

NRIF 232-GP

Network Interface for connecting a GP8, GP20, GP30, GP60 or GP90 reader

User's guide



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1 Content

1	Content.....	2
2	Product description	3
3	Technical parameters	3
3.1	Product version.....	3
3.2	Technical features.....	3
3.3	Mechanical design	4
3.4	Special accessories	4
3.5	Using WIO 22 module for remote output control.....	4
4	Installation	5
4.1	Terminals and jumpers.....	5
4.2	Standard connection (recommended, not obligatory) ²⁾	6
4.3	LED Indicators	6
5	Setting parameters of the reader module.....	6
5.1	Configurable parameters.....	6
5.1	Reader module parameters setting	6
5.2	HW address setting.....	7
6	Reader module functioning	7
6.1	Operating modes	7
6.2	Emergency “Door Open” function description.....	8
6.3	Read ID media format.....	8
6.4	Wiegand output.....	8

2 Product description

The **NRIF 232-GP** ¹⁾ module is a network interface for connecting a **GP8**, **GP20**, **GP30**, **GP60** or **GP90** reader using its **RS 232** interface to the **APS 400** system.

A module is designed for connection to the **APS BUS** of the APS 400 identification system, where it occupies a single address. Up to 64 NRIF 232-GP modules can be connected to a single MCA 168 controller. The modules can be combined with other modules at a single communication line.



Pic. 1: NRIF 232-GP

¹⁾ Commercial designation of available versions is described in *table 1*.

3 Technical parameters

3.1 Product version

Version	Product designation	Catalogue number	Attachable devices
	NRIF 232-GP	54412600	GP8, GP20, GP30, GP60 or GP90 reader

Table 1: Product version

3.2 Technical features

Technical features	Supply voltage		8 ÷ 15 VDC
	Current demand	Typical	70 mA
		Maximal	130 mA
	Max. length of reader's wire		10 m
	IDs memory		750 ID, (for emergency function)
	Inputs		2x logical potential-free contact
	Outputs		2x relay NC/NO, 2A/24V
	Indicators		3x LED 1x terminals for external beeper
	Tamper protection		Integrated NC contact
	Communication interface		1x RS 485 – APS BUS 1x RS 232 – connected reader interface
	Alternative data output		WIEGAND (configurable)

Table 2: Technical features

3.3 Mechanical design

Design	Weight	0,202 kg
	Operating temperature	-25°C ÷ +60°C
	Humidity	Max. 95%, non-condensing
	Housing	IP 65
	Dimensions	65x164x55 mm

Table 3: Mechanical design

3.4 Special accessories

Accessories	WIO 22	51901200	Remote control module, 2x relay
			

Table 4: Special accessories

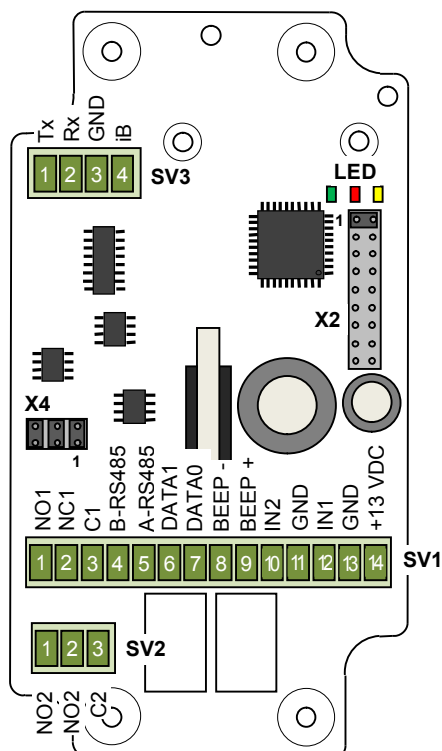
3.5 Using WIO 22 module for remote output control

The **WIO 22** remote control **WIEGAND** relay module is designated for secure output control of APS system reader modules. The door open or other functions can be controlled from the module located inside the secure area, while the reader module can be located in the non-secure area.

The module is controlled by **WIEGAND** signal directly from the reader module working in standard operating mode. The module must be paired with appropriate reader module before use.

4 Installation

4.1 Terminals and jumpers



Pic. 2 Terminals and jumpers

Jumpers X2	X2.1 ÷ 6	HW address (A0 ÷ A5)
	X2.7	Reserved
	X2.8, 9	Reserved

Table 5: Address jumpers X2

Terminal SV3	1	Tx – line RS 232
	2	Rx – line RS 232
	3	GND – 0 V
	4	iB – reserved

Table 6: Terminal block SV3

RS 485 X4	X4.1	Idle state definition (B)
	X4.2	Idle state definition (A)
	X4.3	Line terminator

Table 7: Setting the RS 485 line X4

Terminal block SV1	1	Relay1 NO
	2	Relay1 NC
	3	Relay1 C
	4	B - RS 485
	5	A - RS 485
	6	Wiegand DATA 1
	7	Wiegand DATA 0
	8	Beeper -
	9	Beeper +5 V
	10	Input 2
	11	0 V
	12	Input 1
	13	Supply voltage 0V
	14	Supply voltage +13,8 V

Table 8: Terminal block SV1

Relay2 SV2	1	Relay2 NO
	2	Relay2 NC
	3	Relay2 C

Table 9: Terminal block SV2

4.2 Standard connection (recommended, not obligatory) ²⁾

Std. connection	Input 1	Door contact, active when door closed
	Input 2	Request to exit button or handle contact, active when button or handle pressed
	Output 1	Door lock control (relay1)
	Output 2	AUX functions (relay2) + yellow LED

Table 10: Standard connection

4.3 LED Indicators

LED indicators	Red	Continuously lit	Online operating mode via RS 485
		Blinking with 2s period	Offline mode, emergency function enabled
		Short flashing with 1 s period	Offline mode, emergency function disabled
	Green	ID media reading	
	Yellow	Controlled by the controller's program ²⁾ , copies 2nd output status (AuxOutput)	

²⁾ The function of inputs and outputs is defined by user's programming of the controller.

