ARMATURA

Explorer Series - EP20C / CK / CQ / CKQ

MOBILE READY

All Weather Outdoor Multi-tech Smart Reader

- Designed for Advanced Security
- Supports Over 100 RFID Credential Types
- Touch Keypad / QR Code Scanner

Bluetooth OSDP NFC QR CODE

EP20C EP20CK EP20CQ EP20CKQ

Compact RFID Reader with Touch Keypad

The EP20 reader series is one of the most compact multi-tech RFID readers in the market, which supports over 100 RFID card types and both mobile NFC and Bluetooth (Low Energy) and is suited for most installation environments. Embedded touch keypad enables passwords as an authentication option for users to best suit their needs.

Multi-tech RFID & Mobile Credential

Supports over 100 RFID card types in standard package with varies optional RFID modules that cover up to over 10 extra advanced secured RFID protocols, which almost cover most of the end-user requests, enabling high flexibility for multi-card types and mobile credentials situation.

Designed for Advanced Security

Secure communication: OSDP (v2.2 Secure Channel) over RS-485 communication between EP20 series readers and control panels. Complies with AES-128 standards to prevent against interleaving and replay attacks. Complies with AES256 encryption standards between mobile (NFC / Bluetooth) and reader communication.

Secured Data Storage: Certified EAL6+ encryption chips to enhance data protection performance to the finical grading security level.

IP68 Water & Dustproof Protection Level

Certified IP68 Water & Dustproof levels represent that the readers can withstand dust, dirt and sand, and are resistant to submersion up to a maximum depth of 3.3ft/ 1.5m underwater for up to thirty minutes.

IK10 Physical & Environmental Protection

Certified IK10 Vandal-proof rating enables protection from multiple attacks up to 20 joules.

Anti-SPA/ DPA/ EMA/ DEMA Attack

Effectively prevents external malicious attacks and protect all communication and client's data.

Safety Standard of UL746C (F1) and Housing Material Meets UL94-V0 Standard

Ability to work in both indoor & outdoor environments. Resistant to UV degradation. UL 94V-0 standard ensures burning combustion is not sustained for more than 10 seconds after applying controlled flame.

Advanced Security

The Armatura design team is dedicated to ensuring the Explorer Series reaches the highest security expectations.

Explorer Series readers support 4 mobile identification modes when used with the Armatura ID mobile app.

Card Mode
Present your smartphone to the reader like an access card

Remote Mode
Verify on the reader by clicking a button in the Armatura ID app

QR Code Mode
Present your QR Code and get access

Express Mode COMING SOON
Activated and paired up with reader for fully automated door access

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Key Features

Mobile Credential Capability

The Armatura ID mobile app offers a consistent user experience across iOS & Android platforms. Opening doors by presenting your smartphone to the reader or scanning a QR code. Use your phone's Face & TouchID functions for even more secure authentication. It supports both NFC and Bluetooth communication methods, extending mobile access functions to almost all smartphone users.

Compact Design with Touch Keypad & QR Code Scanner as options

Compatible with single gang, European and Asian style boxes suit most interior designs. Optional touch keypad for password authentication. QR code scanner for static/dynamic QR code recognition.

Enhanced Security

Supporting Open Supervised Device Protocol (OSDP) guarantees secured communication between the control panels and readers. Advanced-Data protection using certified crypto chips with EAL6+ certified. AES128 end-to-end encryption between the control panel and reader, ensuring all communications are secure.

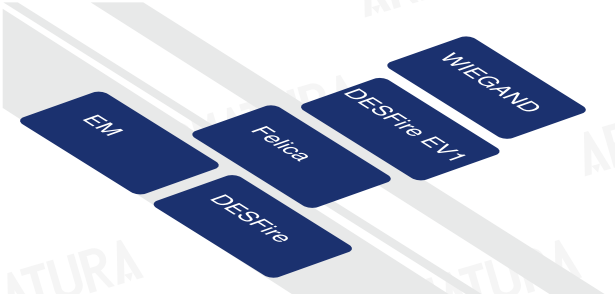
OSDP™

Ultimate Protection (IP68 & IK10 & UL94-V0)

IK10 Vandal-proof and IP68 Water & Dustproof protection levels enable operation under any installation environment. IK10 vandal-proof protection level enhances protection ability against malicious physical attacks. -30°C to 70°C / -22°F - 158°F operating temperature enables operation under extreme weather conditions. UL 94V-0 standards for flammability ensures burning combustion is not sustained for more than 10 seconds after applying a controlled flame.

