56 bits, custom

## 1.3 Mechanical parameters

INTERFACE DESCRIPTION	VALUE	UNIT
Weight	120	g
Dimensions X x Y x Z	53 x 90 x 71	mm
Mechanical mounting	DIN rail Installation recessed box KU68-1901 Installation surface box LK 80	
Colour	Grey	
Material	Plastic	ABS
Environmental class	Indoor device general	
Temperature range	-10 ÷ + 55	°C

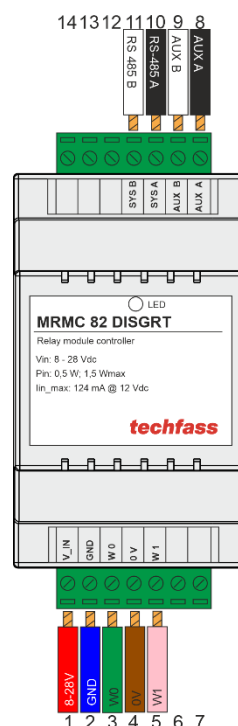
# 2 Assembly

## 2.1 Connection of the terminals MPMC 82 DISGRT

The device has 12 poles of detachable screw terminal block.

### MPMC 82 DISGRT

NUMBER	TERMINAL DESCRIPTION	WHERE IT LEADS
1	Input voltage Vin 8 ÷ 28 Vdc	Power supply
2	Power ground GND	Power supply
3	Wiegand input 0	WRE 120 BK
4	Signal ground 0 V	APS / RM-4, RM-8
5	Wiegand input 1	WRE 120 BK
6, 7	Do not connect	
8	Signal A auxiliary data bus	RM-4 / RM-8
9	Signal B auxiliary data bus	RM-4 / RM-8
10	Signal A system data bus	device APS mini Plus
11	Signal B system data bus	device APS mini Plus
12 – 14	Free terminals for any usage	

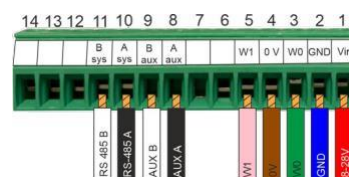


## 2.2 Connection of the terminals MPMC 82 E / F ISGRT

As an alternative mechanical design, it is possible to use the MPMC in installation boxes KU68-1901 or LK 80. In this case, a 14-pin detachable terminal block is located on the pcb of MPMC 82.

### MPMC 82 E / F ISGRT

NUMBER	TERMINAL DESCRIPTION	WHERE IT LEADS
1	Input voltage Vin 8 ÷ 28 Vdc	Power supply
2	Power ground GND	Power supply
3	Wiegand input data W0	WRE 120 BK
4	Signal ground 0 V	APS / RM-4, RM-8
5	Wiegand input data W1	WRE 120 BK
6, 7	Do not connect	
8	Signal A auxiliary data bus	RM-4 / RM-8
9	Signal B auxiliary data bus	RM-4 / RM-8
10	Signal A system data bus	device APS mini Plus
11	Signal B system data bus	device APS mini Plus
12 – 14	Do not connect	



## 2.3 Installation instructions

### 2.3.1 Module installation

Place the MRMC 82 D module on a DIN rail using a flexible lock, then connect the plug-in counterparts of the terminal blocks with screwed cables. When installing the MRMC 82 E module, first install the KU 68-1901 installation box under the wall with the appropriate cable. Shorten the cable so that it is able to snap the detachable terminal block, and at the same time the coiled cabling have to fits into the designated space in the installation box. The module is fixed in the installation box with one screw.

