

BENCH TEST

TRENDnet Industrial Switch Helps Networks Go With the Flow

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TODAY'S ELECTRONIC NETWORKS, whether they are designed and utilized for CCTV, access control, voice over Internet or some other network function, rely on several key components to complete their system designs. At the forefront of these systems is the network switch. This device is essential for a number of vital functions, from providing a connection point for cabling to allowing remote management of data flow and access. Increasingly the network switch is installed in locations that can best be described as "less than friendly" to electronics. This review covers a switch that is designed to roll with the punches.

TRENDnet has been involved in the electronics world since 1990 and was founded in Torrance, Calif. The company has been building network solutions for the consumer, commercial and industrial markets, and today supplies many different solutions for its markets. TRENDnet has introduced a new industrial-grade hardened network switch that promises to become a "go-to" component for installers when they have network locations that don't have the best environmental conditions.

Construction

The TI-PG1284i network switch is constructed with a hardened metal casing and about the size of a hardback novel. The unit has a solid feel to it, shows good construction and has an IP30-rated enclosure that protects the internal components from external dirt and dust intrusion. The unit is not immune to liquids so mounting it exposed outdoors is out of the question! The switch is designed for harsh environments and can withstand temperatures from -40° to 75° C / -40° to 167° F. The switch has 12 network ports and one RS-232 port on the front panel. Of those 12 network ports eight are gigabit RJ-45 connections and four are GB SFP ports. The top of the unit has connections for the external power supplies (both primary and redundant) and the external alarm. There are also addressable DIP switches that allow the end user to customize the notification alarms from the switch for every port and power connection. There is also a grounding terminal on the top of the case to provide greater protection from static shocks.

The TI-PG1284i relies on an external power source of 48VDC; the input voltage has a range of 48 to 57VDC with a rat-

ing of 240+ watts. This voltage can be supplied from a master power source or from a standalone unit. For our testing, we were provided a complementary component power supply, Model TI-S24048, to provide the required input voltage. This unit, just like the switch, is designed to mount to a DIN rail to provide a secured installation. The electrical wiring for the power unit connects to a Phoenix connector that allows the unit to be easily disconnected from its 120VAC power source should servicing be required.

Features

The TI-PG1284i can supply up to 30W of PoE/PoE+ power for its network ports. The power to each of these ports can be turned on and off via the web-based graphical user interface; this allows the user to remotely reset a device, which can be very effective for troubleshooting or refreshing field devices. The inclusion of four SFP ports allows the switch to be connected to different devices via fiber-optic connections. This can allow the switch to be used as a hub or repeater for a fiber network; this can be very handy when there are different connection requirements for a network's construction. The inclusion of alarm outputs for each network port (as well as the power supply) provides an alert to the user that there is a system problem that requires immediate attention.

The switch is constructed to resist shock and vibration damage and has been rated for durability by the International Electrotechnical Commission (IEC). It also has a freefall rating which is one I have a hard time understanding since the unit is designed to be firmly mounted to a DIN rail! The TI-PG1284i is also rated by the IEC to resist electrostatic discharges and electromagnetic interference. This makes the unit a perfect fit for installation in a congested environment where there might be heavy electrical interferences.

Setup and Testing

Upon unpacking the contents from the box, I found the unit is supplied with a six-foot RJ-45 to RS-232 cable, a quick installa-



TRENDnet TI-PG1284i

TRENDnet TI-PG1284i

SPECS

- ◆ Network hardened switch
- ◆ Designed for environmentally challenging installations

PROS

- ◆ Easy to install
- ◆ Provides PoE to associated network equipment
- ◆ No proprietary software required to be installed

CONS

- ◆ Separate power supply required
- ◆ Specialized mount bracket

tion guide, and a CD containing the full product manual and the quick reference guide. For my examination and testing I performed a basic installation utilizing the switch, power supply, computer and PoE network camera. I used a fixed dome IP camera to test the PoE port switching that allowed me to switch the camera on and off as needed. As noted, having the ability to reset a device remotely is a wonderful thing — think of the time and effort that can be saved by being able to remote in to the switch and perform this reset. Compare this to grabbing your eight-foot ladder, slugging it through a back hallway and climbing up to a field node just to unplug a camera or other network device. This feature is worth its weight in gold to me.

The embedded GUI of the TI-PG1284i allows for many system settings within the network. While my networking experience is fairly extensive and has been put to the test many times, I must confess that I was not completely familiar with all of the arcane system settings of which this device is capable, according to the manual. In addition to the web-based GUI for programming and control of the TI-PG1284i, the unit can be controlled via RS-232 commands from your computer for those “old-school” system administrators. While I am not one who is well versed in command line interface (CLI) commands, I understand its usefulness for network professionals. Again, this switch provides the user with a plethora of options and protections.



DIP switch configuration of the TI-PG1284i’s alarm outputs (left) makes setting up failure notification a breeze. The separate power supply (right) allows for redundant power where needed.

