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Data Sheet

ioSmart
Smart Card and Multi-Technology Readers

Features That Make a Difference

- End-to-end encryption for added security
- Cost-effective solution to transition from prox to advanced smart technology
- Open technology provides versatility
- Capacitive touch keypad available
- Bluetooth-ready for future proofing
- Unique design allows time-saving wiring to standard door contacts and T.Rex devices
- Mullion and single-gang models
- Available on KT-1 and newer KT-400 controllers
- Tyco Cloud cloud-enabled product

Cost-Effectively Transition to Advanced Technology

Kantech's ioSmart Smart Card Readers give customers an easy and powerful way to move from proximity cards to advanced smart card technology, whether they are using the popular Kantech ioProx solution or another proximity system.

Multi-technology readers provide the option to read both prox and smart cards allowing the customers to migrate at their pace.

High Level of Security

ioSmart readers provide end-to-end AES 128-bit encryption between the ioSmart card and ioSmart reader when connected to KT-400 and KT-1 controller over RS-485 and aforementioned controllers to EntraPass software over IP.

Versatile, Time-Saving Design

Unlike other solutions on the market that use restrictive, proprietary technology, ioSmart's open technology offers versatility. Based on MIFARE Plus smart technology for readers, and MIFARE Plus EV1 for credentials, ioSmart supports many different car formats, including HID® Prox. The reader can also be used with any access controller using Wiegand protocol.

To save installation time and money, ioSmart Smart Card Readers can be wired directly to standard door contacts and T.Rex devices rather than running the wires all the way to a controller.

ioSmart Smart Card Readers are available in single-gang or mullion models and can be installed in indoor or outdoor applications.

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More Than Just a Reader

ioSmart readers are uniquely designed with multi-purpose capabilities for broader access control applications. ioSmart readers offer choice of Tyco Cloud-managed mobile access control solutions that simplify security and reduce cost. With ioSmart readers, existing access control systems can continue use of legacy contactless card and key tag technologies, while benefiting from the increased security and convenience of supporting mobile smartphone-based credentialing.

Future Proof

ioSmart Smart Card Readers are Bluetooth-ready and field firmware upgradeable, providing a solution that customers can rely on for long-term performance.

Beyond access control, customers can use the ioSmart MIFARE Plus EV1 card's additional unlocked sectors for third party applications such as vending, cafeteria, bus/train, etc.*

These readers offer an uncomplicated path to secure, feature-rich technology.

Intuitive User Experience

ioSmart Smart Card Readers include an intuitive LED status bar that clearly indicates various access conditions to the user. There are also models available with integrated backlit, capacitive keypad support for dual factor authentication, combining contactless card presentation with a PIN.
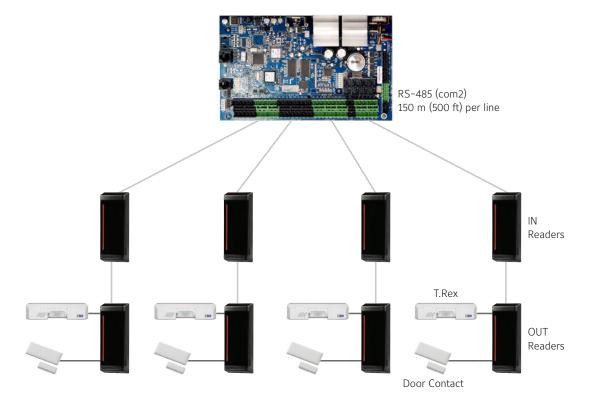
Supported ioSmart Reader Card Formatting

Format	Multi-Technology Models	Smart Card Models
ioSmart MIFARE Plus EV1 (Kantech Smart Cards)	x	x
ioProx (Kantech Proximity Cards)	x	
HID Prox 125Khz (Common Formats ie: Corp1000, 26-bit)	x	
MIFARE Classic (UID)	x	x
MIFARE Plus (UID)	x	x
DESFire (UID)	x	x
14443B Standard (UID) OPUS Cards	x	x

*Software to program open sectors is not provided by Kantech
**Compatible RS-485 access control units include KT-400 and KT-1

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Basic ioSmart Wiring Diagram

