

## Readers – Direct and Wiegand



Contactless card readers are used for reading means of identification (cards, pendants, bracelets, etc.) and entering numerical codes in complex access control systems.

All Jantar readers are resistant to moisture and suitable for outdoor mounting. In special cases they can be additionally protected against vandalism by a metal cover (Type N).

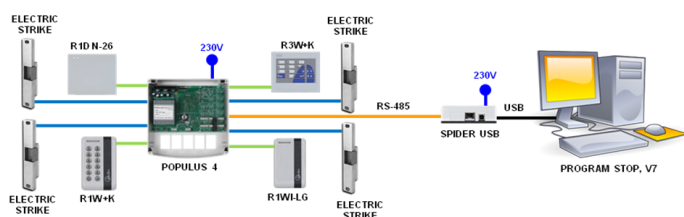
The access controller provides a power supply for the readers or RF receivers. The readers or RF receivers are connected to an access controller with a UTP or FTP cable (the maximum distance between the attached controller and the reader must not exceed 25 cable metres). The Populus access controller is sufficiently strong to power one or more electric strikes.

We can define usability of reader from its code:

<b>R1W M-26B</b>	Reader of C1 proximity cards and proximity key fobs, module (M casing), connecting cables from the rear, reading frequency 125kHz, Wiegand 26 bit protocol, reading distance 6cm, external power supply
<b>R1D N-X</b>	Reader of C1 proximity cards and proximity key fobs with direct binary output, N casing, reading frequency 125kHz, 64 bit, reading distance 10cm, external power supply
<b>R1W N-26</b>	Reader of C1 proximity cards and proximity key fobs, N casing, reading frequency 125kHz, Wiegand 26 bit protocol, reading distance 10cm, external power supply
<b>R1W I-26</b>	Reader of C1 proximity cards and proximity key fobs, light grey casing I, reading frequency 125kHz, Wiegand 26 bit protocol, reading distance 6cm, external power supply
<b>R1W+K I-72</b>	Reader of C1 proximity cards and proximity key fobs, light grey casing I with dark gray keys, 2x6 keypad, reading frequency 125kHz, Wiegand 72 bit protocol, reading distance 6 cm, external power supply
<b>R1W H-26</b>	Reader of C1 proximity cards and proximity key fobs, with medium range, reading frequency 125kHz, Wiegand 26 bit protocol, reading distance with C1C cards up to 60cm, with C1H cards up to 100cm, external power supply
<b>R3W N-26</b>	Reader of C3 proximity cards, reading frequency 13,56MHz, N casing, Wiegand 26 bit protocol, reading distance 5cm, external power supply
<b>R3W+K N-26</b>	Reader of C3 proximity cards, N casing with 4x4 foil keypad, reading frequency 13,56MHz, Wiegand 26 bit protocol, reading distance 5cm, external power supply
<b>R4W N-26</b>	Reader for C4x transmitters with Wiegand output, receiving frequency 433MHz, N casing with antenna, Wiegand 26 bit protocol, receiving distance up to 30m, external power supply

Example of use:

- R1 and R3 readers with Populus 4 access controller



### Reading distance

The reading distance depends on the location of the reader. The reader must not be installed directly onto a metal surface – the presence of metal or EM interruptions significantly reduce the reading distance of the R1 and R3 readers.

It is recommended that readers be installed no closer than 30cm from each other in any direction (this also applies to the time and attendance controllers with a built-in reader).

The reading distance of the R4 receiver is up to 30m; however, it also depends on EM interruptions from the surroundings as well as on obstacles present between the transmitter and the receiver.

If using, for example, two R4 receivers (one for entry, another for exit), you must ensure that the receivers are positioned far enough from each other, so they do not both receive the same signal from the remote key at once.

**DO NOT** (a) install any Jantar readers or RF receivers directly on metal surfaces or (b) cover them with a metal cover!

Reading distance	Type N	Type I	Type M
<b>R1D</b>	10cm	8cm	
<b>R1W</b>	10cm	6cm	6cm
<b>R1W+K</b>		6cm	
<b>R3W</b>	5cm		
<b>R3W+K</b>	5cm		
<b>R4W</b>	Up to 30m		

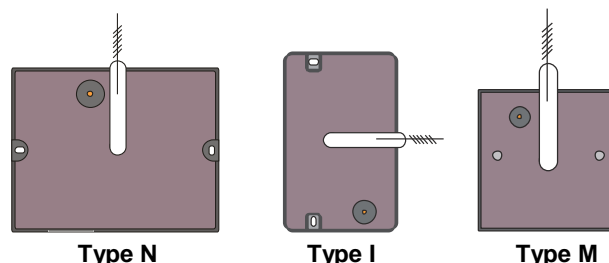
### TECHNICAL DATA

Specifications	
<b>Power consumption</b>	2W
<b>Operating temperature</b>	From -20°C to 50°C
<b>Humidity</b>	10-80%, non condensing
<b>Cable length</b>	3m

### USE OF READERS

Tip	Use
<b>N</b>	Standard casing
<b>I</b>	Narrow, upright casing, e.g. door frames
<b>M</b>	Module of small dimensions for installation onto other devices

### REAR VIEW OF READERS



### DIMENSIONS OF CASING

	Type N	Type I	Type M
<b>Dimensions</b>	105x89x20mm	95x60x19mm	60x60x8mm
<b>The distance between the attachment screws</b>	93mm	83mm	45mm

## Readers – Contactless card readers

### CONNECTING CABLES

The table applies to R1 (N, I, M casing) and R3 (N casing) readers.

