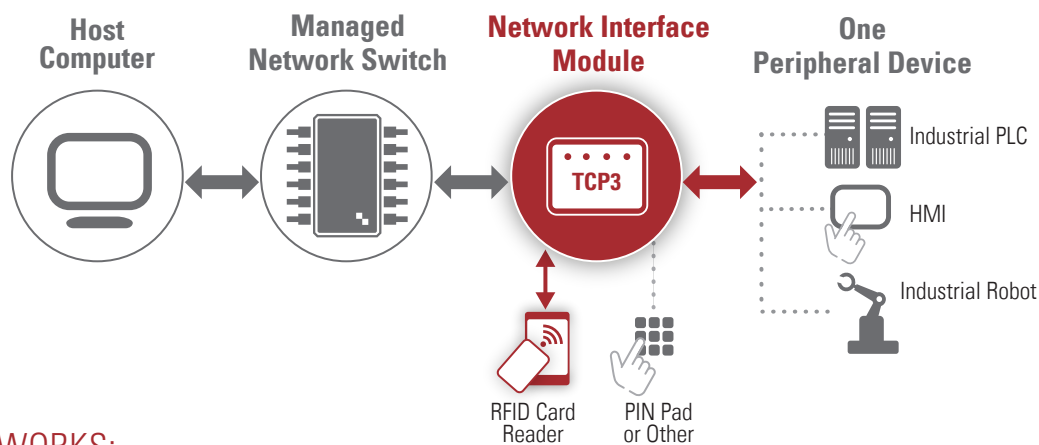# NETWORK-ENABLED USER AUTHENTICATION AND ACCESS CONTROL STATION

TWN4 MULTITECH 2 RFID READER + TCP3 NETWORK INTERFACE MODULE

What is the best way to ensure product quality and production uptime in industrial automation? Make sure that only trained and authorized people can access the programmable controllers.

ELATEC's TWN4 MultiTech 2 RFID reader/writer paired with our TCP3 Network Interface Module extends RFID identification card-based capability to access control of industrial automation software and hardware devices.

With the TWN4 MultiTech 2 + TCP3 hardware combination you get all the flexibility, networking capability, and security features of both devices. You also get ELATEC's powerful software and competent customer support to optimally meet your authentication and access control challenges.

HOST Computer — Managed Network Switch — Network Interface Module (TCP3) — One Peripheral Device (Industrial PLC, HMI, Industrial Robot) — RFID Card Reader — PIN Pad or Other

HOW IT WORKS:

Authorization data determine if the employee has the proper skill set, is currently trained and certified to access the manufacturing system hardware and software, or, for instance, is authorized to enter a hazardous area to perform maintenance or other activities.

Simply put, with the addition of the network interface module to the programmable controller, network connectivity between the controller and the server is enabled. An RFID reader can then be plugged in to it, providing verification of user identity and so access to the controller.

RFID READER

The ELATEC TWN4 MultiTech 2 is a universal, HF/LF, reader/writer that supports 60+ RFID transponder technologies simultaneously as well as near field communication (NFC) and Bluetooth Low Energy (BLE) used by smartphones and other mobile devices. This is ideal for companies employing multiple card technologies or who want to use their current identification cards and expand their functionality to address authentication and access control in their industrial automation applications.

The TWN4 also makes it easy for a manufacturing company to migrate from an existing one to a new card type that better suits their needs.

NETWORK INTERFACE MODULE

The ELATEC TCP3 network interface module is a small, highly flexible network interface device that shines in industrial authentication and access control applications. It has two USB 3.0 connectors for connecting one or two card readers or, for example, one card reader and another device such as a PIN pad for two-factor authentication.

The TCP3 can also act as an Ethernet router and has two gigabit Ethernet connectors, one used for LAN communications to the Host server and another for message communications to a peripheral device, like a PLC, industrial PC or robot automation controller. The host connection also supports optional Power over Ethernet (PoE) for applications where it is difficult to find a power source.

Industrial Automation-level Security

When used in industrial automation applications, secure, encrypted communications between the card reader, plant networks and peripheral devices is often critical. The TCP3 network interface module can send card data and secure message traffic to the host or device networks using standard encryption methods like HTTP/SSL/TLS1.2. A typical example is when sending message traffic to a peripheral device through the TCP3. The TCP3 can exchange security certificates with a programmable automation controller, like a PLC, ensuring that the message cannot be read by anyone not authorized.