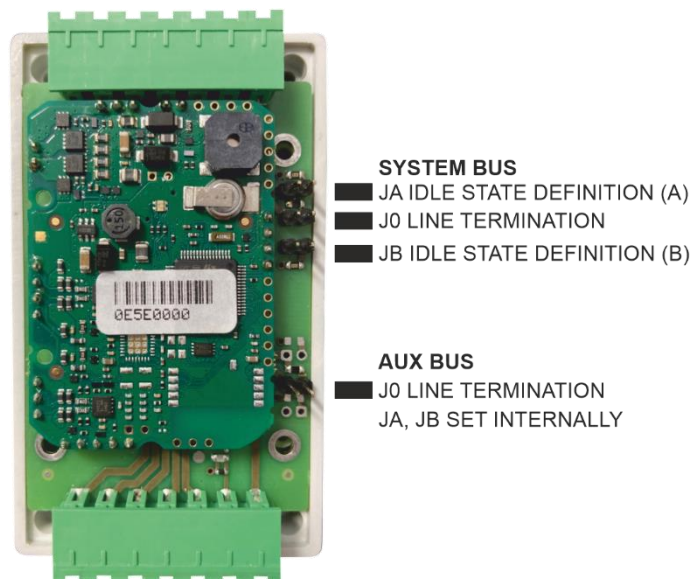
### 2.3.2 RS 485 bus termination

If the RS 485 system or auxiliary bus is long enough that a reflection on the line could occur, it is advisable to terminate it. This can be done by jumpers J0, which connects an already assembled termination resistor. For the DIN rail version, it is necessary to unscrew the 4 screws and open the plastic cover. By default, the termination resistor of both the system and auxiliary buses is disconnected.

### 2.3.3 RS 485 idle states

With the MRMC 82 D version (din rail) it is also possible to set idle states (connect a pull-up and pull-down resistor) to the system bus. This can be done by jumpers JA, JB. It is necessary to unscrew the 4 screws and open the plastic cover. By default, idle states are disconnected.

The auxiliary system bus has the idle states already on board connected (master), other devices on the AUX line shouldn't have the idle states connected.



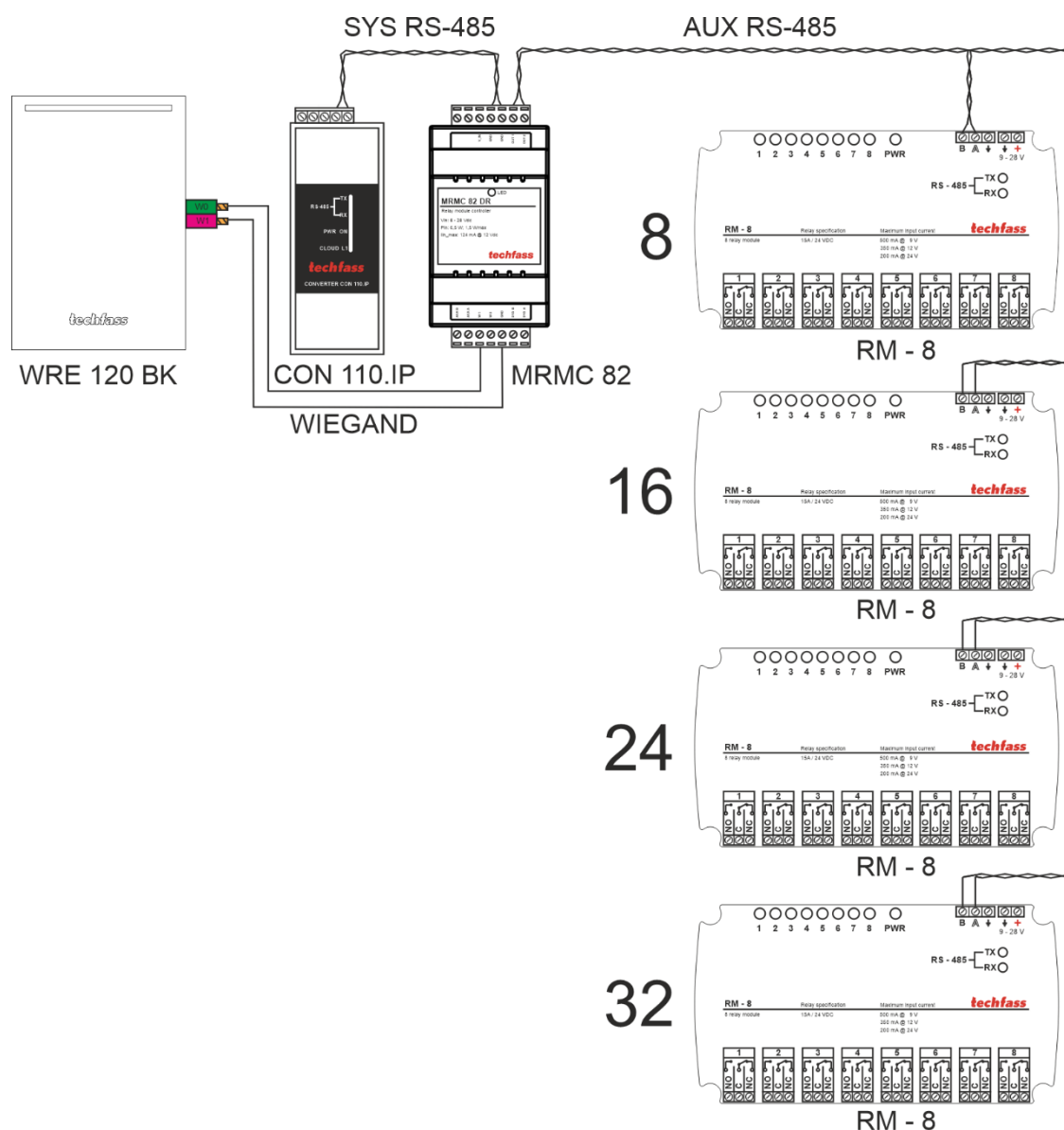
*Terminaiton, idle states.*

# 3 Wiring diagram

## 3.1 Output relay control via ID media

The examples of the application of this connection are post boxes, boxes for goods, calling the elevators, etc.

