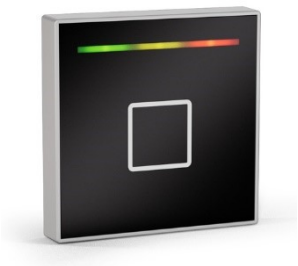
Family datasheet VOXIO reader module

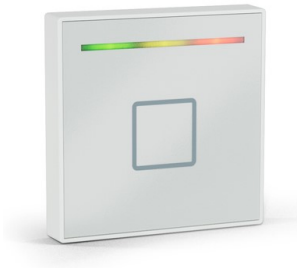
VOXIO-C

Black – with keypad
flush mounted / surface mounted

White – with keypad
flush mounted / surface mounted



Black – without keypad
flush mounted / surface mounted



White – without keypad
flush mounted / surface mounted

- customized modifications (e.g. customized logo) possible -

Product designation

Variant	RFID technology
VOXIO-C-1200-A VOXIO-C-1240-A	Multi-ISO reader (Basis LEGIC® 4200M) ▪ LEGIC® prime / advant ▪ Mifare classic / DESfire / EV1 / EV2 ▪ ISO 14443 A+B / ISO 15693
VOXIO-C-2000-A VOXIO-C-2040-A	125 kHz
VOXIO-C-3100-A VOXIO-C-3140-A	Mifare classic / Mifare DESfire / EV1 / EV2

Interfaces

- RS 485 (A,B) (not electrically isolated) or
- Magstripe Clock/Data
  (only VOXIO-C-xx**00**-A) or
- Wiegand D0/D1
  (only VOXIO-C-xx**00**-A) or
- I²C for external devices, e.g. I/O Box
  (only VOXIO-C-xx**00**-A)

Fields of application

- Access control
- Time and attendance
- Data collection
- Parking systems / alarm systems
- General user identification

Special features

- Design according to VOXIO-T series
- Housing made of plastic
- Easy mounting flush mounted or surface mounted, see chapter „Installation“
- Connection type: screw terminals (lift system) resp. spring clamp
- Suited for indoor / outdoor using
- Compact construction
- Signal elements
  - 3 LED fields (RGB multicolor)
  - 1 speaker for acoustic signalization

Firmware / Software protocols

- phg_crypt
- Active sending
- "Magstripe" Clock/Data
  Format: track 1 or track 2
  (can be parameterized)
- "Wiegand" D0/D1
  Format: 26 or 56 Bit
  (can be parameterized)
- OSDP
- Customized modifications possible

The support and availability of the different software protocols depends on the current RFID-technology.
Detailed information on request

Technische Daten

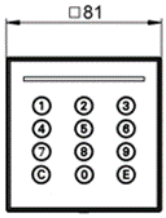
Product designation	Nominal power [W]	Nominal voltage [V_{DC}]	Temperature ranges [°C]		Dimensions [mm]	Weight [g]
			Storage	Operation		
VOXIO-C-1200-A	max: 2,0	8 … 30 *(internal polarity reversal protection)*	-30 … +70	-25 … +60	See below	Flush mount: 105
VOXIO-C-2000-A	max: 2,0					Surface mount: 155
VOXIO-C-3100-A	max: 3,5					
VOXIO-C-1240-A	max: 2,5					Flush mount: 80
VOXIO-C-2040-A	max: 2,0					Surface mount: 130
VOXIO-C-3140-A	max: 1,7					

IP protection: IP 54

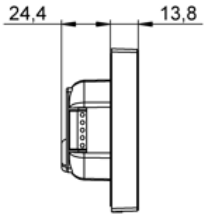
The maximum protection class IP 54 depends on the sealing against the mounting wall. If a surface mounted housing is used, the cable entry from the wall must be sealed with sealants.

When using the enclosed cable duct, make sure that the cut-out for the cable duct is adapted to the cable diameter. Additional sealing of the rear module to the wall is possible. Suitable sealants (e.g. silicone) are to be selected by qualified personnel according to the ambient conditions.