Remote Programmability and Management

Both the TWN4 MultiTech 2 reader and the TCP3 network interface module are easy to support. No need to send a technician to the plant floor when an update is needed. Both devices can be easily configured, reconfigured, and upgraded remotely using ELATEC software on a remote computer managed by plant engineering or IT personnel. For example, this means that configuration changes and firmware can be remotely updated to all affected devices simultaneously, saving a significant amount of time.

TWN4 MultiTech2 RFID Reader – Technical Data

FREQUENCY	125 kHz (LF) / 13.56 MHz (HF) / 2.4 GHz (BLE)
ANTENNA	Integrated
HOUSING	Material: ABS UL94-V0, color: black or white
DIMENSIONS (L X W X H)	Desktop Reader: 88 mm x 56 mm x 18 mm / 3.5 inch x 2.2 inch x 0.7 inch OEM Board: 76 mm x 49 mm x 9 mm / 3.0 inch x 1.9 inch x 0.4 inch
POWER SUPPLY	4.3 V- 5.5 V via USB; via generic interface (X2) 3.3 V +/- 5%; RS-232 requires 5 V external power supply
CURRENT CONSUMPTION	RF field on: 120 mA typically + 16 mA (BT) / Sleep: 500 µA typ. / Cyclic Operation: TBD
TEMPERATURE RANGE	Desktop, Operating:-25 °C up to +70 °C (-13 °F up to +158 °F) Desktop, Storage:-45 °C up to +75 °C (-49 °F up to +167 °F) PCB, Operating:-25 °C up to +80 °C (-13 °F up to +176 °F) PCB, Storage:-45 °C up to +85 °C (-49 °F up to +185 °F)
RELATIVE HUMIDITY	5% to 95% non-condensing
READ/WRITE DISTANCE	LF and HF: Up to 100 mm / 4 inch, depending on environment and transponder BT: up to several meters/feet (configurable, up to +8 dBm power)
OPERATING MODES (USB)	USB keyboard emulation – USB virtual COM port – CCID / PC/SC 2.01
BLUETOOTH LOW ENERGY	Bluetooth V4.1, software upgradable to V4.2; easy to integrate in reader App with commands, optional BGAPI protocol; Standards as GAP, SM, L2CAP, ATT; predefined GATT structure; up to 8 connections; AES128 support
MTBF	500,000 hours
WEIGHT	PCB approx. 13 g / 0.46 oz (no cable) Desktop approx. 118 g / 4.17 oz (with cable)
SUPPORTED TRANSPONDERS (STANDARD) 13.56 MHZ	ISO14443A: LEGIC Advant1, MIFARE Classic EV12, MIFARE Classic, MIFARE Mini, MIFARE DESFire EV1, MIFARE DESFire EV22, MIFARE DESFire Light3, MIFARE Plus S, X, MIFARE Pro X4, MIFARE Smart MX4, MIFARE Ultralight, MIFARE Ultralight C, MIFARE Ultralight EV1, NTAG2xx, PayPass4, SLE44R35, SLE66Rxx (my-d move)4, Topaz ISO14443B: Calypso4, Calypso Innovatron protocol4, CEPAS4, HID iCLASS1, Moneo4, Pico Pass5, SRI4K, SRIX4K, SRI512, SRT512 ISO18092 ECMA-340: NFC Forum Tag 1-5, NFC Peer-to-Peer, Sony FeliCa6, NFC Active and passive communication mode ISO15693: EM4x334, EM4x354, HID iCLASS1, HID iCLASS SE/SR1, ICODE SLI, LEGIC Advant1, M24LR16/64, MB89R118/119, SRF55Vxx (my-d vicinity)4, Tag-it, PicoPass5
SUPPORTED TRANSPONDERS (STANDARD) 125 KHZ	AWID, Cardax, CASI-RUSCO, Deister8, EM4100, 4102, 42009, EM4050, 4150, 4450, 4550, EM430510, FDX-B10, EM410510, HITAG 111, HITAG 211, HITAG S11, ICT10, IDTECK, Isonas10, Keri, Miro, Nedap8, PAC10, Pyramid, Q5, T5557, T5567, T5577, TIRIS/HDX10, TITAN (EM4050), UNIQUE, ZODIAC
SUPPORTED TRANSPONDERS (OPTION P)	All Standard Transponders, Cotag, G-Prox8, HID DuoProx II, HID ISO Prox II, HID Micro Prox, HID ProxKey III, HID Prox, HID Prox II, Indala, ioProx, Nexwatch
SUPPORTED TRANSPONDERS (OPTION PI)	Requires TWN4 SIO Card, All Standard Transponders, All Option P Transponders, HID iCLASS, HID iCLASS SE/SR/Elite, HID iCLASS SEOS (CSN & Facility Code/PAC)[12]
OS SUPPORT	Windows XP, Vista, Embedded CE[10], 7 (32-/64-bit), 8, 8.1, 10, Linux, Android[10], iOS10, MAC OS X[10]
PERIPHERAL INTERFACES	USB, RS-232, TTL serial (logic level 3.3 V, CMOS, 5 V tolerant), I²C, 4 GPIOs, Clock/Data, Wiegand, Bluetooth Low Energy (BLE)