After reading a valid card or other media with an external WRE 120 BK reader, this ID is evaluated in the MRMC 82 controller and the RM-8 relay module switches the corresponding relay output. The relay output can be configured by default, ie it either switches on for a certain time (lock control) or changes the state (light control), or it can switch on according to a time schedule.

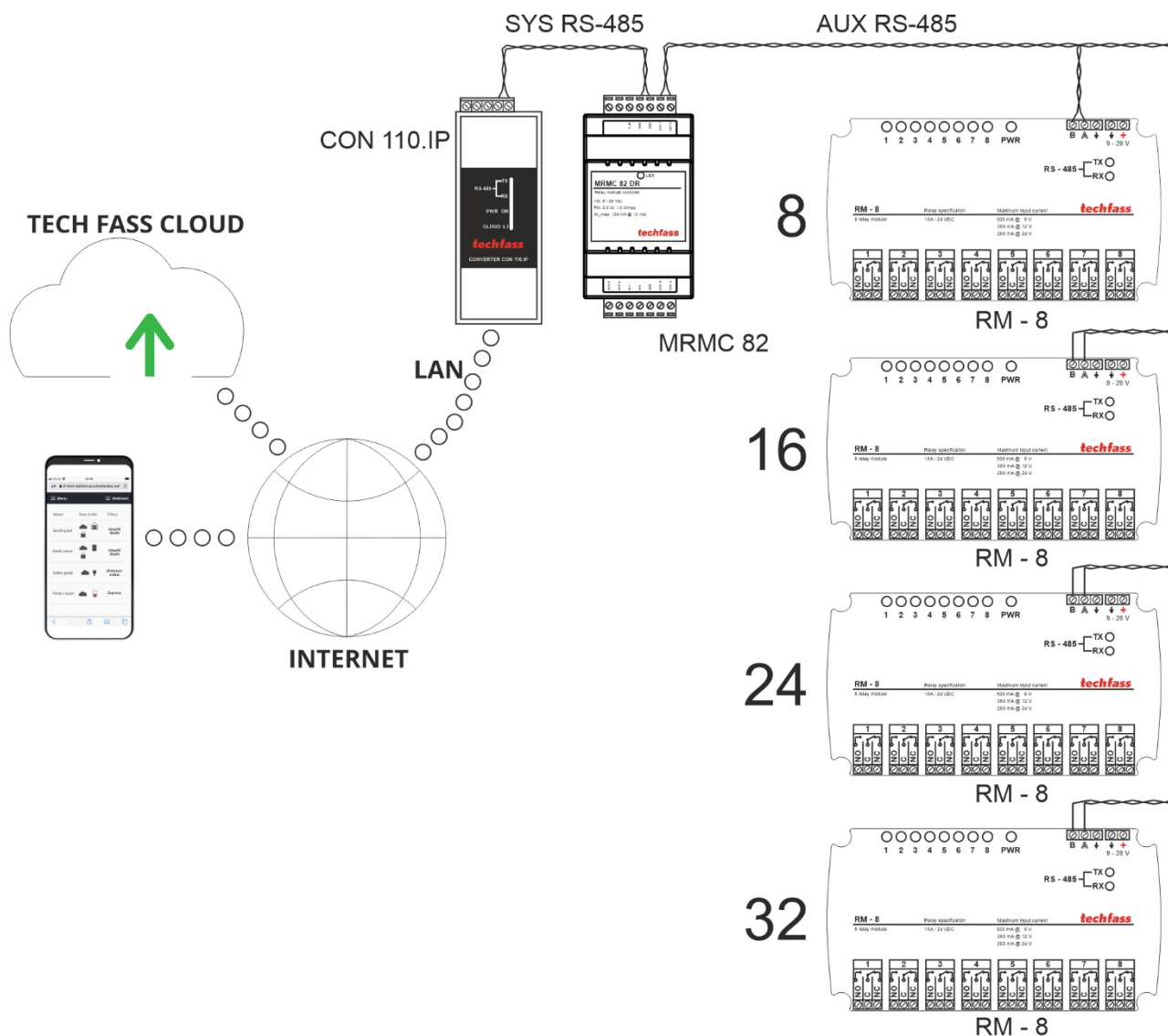


**Wiring diagram 1:** Wiring control of up to 32 post boxes using four RM-8 relay modules and one MRMC 82 D module. If multiple outputs are required, a parallel line must be made