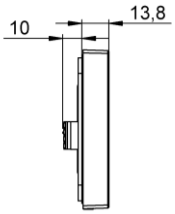
Dimensions:



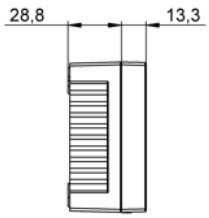
Front view
(all variants)



Side view
flush mounted
*(VOXIO-C-xx**00**-A)*



Side view
flush mounted
*(VOXIO-C-xx**40**-A)*



Side view
surface mounted
(all variants)

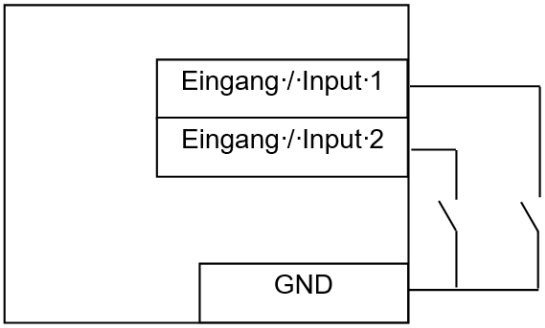
Supported transponder media

The support of the transponder media listed below is generally dependent on the respective variant reader technology (hardware platform) and on the respective reader firmware. The listing of the transponder media is without guarantee of completeness.
Further information can be received on request.

Functionally tested transponder media			
Transponder type	**VOXIO-C-1200 VOXIO-C-1240 LEGIC 4200**	**VOXIO-C-2000 VOXIO-C-2040 125 kHz**	**VOXIO-C-3100 VOXIO-C-3140 Mifare**
LEGIC MIM 22	X		
LEGIC MIM 256	X		
LEGIC MIM 1024	X		
ATC512-MP110 (ISO 14443A)	X		
ATC2048-MP110 (ISO 14443A)	X		
ATC4096-MP310 (ISO 14443A)	X		
ATC4096-MP311 (ISO 14443A)	X		
AFS4096-JP10/JP11 (ISO 14443A)	X		
ATC128-MV210 (ISO 15693)	X		
ATC256-MV210 (ISO 15693)	X		
ATC1024-MV110 (ISO 15693)	X		
hitag 1		X	
hitag 2		X	
hitag S		X	
EM 4102		X	
EM V4150		X	
Mifare Classic (1k / 4k)	X		X
Mifare DESFire 4k	X		X
Mifare DESFire EV1, EV2 2k / 4k / 8k	X		X
ISO 14443A Transponder (CSN)	X		X
ISO 15693 Transponder (CSN)	X		
INSIDE Secure (UID/CSN)	X		
SONY FeliCa subset	X		
Transparent, ISO14443A Layer 3	X		
Transparent, ISO14443A/B Layer 4 subset	X		
Transparent, ISO15693 Layer 3	X		
Transparent, NFC Forum Type 2 Tag	X		
Transparent, NFC Forum Type 3 Tag	X		

Pin assignment VOXIO-C-xx00-A

Rear module with interface (rear view)



General hardware wiring

Connection terminal ST1 (7-pin.)

PIN No.	Interface variant
	RS485
1	Input 1 (Active Low)
2	Input 2 (Active Low)
3	Data "B"
4	Data "A"
5	internally connected (no using possible)
6	GND
7	+Ub (8 to 30 V / DC)

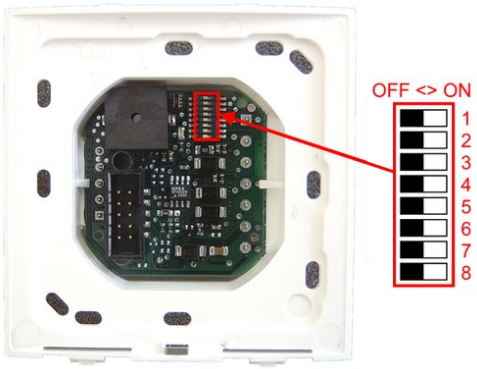
PIN No.	Interface variant						
	"Magstripe" Clock/Data			**"Wiegand" D0/D1**			
1	Input 1 (Active Low)			Input 1 (Active Low)			
2	Input 2 (Active Low)			Input 2 (Active Low)			
3	Clock	Open Collector "Active Low"	max. 10mA	D0	Open Collector "Active Low"	max. 10mA	
4	Data			D1			
5	CLS			Internally connected (no using possible)			
6	GND						
7	+Ub (8 to 30 V / DC)						
Terminal specification: Lift system / connection diameter 0.3 – 1.5 mm / stripping length 6 mm							

Connection terminal ST3 (5-pin)

Pin No.	Function	Description
1	GND_{out}	Power supply for external devices e.g. I/O-Box
2		
3	$+Ub_{out}$	
4	SCL	I^2C-Bus interface "Master" Function depends on firmware
5	SDA	
Terminal specification: Lift system / connection diameter 0.4 – 1.4 mm / stripping length 5 mm		

Attention! The wiring of the reader module have to be carried out in a de-energised state, i.e. the supply voltage may be switched on only after the complete assembly.