HOUSING	ABS UL94-VO
DIMENSIONS (L X W X H)	115 mmx95 mmx 35 mm
POWER SUPPLY	External power supply 5 V or Internal Power over Ethernet
CURRENT CONSUMPTION	Max. 3 A depending on external load
TEMPERATURE RANGE	Operating: 0°C to +45°C (32°F to 113°F) Storage:-4 0°C up to +85°C (-40°F up to + 185°F)
RELATIVE HUMIDITY	10% to 90% non-condensing
NETWORK	10 Mbit/s, 100 Mbit/s, 1000 Mbit/s converter to Host or converter to Device 500 Mbit/s between Host & Device, upgradable to 1.2Gbits/s at additional cost Host: DHCP, Static IP, Device: DHCP, Static IP
MODES OF OPERATION	TCP Server: Device is connected by a TCP client. TCP Client: Device connects automatically to a specified TCP server. Connection may be triggered by incoming flow of data on either USB port. For additional security the connection can be optionally SSL encrypted. Data can be sent via UDP or HTTPS via JSON.
LAN COMMUNICATION PROTOCOLS	TCP, UDP, HTTP, HTTPS, IPV4, DHCP, SSL/TSL 1.2, Syslog
USB	Two USB 3.0 Host ports Maximum current: 1.6 A, shared between the two USB ports Supported devices: Elatec TWN3 or TWN4 readers/writers, many magnetic stripe readers, many optical bar code readers and PIN pads via HID keyboard or CDC
OPTICALLY ISOLATED VO	2 optically isolated outputs and one optically isolated input traditionally used to support Foreign Device Interface or Internet of Things
CONNECTORS	Ethernet: 2 x R J45, 10/100/1000Base T. Host connector supports PoE USB: 2 x USB-A receptacle 8 pin connector for optically isolated signals Power: For plug 5.5 mm/2.1 mm
LED INDICATORS	4 LEDs which use multi-color to indicate Power, Ready, Busy and Status
MEMORY	RAM: 2 Gb Flash: 8 GB SDHC Expansion: Up to 2TB
MTBF	500,000 hours
WEIGHT	Approx. 270 g
CERTIFICATIONS	RoHS-11 compliant, CE, FCC1, IC1
ORDER CODE(S)	TC3K-BT5EU: TCP3 Kit with 0.5 m patch cable (R J45) and power supply EU TC3K-BT5US: TCP3 Kit with 0.5 m patch cable (RJ45) and power supply US TC3K-BT5AUS: TCP3 Kit with 0.5 m patch cable (RJ45) and power supply AUS TC3K-BT5UK: TCP3 Kit with 0.5 m patch cable (RJ45) and power supply UK TC3K-BT5JP: TCP3 Kit with 0.5 m patch cable (RJ45) and power supply JP TC3K-BT5E1: TCP3 Kit with 0.5 m patch cable (R J45) and Power over Ethernet
ACCESSORIES	Prototype harness for optical 1/0

For more information, contact an Application Specialist:

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