with APSLAN / CON110.IP. The RM-8 relay modules are connected to the RS 485 auxiliary data bus and the MRMC is part of the RS 485 system data bus. The MRMC 82 D is equipped with a Wiegand input and can therefore be connected to WRE 120 BK reader.



## 3.2 Control of relay outputs from mobile phone via web application

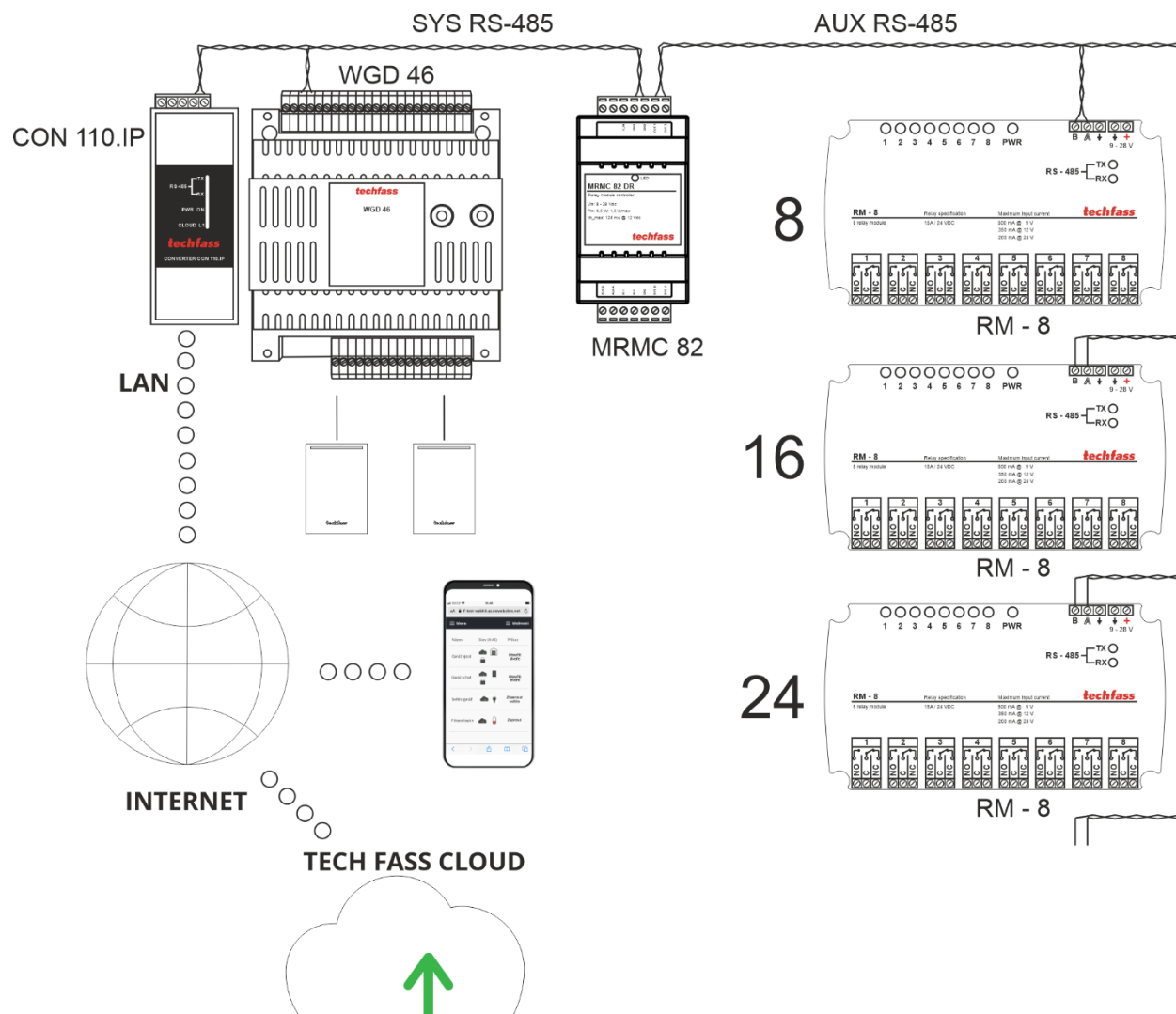
In addition to the ID media, the outputs can also be controlled directly from the WebHit web application, where the installation manager sets the right to control the respective outputs for each user, and only the user sees them in the application.