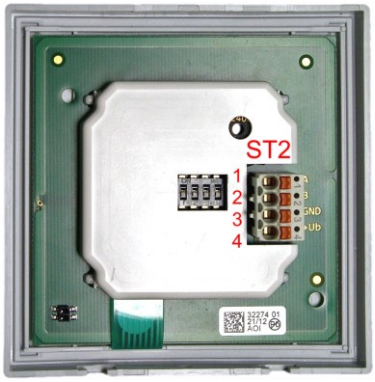
Function DIP switch VOXIO-C-xx00-A



DIP switch (8-pole - S1 to S8)

DIP switch		Function		
		RS 485	Magstripe Clock/Data	Wiegand D0/D1
S1		Depends on the firmware e.g. configuration of the reader's address, baud rate, terminating resistor for RS 485	Depends on the firmware e.g. operating mode, LED functions	
S2				
S3				
S4				
S5				
S6	OFF	Must be set to OFF (internal function)		
S7	OFF	**No** bus terminating resistor	No function	
	ON	120 Ω bus terminating resistor		
S8	OFF	Normal operating mode		
	ON	Voltage for reader board (front module) switched off, for pulling out / inserting the connecting cable when operating voltage is applied to the interface		
The appropriate wiring diagram is provided to each reader. It also includes the DIP switch configurations				

Pin assignment VOXIO-C-xx40-A



Rear view of the reader with spring clamp WAGO *picoMAX®eCOM*

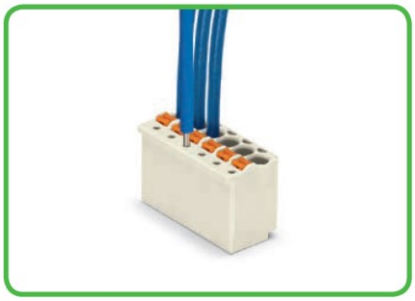
Connection terminal ST2 (pluggable 4pol. Spring clamp WAGO *picoMAX®eCOM*)

PIN No.	Interface RS485
1	Data "A"
2	Data "B"
3	GND
4	+Ub (8 to 30 V / DC)

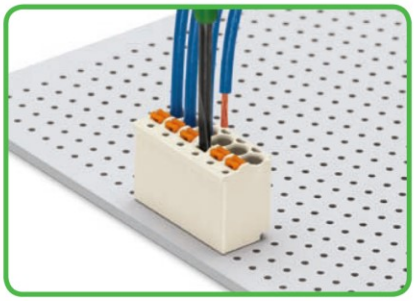
Cable data: WAGO *picoMAX®eCOM*

Anschlusstechnik	CAGE CLAMP®S	
Leiterquerschnitt: eindrähtig	0,2 – 1,5 mm²	
Leiterquerschnitt: feindrähtig	0,2 – 1,5 mm²	
Leiterquerschnitt: feindrähtig	0,25 – 0,75 mm²	(mit Aderendhülse mit Kunststoffkragen)
Leiterquerschnitt: feindrähtig	0,25 – 1,5 mm²	(mit Aderendhülse ohne Kunststoffkragen)
Leiter (AWG)	24 – 14	14: THHN, THWN
Abisolierlänge	8 – 9 mm / 0.31 – 0.35 in	

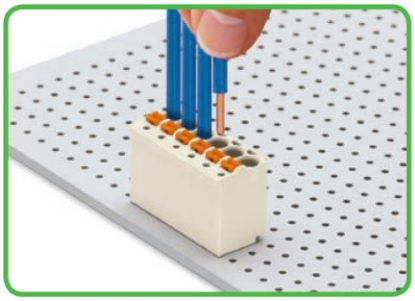
Handling WAGO *picoMAX®eCOM*



Prüfen mit Prüfstift 1 mm Ø, Tippkontaktierung.



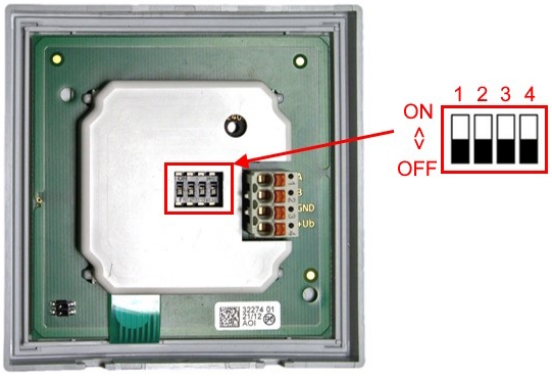
Leiter anschließen – das Anschließen feindrähtiger Leiter bzw. das Lösen von Leitern erfolgt durch Drückerbetätigung.