RS-485 (com2)
150 m (500 ft) per line

IN Readers

T.Rex

OUT Readers

Door Contact

Specifications

	Mullion			Single-Gang		
Model Number	KT-MUL-MT-KP	KT-MUL-MT	KT-MUL-SC	KT-SG-MT-KP	KT-SG-MT	KT-SG-SC
RF Technologies	13.56 MHz 125 kHz	13.56 MHz 125 kHz	13.56 MHz	13.56 MHz 125 kHz	13.56 MHz 125 kHz	13.56 MHz
Power Consumption (mA) @ 12 VDC Peak / Average	200 mA / 80 mA	100 mA / 70 mA	100 mA / 70 mA	200 mA/ 80 mA	100 mA / 70 mA	100 mA / 70 mA
Weight	110 g (0.24 lbs)	110 g (0.24 lbs)	105 g (0.23 lbs)	175 g (0.4 lbs)	170 g (0.37 lbs)	165 g (0.36 lbs)
Capacitive Touch Keypad with Backlighting	Yes	No	No	Yes	No	No
Typical Read Range 125 kHz ioProx ID-1 Credentials (Cards)	Up to 5.1 cm (2.0 in)		n/a	Up to 6.8 cm (2.7 in)		n/a
Typical Read Range 13.56 MHz MIFARE Plus EV1, encrypted sector, ID-1 Credentials (Cards)	Up to 3.8 cm (1.5 in)			Up to 4.3 cm (1.7 in)		
Mounting	Mullion			Single-Gang (North America / Europe)		
Dimensions (H x W x D)	115.8 x 44.6 x 24.7 mm 4.56 x 1.75 x 0.97 in			115.8 x 71.5 x 24.7 mm 4.56 x 2.81 x 0.97 in		

Supported Credentials 125 kHz	ioProx and HID	n/a	ioProx and HID	n/a
Supported Credentials 13.56MHz	MIFARE Plus EV1 and ISO/IEC 14443A and 14443B			
Supported Credentials BLE (Bluetooth Low Energy) 2.4 GHz	ioSmart mobile credentials and smart keys			
Wiring Terminal	6 screwless poles			
Tamper	Optical			
Wiegand Communication Formats	Kantech SSF, Kantech XSF, 26-bit, 34-bit			
Sounder	Integrated			
AES-128 Security	From the ioSmart card to the reader. From the reader to the access control unit over RS-485. From the smartphone application to the reader			
Output	RS-485 or BLE panel-less: 1 supervised open-drain, up to 750 mA			
Operating Temperature	Non-UL listed product: -40°C to +70°C (-40°F to +158°F) UL listed product: -35°C to +66°C (-31°F to +151°F)			
Operating Humidity	0 to 95% non-condensing			
LED Indicator	Multi-color bar: Red, Green, Yellow, Blue, Configurable			
Inputs in Wiegand mode	LED and Buzzer			
Inputs in RS-485	2 to 4, configurable			
Inputs in BLE panel-less	2 configurable			
Input Voltage	8.5 VDC to 16 VDC (provided by UL 294 or UL 603 listed, power limited power source)			
Housing	Polycarbonate, smoked black			
Flammability Rating	UL94 V-2			
Firmware	Fully upgradable using RS-485			
Ingress Protection Rating	IP55 (not verified by UL)			
Communication	RS-485 (AES 128-bit), Wiegand or BLE (AES 128-bit)			
Cabling	3 twisted pairs AWG 22 unshielded or CAT5, up to 150 m (500 ft)			
Warranty	Limited Lifetime			
Certifications	FCC, IC, CE, UL 294, FIPS 197, RoHS, WEEE. For RS-485, NIST CAVP validation number AES 3667, key length 128			
Compatible RS-485 Access Control Units	KT-400 and KT-1 (see ioSmart install manual for cable distances between reader and controller)			

Ordering Information

ioSmart Card Readers and Cards

Model Number	Description
KT-MUL-MT	ioSmart Smart Card Reader, multi-technology, mullion
KT-MUL-MT-KP	ioSmart Smart Card Reader, multi-technology, mullion with keypad
KT-MUL-SC	ioSmart Smart Card Reader, smart card only, mullion
KT-SG-MT	ioSmart Smart Card Reader, multi-technology, single gang
KT-SG-MT-KP	ioSmart Smart Card Reader, multi-technology, single gang with keypad
KT-SG-SC	ioSmart Smart Card Reader, smart card only, single gang
MFP-2KDYE	MIFARE Plus EV1 2K Printable Smart Card
MFP-2KDYE-COM	MIFARE Plus EV1 2K Printable Smart Card. Composite, 40% Polyester / 60% PVC
MFP-2KSHL	MIFARE Plus EV1 2K Shell Smart Card
MFP-2KKEY	MIFARE Plus EV1 2K Keyfob
MT-2KDYE	Dual Tech Smart Card; MIFARE Plus EV1 2K; 7-Byte UID; 125 kHz ioProx