Supports Multi-tech Reading

Supports 125 kHz, 13.56 MHz and 2.4GHz frequency credentials. Supports 100+ card types, covering most of the common card formats in the market.



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Dimensions

EP20C EP20CK EP20CQ EP20CKQ

Specifications

Internal Number	EP20C	EP20CK	EP20CQ	EP20CKQ
Operating Frequency / Standards	125 kHz 13.56 MHz: ISO14443 types A & B, ISO15693 2.4 GHz Bluetooth®			
Functions	RFID, Bluetooth® and QR code			
Keypad	N/A	Touch Keypad	N/A	Touch Keypad
QR Code Scanner	N/A		Supported	
QR Code Scanning Pattern	N/A		Area image (648*488 pixel array)	
QR Code Scan Angle	N/A		Horizontal: 66°/ Vertical: 50°	
QR Code Scanning Print Contrast	N/A		Print Contrast: 25% minimum reflectance difference Rotation, Pitch, Skew: 360°, +/-40°, +/-60°	
QR Code Capability	One-Dimensional Code: UPC-A , UPC-E, UPC-E1, EAN-8, EAN-13, EAN-14, EAN-128, UCC128, ISBN/ISSN, CODE11, CODE32, CODE39, CODE39 Full ASCII, CODE93, CODE128, Interleaved 2 of 5 code, Industrial 2 of 5 code, Matrix 2 of 5 code, Toshiba code, UK/Plessey, GS1 Two-Dimensional Code: QR code, PDF417, Data matrix, MicroPDF417, Aztec			
QR Code Scanning Performance*	N/A		Narrow Width 6.0 mil (Code128) 9.0 mil (Code128) 15.0 mil (Code128) 20.0 mil (Code128) 6.0 mil (QR) 9.0 mil (QR) 15.0 mil (QR) 20.0 mil (QR)	Depth of Field 2.0"-3.1" (5cm-8cm) 2.0"-4.7" (5cm-12cm) 2.3"-7.7" (6cm-19.5cm) 2.3"-9.8" (6cm-25cm) 2.0"-2.3" (5cm-6cm) 2.0"-3.5" (5cm-9cm) 2.0"-6.3" (5cm-16cm) 2.3"-7.9" (6cm-20cm)

Internal Number	EP20C	EP20CK	EP20CQ	EP20CKQ
Communications & Panel Connection	Wiegand OSDP (v2.2) via RS-485 (Up to 128bits SCP Secure Communication)			
Reading Distance	13.56MHz & 125kHz: Up to 2.3"/60 mm (depending on environment and transponder) Up to 393.7"/ 10m with a Bluetooth Smartphone (configurable distances on each reader)			
Data Protection	AES128 (Secured Communication between Reader & Controller) Secure Data Storage in EAL6+ Certified Crypto Chip			
Visual Indicator	RGB LEDs (Configurable By 'Armatura Connect' Mobile APP)			
Audio Indicator	Internal buzzer with adjustable intensity (Configurable By 'Armatura Connect' Mobile APP)			
Power Requirement / Power Supply	9 VDC to 24 VDC			
Operating Temperature	-22°F - 158°F /-30°C to 70°C			
Dimensions	3.54" W x 4.24" H x 0.93" D (89.8 x 107.8 x 23.6mm)			
Tamper Switch	Magnetic tamper detection system			
Certifications	CE, FCC, RoHs3.0, WEEE, UL294			
Mounting	Suited for Asian / European / single-gang installations or any flat surface mounting			
Protection / Resistance	Weather & Dust Proof Protection Rating compliant with IP68 Reinforced Vandal-proof Structure IK10 certified	Weather & Dust Proof Protection Rating compliant with IP68 Reinforced Vandal-proof Structure IK07 certified	Weather & Dust Proof Protection Rating compliant with IP68 Reinforced Vandal-proof Structure IK10 certified	Weather & Dust Proof Protection Rating compliant with IP68 Reinforced Vandal-proof Structure IK07 certified
UV Stability	Nil structural degradation for the life of the reader in 3 years			
Housing Material	Polycarbonate UL94-V0 & UL746C (F1)			