Description	Specifications	Wire	Input / Output
14V DC	Max. 0.1A	Red	Power supply
GND	Ground	Black	Power supply
W bit 0, D sig	Active = GND	Green	O
W bit 1, D nc	Active = GND	White	O
Buzzer input	Active = GND	Yellow	I
LED input	Active = GND	Orange	I

### LED COLORS

Type N	Signal
R1D	Yellow (locked) / Green (unlocked)
R1W	Red (locked) / Green (unlocked)
R1W+K	Red (locked) / Green (unlocked)
R3W	Red (locked) / Green (unlocked)
R3W+K	Red (locked) / Green (unlocked)
R4W	Red (locked) / Green (unlocked)

Type I	Signal
R1W	Red (locked) / Green (unlocked)
R1W+K	Red (locked) / Green (unlocked)

Type M	Signal
R1W	Red (locked) / Green (unlocked)

### PROTOCOLS

#### Direct:

The reader has no central processing unit. The signal is decoded by the controller.

#### Wiegand:

26-bit protocol: Data are coded in accordance with the standard. The pulse width is 80 microseconds. The width between two pulses is 1 microsecond.

72-bit protocol: The pulse width is 80 or 300 microseconds. The width between two pulses is 400 microseconds.

### ORDERING CODES

Product	Protocol	Frequency
R1D	N-X	Direct
R1W	[N, I, M, H]-26	Wiegand 26
R1W+K	I-72	Wiegand 72
R3W	N-26	Wiegand 26
R3W+K	N-72	Wiegand 72
R4W	N-26	Wiegand 26

Please read through our warranty and disclaimer statements.

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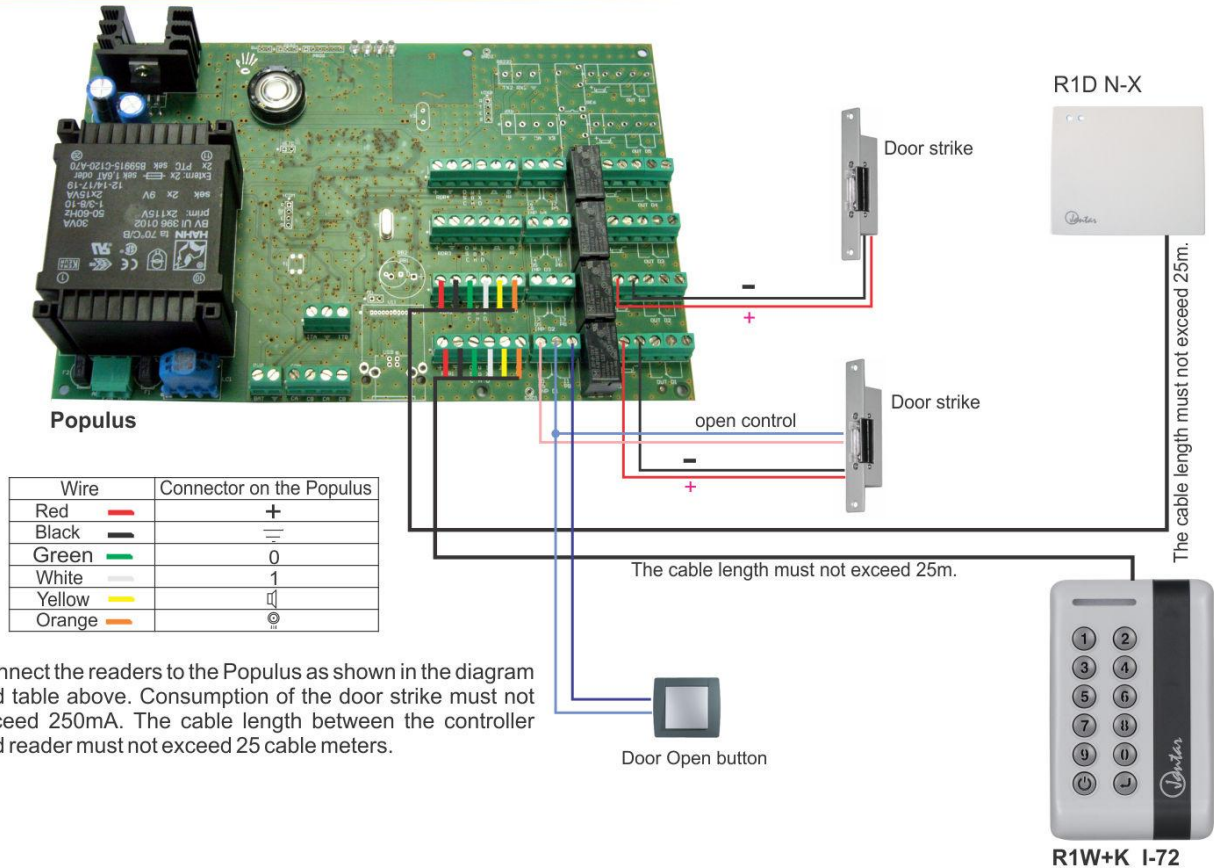
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### WIRING DIAGRAM

#### Wiring diagram:

R1D N-X, R1W I-26, R1W+K I-72, R1W N-26

All readers have the same wire colors and connect in the same way!



Connect the readers to the Populus as shown in the diagram and table above. Consumption of the door strike must not exceed 250mA. The cable length between the controller and reader must not exceed 25 cable meters.