ioSmart Starter Kits

Model Number	Security Software	Controller(s)	Reader(s)	Other Items
SK-CE-400-SCM	EntraPass Corporate Edition	KT-400	KT-MUL-SC (3) KT-MUL-MT-KP (1)	USB-485 converter (1), TR1675 transformer (1), KT-BATT-12 battery (1), MFP-2KSHL smart cards (5) (US and Canada)
SK-CE-400-SCSG	EntraPass Corporate Edition	KT-400	KT-SG-SC (3) KT-SG-MT-KP (1)	USB-485 converter (1), TR1675 transformer (1), KT-BATT-12 battery (1), MFP-2KSHL smart cards (5) (US and Canada)
SK-SE-400-SCM	EntraPass Special Edition	KT-400	KT-MUL-SC (3) KT-MUL-MTw-KP (1)	USB-485 converter (1), TR1675 transformer (1), KT-BATT-12 battery (1), MFP-2KSHL smart cards (5) (US and Canada)
SK-SE-400-SCSG	EntraPass Special Edition	KT-400	KT-SG-SC (3) KT-SG-MT-KP (1)	USB-485 converter (1), TR1675 transformer (1), KT-BATT-12 battery (1), MFP-2KSHL smart cards (5) (US and Canada)
SK-CE-1M-SCM	EntraPass Corporate Edition	KT-1-M	KT-MUL-SC (1)	MFP-2KSHL smart cards (5), KT-PTC164OUG 120V / 16 VAC 40 VA transformer, KT-PS4085 12 VDC power supply, KT-BATT-12 battery
SK-CE-1M-SCM-LA	EntraPass Corporate Edition	KT-1-M	KT-MUL-SC (1)	120V / 16 VAC 40 VA transformer (KT-PTC1640UG), 12 VDC power supply (KT-PS4085), 12V 7 AH battery (KT-BATT-12), 5 smart cards (MFP-2KSHL)
SK-SE-1M-SCM-C	EntraPass Special Edition	KT-1-M	KT-MUL-SC (1)	MFP-2KSHL smart cards (5), KT-PTC1640CG 120V / 16 VAC 40 VA transformer (Canada only), KTPS4085 12 VDC power supply, KT-BATT-12 battery
SK-SE-1M-SCM	EntraPass Special Edition	KT-1-M	KT-MUL-SC (1)	MFP-2KSHL smart cards (5), JT-PTC1640UG 120V / 16 VAC 40 VA transformer, KT-PS4085 12 VDC power supply, KT-BATT-12 battery
SK-CE-1M-SCM-C	EntraPass Corporate Edition	KT-1-M	KT-MUL-SC (1)	MFP-2KSHL smart cards (5), KT-PTC1640CG 120V / 16 VAC 40 VA transformer (Canada only), KTPS4085 12 VDC power supply, KT-BATT-12 battery

ioSmart Expansion Kits

Model Number	Controller(s)	Reader(s)	Other Items
EK-400-MTM	KT-400	KT-MUL-MT (4)	TR1675 transformer (1), KT-BATT-12 battery (1) (US and Canada)
EK-400-MTSG	KT-400	KT-SG-MT (4)	TR1675 transformer (1), KT-BATT-12 battery (1) (US and Canada)
EK-1M-MTM	KT-1-M	KT-MUL-MT (1)	KT-PTC1640UG 120V / 16 VAC 40 VA transformer, KT-PS4085 12 VDC power supply, KT-BATT-12 battery
EK-1M-MTM-LA	KT-1-M	KT-MUL-MT (1)	KT-PTC1640UG 120V / 16 VAC 40 VA transformer, KT-PS4085 12 VDC power supply
EK-1M-MTM-C	KT-1-M	KT-MUL-MT (1)	KT-PTC1640CG 120V / 16 VAC 40 VA transformer (Canada only), KT-PS485 12 VDC power supply, KT-BATT-12 battery
EK-1-MTM	KT-1	KT-MUL-MT (1)	n/a
EK-1-MTM-C	KT-1	KT-MUL-MT (1)	n/a
EK-400-SCM	KT-400	KT-MUL-SC (4)	TR1675 transformer (1), KT-BATT-12 battery (1). (US and Canada)
EK-400-SCSG	KT-400	KT-SG-SC (4)	TR1675 transformer (1), KT-BATT-12 battery (1). (US and Canada)
EK-1M-SCM	KT-1-M	KT-MUL-SC (1)	KT-PTC1640UG Transformer 120V / 16 VAC 40 VA, KT-PS4085 12 VDC power supply, KT-BATT-12 battery
EK-1M-SCM-C	KT-1-M	KT-MUL-SC (1)	KT-PTC1640CG transformer 120V / 16 VAC 40 VA (Canada only), KT-PS485 12 VDC power supply, KT-BATT-12 battery

About Johnson Controls

Johnson Controls is a global diversified technology and multi-industrial leader serving a wide range of customers in more than 150 countries. Our 120,000 employees create intelligent buildings, efficient energy solutions, integrated infrastructure and next generation transportation systems that work seamlessly together to deliver on the promise of smart cities and communities. Our commitment to sustainability dates back to our roots in 1885, with the invention of the first electric room thermostat.

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