Remarks:
**Standard version provides “Read only” function. Customization is required for “Read & Write” function.
*This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (http://www.openssl.org/)
QR scanning performance was resulted in a laboratory testing environment, the luminance was recorded as 250 Lux

ARMATURA RFID Card Module Supporting List

ArmaSec-22112022

Frequency	Classification	Card Module Abbreviation	[DF]	[SFMH]	[NO]	[NP]	[NI]	[NOL]	[NPL]	[NOH]	[NIH]
		Compatible Readers	EP10C/ EP20C/ EP20CK/ EP20CQ/ EP20CKQ/ EP30 Series	EP10C/ EP20C/ EP20CK/ EP20CQ/ EP20CKQ/ EP30 Series	EP10C	EP10C/ EP20CQ/ EP20CKQ	EP10C/ EP20CQ/ EP20CKQ	EP10C	EP10C	EP10C	EP10C
13.56MHz	ISO14443A	LEGIC Advant		√	√1)	√1)	√1)			√1)	√1)
		MIFARE Classic, Mini S50,S70,S50	√4)	√	√	√	√			√	√
		MIFARE Classic EV1	√4)	√2)	√2)	√2)	√2)			√2)	√2)
		MIFARE DESFire Light		√11)	√11)	√11)	√11)			√11)	√11)
		MIFARE DESFire EV1	√4)	√	√	√	√			√	√
		MIFARE DESFire EV2	√4)	√11)	√11)	√11)	√11)			√11)	√11)
		MIFARE Plus S, X		√	√	√	√			√	√
		MIFARE Pro X			√3)	√3)	√3)			√3)	√3)
		MIFARE Smart MX		√3)	√3)	√3)	√3)			√3)	√3)
		MIFARE Ultralight		√	√	√	√			√	√
		MIFARE Ultralight C		√	√	√	√			√	√
		MIFARE Ultralight EV1		√2)	√2)	√2)	√2)			√2)	√2)
		NFC (NTAG2xx)	√		√	√	√			√	√
		PayPass		√3)	√3)	√3)	√3)			√3)	√3)
		SLE44R35		√3)	√3)	√3)	√3)			√3)	√3)
		SLE66Rxx (my-d move)		√3)	√3)	√3)	√3)			√3)	√3)
		Topaz			√	√	√			√	√
		HID iCLASS SEOS					√20)				√20)
		NFC(HCE & NTAG2xx)		√	√	√	√			√	√
	ISO14443B	Calypso		√3)	√3)	√3)	√3)			√3)	√3)
		Calypso Innovatron protocol		√3)	√3)	√3)	√3)			√3)	√3)
		CEPAS		√3)	√3)	√3)	√3)			√3)	√3)
		HID iCLASS		√	√1)	√1)	√10)			√1)	√10)
		CTS		√	√	√	√			√	√10)
		Moneo		√3)	√3)	√3)	√3)			√3)	√10)
		Pico Pass		√4)	√4)	√4)	√4)			√4)	√4)
		SRI4K, SRIX4K		√	√	√	√			√	√
		SRI512, SRT512		√	√	√	√			√	√
	ISO18092/ ECMA-340	Sony FeliCa		√5)	√5)	√5)	√5)			√5)	√5)
	ISO15693	EM4x33		√3)	√3)	√3)	√3)			√3)	√3)
		EM4x35		√3)	√3)	√3)	√3)			√3)	√3)
		HID iCLASS		√	√1)	√1)	√10)			√1)	√10)
		HID iCLASS SE/ SR/ Elite		√	√1)	√1)	√10)			√1)	√10)
		iCODE SLI		√	√	√	√			√	√10)
		LEGIC Advant		√1)	√1)	√1)	√1)			√1)	√1)
		M24LR16/64			√	√	√			√	√
		MB89R118/119			MT2, MT3, Nano, Palon, Wall, Panel	MT2, MT3, Nano, Palon, Wall, Panel	MT2, MT3, Nano, Palon, Wall, Panel			MT2, MT3, Nano, Palon, Wall, Panel	MT2, MT3, Nano, Palon, Wall, Panel
		SRF55Vxx (my-d vicinity)		√3)	√3)	√3)	√3)			√3)	√3)
		Tag-it		√	√	√	√			√	√
		Pico Pass			√4)	√4)	√4)			√4)	√4)
		LEGIC Prime		√							
		CPU Card									