The indicating LEDs are situated directly on the PCB, so they can be seen when the cover is open only.

5 Setting parameters of the reader module

5.1 Configurable parameters

Parameters	Parameter	Possible range	Default setting
	Enabling of emergency function	YES / NO	NO
	Address on a communication line	1 ÷ 64	1
	Internal reader configuration	Configurable	Standard
	Operating mode	Standard/Wiegand OUT	Standard
All parameters are given by programming through the MCA 168 control module, see http://www.techfass.cz/files/aps_400_config_en.pdf			

Table 12: Configurable parameters

5.1 Reader module parameters setting

Setting of all parameters of the reader module can be done only when the module is connected to the system bus of MCA 168 controller. Detailed instructions for setting reader module parameters are described in the **APS 400 Network Reader** configuration program user's guide available at: http://www.techfass.cz/files/m_aps_400_network_reader_en.pdf.

5.2 HW address setting

HW address setting is defined by the configuration of address jumpers X2.1 ÷ 6, see *Tab. 5 and 13*.

Address jumpers X2	Address	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Table 13: Address jumpers X2 Legend: ● ... set (ON) ○ ... removed (OFF)
	X2.1	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	
	X2.2	○	●	●	○	○	●	●	○	○	●	●	○	○	●	●	○	
	X2.3	○	○	○	●	●	●	●	○	○	○	○	●	●	●	●	○	
	X2.4	○	○	○	○	○	○	○	●	●	●	●	●	●	●	●	○	
	X2.5	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	●	
	X2.6	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	Address	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
	X2.1	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	
	X2.2	○	●	●	○	○	●	●	○	○	●	●	○	○	●	●	○	
	X2.3	○	○	○	●	●	●	●	○	○	○	○	●	●	●	●	○	
	X2.4	○	○	○	○	○	○	○	●	●	●	●	●	●	●	●	○	
	X2.5	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	
	X2.6	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	●	
	Address	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	
	X2.1	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	
	X2.2	○	●	●	○	○	●	●	○	○	●	●	○	○	●	●	○	
	X2.3	○	○	○	●	●	●	●	○	○	○	○	●	●	●	●	○	
	X2.4	○	○	○	○	○	○	○	●	●	●	●	●	●	●	●	○	
	X2.5	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	●	
	X2.6	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	Address	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	
	X2.1	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	
	X2.2	○	●	●	○	○	●	●	○	○	●	●	○	○	●	●	○	
	X2.3	○	○	○	●	●	●	●	○	○	○	○	●	●	●	●	○	
	X2.4	○	○	○	○	○	○	○	●	●	●	●	●	●	●	●	○	
	X2.5	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	
	X2.6	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	

Reader module's reset is required after any change of address setting, disconnect and connect the supply voltage again.

6 Reader module functioning

6.1 Operating modes

The *NRIF 232-GP* reader modules are intended for online operating mode on APS 400 system BUS (*APS BUS*). The activity of the modules is defined by the system controller; so the modules are able to provide various functions not only controlling of the door.

In case of the communication line fails the modules can work in offline mode (when the **emergency function** is enabled) - it concerns the exit readers mostly. The “Door Open” function for last 750 valid cards registered before can be performed in this mode only.

6.2 Emergency “Door Open” function description

When the “Door Open” function is activated, the door lock is released and the beeper activated until the door is open or 5 s preset door lock release time has elapsed.

All events triggered while the offline mode is in progress are saved neither in the controller nor in the reader memory.

6.3 Read ID media format

The ID media format can be changed into selected 24, 32 or 40 bits length of ID code. The default length is 40 bits. This setting is only changed when unifying of the ID media codes length is required – in combined systems with WIEGAND output readers with a fixed WIEGAND data format IDs (more information in **APS 400 Network Reader** user’s guide available at http://www.techfass.cz/files/m_aps_400_network_reader_en.pdf).

6.4 Wiegand output

The module can be configured into a standard reader with a **WIEGAND output** in 26, 32, 42 or 44 bits format for **EM Marin** technology ID media. Read IDs are formatted with the previous internal reader configuration first, after that they are sent in the output format.

Two long beeps and the red LED lit feature powering up the module. The green LED blink indicates an ID reading.

Individual signals function in **WIEGAND output** operating mode is described in *table 14*.

Wiegand	Input 1	Beeper control (0 V active)
	Input 2	Yellow LED control (0 V active)
	Output 1 (relay)	Tamper signaling; it follows the alarm state of tamper sensors (tamper signal = relay switched on) ³⁾

Table 14: Signal function in WIEGAND operating mode