Eindrähtige Leiter und feindrähtige Leiter mit Aderendhülsen können direkt gesteckt werden.

Attention! The wiring of the reader module have to be carried out in a de-energised state, i.e. the supply voltage may be switched on only after the complete assembly.

Function DIP switch VOXIO-C-xx40-A



DIP switch (4-pole – S1 to S4)

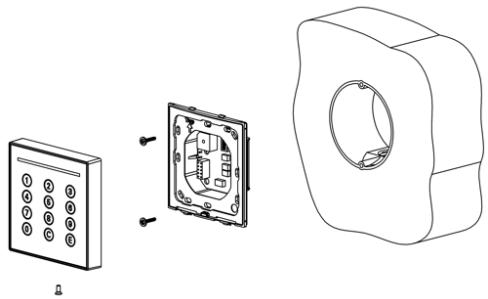
DIP switch		Function
S1		Depends on the firmware e.g. configuration of the reader's address
S2		
S3		
S4	OFF	**No** bus terminating resistor
	ON	120 Ω bus terminating resistor
The appropriate wiring diagram is provided to each reader. It also includes the DIP switch configurations		

Installation

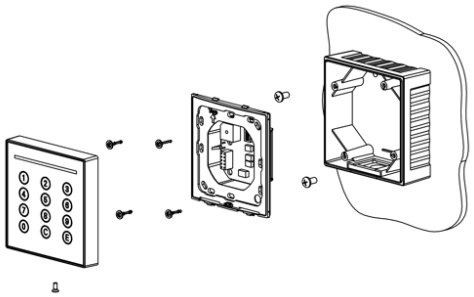
Attention: Please mind the „TOP“-marking on each rear module of the reader when installing!

Every reader comes with a mounting and installation instruction. There you will find detailed information on assembly

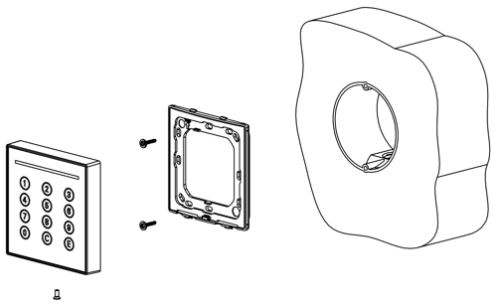
Flush mounted variant
VOXIO-C-xx**00**-A



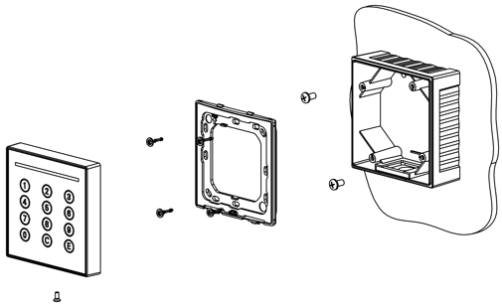
Surface mounted variant
VOXIO-C-xx**00**-A



Flush mounted variant
VOXIO-C-xx**40**-A



Surface mounted variant
VOXIO-C-xx**40**-A



General information

Influences (reduction) of the reading distance

An influence of the reading distance can have more reasons.

This is a list of facts that reduce the reading distance:

- Shielding the data carrier by metal materials, e.g. EC card in the wallet, key tag on a bunch of keys
- No optimum coupling, i.e. the antenna surface of the data carrier is vertical (90°) to the reader's antenna surface
- Data carrier itself
  - key tag (small active antenna surface)
  - poor resonance of the data carrier (IC card / key tag)
  - combined ID card (e.g. LEGIC® / inductive, mifare/inductive, etc.)
- Metal in the "active" surface of the HF field. The transmitting energy is reduced. This point is mainly relevant, when the reader components are integrated in metal cover plates (including metal pillars etc.).

Conformity statement

This product complies to the common legal requirements if used according to regulations. We provide you the EU declaration of conformity on demand.

Care and cleaning instruction

The use of hard or sharp objects (rings, fingernails etc.) can cause scratches and damage the device.
Wipe the device with a soft lint-free cloth, or one that has been lightly dampened with water.
The use of caustic liquids such as benzene, thinners, alcohol, solvents, or any kind of abrasive cleaners will lead to surface deterioration and damage.

Waste Disposal

This product **must not** be disposed in normal household waste!