**Wiring diagram 2:** Wiring diagram of the relay output control by using WebHit web application. This control can, of course, be part of the entire APS mini Plus system, where users can see all their respective doors and the systems they can control.

*Note:* Of course, the outputs can also be controlled from the APS Hit or APS Administrator desktop applications.

### 3.3 Common connection of output relays, MWGD 46 and 2x WRE 120



**Wiring diagram 3:** Standard elements such as MWGD 46 can also be connected to the APS mini Plus system bus next to MRMC 82 controller. Attention must be paid to the total number of hw addresses behind CON 110.IP / APSLAN, ie a total of 32 addresses, where the MRMC 82 module itself does not count (only the relay outputs plus standard door controllers, reader modules).

# 4 Settings

## 4.1 Setup procedure

It is necessary to set the HW addresses correctly for each MPMC 82 module. If one RM-8 module is connected to the MPMC 82, it is necessary to set - reserve 8 hw addresses in a row. Thus, if we assign MPMC hw address 1, it is necessary to set the number of addresses 8 on the "Advanced" tab "The operating mode is" standard (with WIO module) ".

\*The function can be set similarly in APS Reader program as well.

## 4.2 Konfigurovatelné parametry

PARAMETER	SETTINGS OPTION	FACTORY SETTINGS
Max. output switching time*	0 ÷ 255 s	5 s
Acoustic signaling of output switching	YES / NO	YES
Type of output control	Direct / Reverse	Direct
Output mode	Standard / Change of state	Standard
Permanent turn on of the output according to the schedule	Never / Time schedule	Never
Yellow LED output status indication	YES / NO	NO
Automatic clock transition to CET and back	YES / NO	YES
Max. online authorization response time	0 ÷ 25500 ms	800 ms
Authorize autonomously after exceeding the response time	YES / NO	YES
Writing an event to the module archive The door is open Door closed Output closed Output open	Disabled / Enabled Disabled / Enabled Disabled / Enabled Disabled / Enabled	Enabled Enabled Enabled Enabled

\* Only for standard mode, in switching mode the output switches permanently.

# 5 Operating mode

## 5.1 Operating modes

The module can be in online or offline operating mode. The function is identical in both modes, with the difference that in the online mode, the module statuses are reported via the communication line (after changing the mode from offline to online, the event archive is read from the module's memory). In both operating modes, the module can switch to programming mode (after loading the programming card).

## 5.2 Meaning of the indicator LED

COLOUR	AKTION	DESCRIPTION
Red	steady light Flashing with a period of 4 s	Online communication of the RS 485 system bus Offline operation
Green	Flash	Load wiegand signal from external reader
Alternation Red / green		Address setting mode RS 485 system bus test
Yellow	Yellow Steady light, flashing	Programming mode

## 5.3 ID expiration function

It is possible to set a date for each ID at which the ID expires and will no longer be valid. The expiration is evaluated every time the data in the RTC module changes and when new access rights are loaded.

! Note: This feature is currently only available on desktop applications.

## 5.4 Online authorization

There is an option of Online authorization of access in TECHFASS systems. In such a use, the connected PC decides on the validity of the read ID authorization. The reader must be MLO licensed to use it in this authorization mode.

! Note: This feature is currently only available on desktop applications.


# 6 Other

## 6.1 Legislation

The product complies with the relevant harmonization legislation of the European Union.

EUROPEAN HARMONIZATION RULES, STANDARDS, REGULATIONS
2014/30/EU; "EMCD"
2014/35/EU; "LVD"; ČSN EN 62368 – 1
2011/65/EU "RoHS"
(ES) č. 1907/2006 "REACH"

## 6.2 Declaration of conformity

 Manufacturer TECH FASS s.r.o. declares that the product complies with the legal requirements and meets the relevant European directives, see the legislation section. The original declaration of conformity is available on our website:

<https://www.techfass.com/en/download/11/conformity-declaration>

## 6.3 Electronic waste



According to the WEEE Directive (2012/19 / EU), this device must not be disposed of with municipal waste at the end of its working life. The device belongs to the collection of electronic waste, where it will be disposed of ecologically - recycled. Also make sure that the packaging material is disposed of in accordance with applicable legislation.



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**TECH FASS s.r.o.**

Vestinska 1611/19, Prague