*To be released

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		Compatible Readers	EP10C/ EP20C/ EP20CK/ EP20CQ/ EP20CKQ/ EP30 Series	EP10C/ EP20C/ EP20CK/ EP20CQ/ EP20CKQ/ EP30 Series	EP10C	EP10C/ EP20CQ/ EP20CKQ	EP10C/ EP20CQ/ EP20CKQ	EP10C	EP10C	EP10C	EP10C
125kHz		AWID			√	√	√	√	√		
		Cardax			√	√	√	√	√		
		CASI-RUSCO			√	√	√	√	√		
		Cotag									
		Deister			√6)	√6)	√6)	√6)	√6)		
		EM4100, 4102, 4200	√		√7)	√7)	√7)	√7)	√7)		
		EM4050, 4150, 4450, 4550			√	√	√	√	√		
		EM4305			√14)	√14)	√14)	√14)	√14)		
		FDX-B, EM4105			√15)	√15)	√15)	√15)	√15)		
		Ultra Prox			√15)	√15)	√15)		√15)		
		G-Prox				√6)	√6)		√6)		
		HID DuoProx II (1336)				√	√		√		
		HID ISO Prox II (1386)				√	√		√		
		HID Micro Prox II (1391)				√	√		√		
		HID Prox III (1346)				√	√		√		
		HID Prox				√	√		√		
		HID Prox II (1326)				√	√		√		
		HITAG 1, 2, S			√9)	√9)	√9)	√9)	√9)		
		ICT			√8)	√8)	√8)	√8)	√8)		
		IDTECK			√	√	√	√	√		
		Indaia									
		ioProx									
		ISONAS			√	√	√	√	√		
		Keri			√	√	√	√	√		
		Miro			√	√	√	√	√		
		Nedap			√6)	√6)	√6)	√6)	√6)		
		Nexwatch				√	√		√		
		PAC			√8)	√8)	√8)	√8)	√8)		
		Pyramid			√	√	√	√	√		
		Q5			√	√	√	√	√		
		T5557, T5567, T5577			√	√	√	√	√		
		TITAN (EM4050)			√	√	√	√	√		
		UNIQUE			√	√	√	√	√		
		ZODIAC			√	√	√	√	√		
		Globally Available		√				√	√	√	√
	Availability	Globally Available Except for U.S., E.U., Japan, Australia, Canada, U.K., Albania, Iceland, Liechtenstein, Monaco, North Macedonia, Norway, San Marino, Serbia, Switzerland, Turkey, and the United Kingdom	√		√	√	√				

1) UID only
2) Read /write enhanced security features on request
3) Read /write in direct chip command mode
4) UID only, read/write on request
5) UID + read /write public area
6) Hash value only
7) Only emulation of 4100, 4102
8) On request
9) Without encryption
10) UID+PAC (CSN & Facility Code), read /write on request
11) In preparation
13) EV2/EV3 supported as part of the EV1 upward compatibility
14) From FW V4.05
20) PAC (CSN & Facility Code), read /write on request

To be released

The final interpretation of this data sheet belongs to Armatura LLC.
All information regarding the card formats supported by the RFID card modules are claimed by the provider(s) of the card modules. Armatura LLC accepts no liability.

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