Conclusions

The TI-PG1284i is a robust switch that will perform well in any system’s network. Its size, design and durability makes it a great unit for installation in varied environments, from a small field node in a hazardous location to a network closet with many switches configured together. The TI-PG1284i will make a welcome addition to any installer’s repertoire.

VERDICT	
FEATURES	★★★★★
CONSTRUCTION	★★★★★
SETUP	★★★★☆
PERFORMANCE	★★★★★
OVERALL	★★★★★

Yale Keypad Lock Is One to Keep in Stock

By Robert D. Grossman - rdgrossman@tech-answers.com

WE HAVE TESTED AND REVIEWED keypad access locks in the past, including models from Schlage and Kwikset, most recently the Kwikset SmartCode 916 Touchscreen Deadbolt (securitysales.com/kwikset_deadbolt_locks_reliable), and are big fans. After looking at promotional material for the Yale nexTouch keypad access lock, we asked for a test model but were really expecting a product that was functionally similar to the Kwikset 916. Well, they both have touchscreens (and are available with pushbutton keypads as well) and unlock doors, but they are otherwise pretty different. The question of which would work best for you really depends on your application.

The nexTouch lock is available in three versions: standalone, Data-on-Card and Z-Wave/ZigBee. The standalone version is the base model, and while any version can be ordered from Yale, Data-on-Card, ZigBee or Z-Wave functionality can be added by installing a color-coded plug-in module. This allows the lock to be upgraded as the user’s application and needs change. We tested the Z-Wave version and cannot comment on the Data-on-Card version for this review as we did not test it.

Construction

The nexTouch is a solidly built, as befits its ANSI/BHMA Grade 1 certification. This grading system, developed for the American Nation Standards Institute (ANSI) by the Builder’s Hardware Manufacturers Association (BHMA) ranges from 1 (the highest grade) to 3, factoring in longevity and durability. Grade 1 is usually used for commercial applications and is tested to 1 million opening and closing cycles. It is also able to withstand five strikes of 75 pounds of force. Clearly solidly built, the nexTouch is intended for commercial applications, and it shows.

There are a number of configurations available, including the aforementioned choice of touchscreen or pushbutton as well as the underlying technology. There are three different lever designs, including a flat lever and two types of curved levers. A lock cylinder override is available, and a number of Yale interchangeable cores can be used. There are also four finishes available, including bright brass, satin bronze, satin chrome-plated (our test model) and flat black powder coat. There are even kits to adapt other manufacturers’ cores to fit this lock; it is hard to imagine more flexibility in construction.

We did not install the lock on a door, as it came on a “mock



Yale nexTouch Keypad Access Lock

Yale nexTouch Keypad Lock

SPECS

- ◆ Touchscreen and Z-Wave/ZigBee-controlled access lock
- ◆ Field upgradable feature set
- ◆ Commercial applications for access control

PROS

- ◆ Keyless entry with easy installation and setup
- ◆ Voice-assisted programming in three languages
- ◆ Z-Wave, ZigBee and Data-on-Card technology available

CONS

- ◆ None significant

door” for testing purposes. Interestingly, it was installed in the test rig with the latchbolt backwards; perhaps this was a test to see if we’d notice. We did take the unit apart and put it back together again, and the operation was constant with our experiences installing other brand locks.

Features

The nexTouch is really an access control system for smaller facilities, and is designed for a large number of users and a “jack of all trades” maintenance person. Think apartment building or multifamily residences, small businesses or small office buildings. The standalone unit handles 500 user codes and each code can be four-eight digits. There are a number of features that support these applications, and we tested as many of them as we could.

The first feature that really jumps out is the voice guidance. It walks you through all of the programming in your choice of three languages, confirms operations and allows a maintenance person or administrator to easily change settings without referring to the manual (which is really just a poster). A pleasant chime confirms operations, letting you know when the door is locked and unlocked. Certain modes are annunciated, like “Privacy Mode,” which allows you to lock out the keypad from the inside. To do this you need to install the optional door position switch and associated magnet, which allows the lock to know when the door is closed. Opening the door automatically disables the privacy mode.

You can also set the lock to unlock at the first valid keypad entry and relock either manually or after a preset period (configurable from 1-180 seconds). Relocking manually can require a valid PIN code or one-touch locking can be enabled that allows a simple touch of the keypad to relock the door. There’s also a keypad lock-out feature that deters tampering by disabling the keypad for a default period of 180 seconds after five successive wrong code entries.

Powering the lock is also carefully thought out. The unit is battery powered with the four included AA batteries, or can be outfitted with a remote power source through an electronic pass-through hinge. If the internal batteries are used and they fail, two contacts on the front of the lock allow you to press a 9V battery up to the lock that will provide enough power to enter an access code and open the door to change the batteries. A belt and suspenders, indeed!

Setup

As with other locks we have seen, the installation and operation manual is a poster and it has everything you need. Once installed, inserting the batteries provides you with a voice prompt (“Welcome to Yale”) and touching the screen prompts you through entering the master PIN code and subsequent user codes. Visual and audible prompts confirm almost all actions, and the programming is very simple.

Testing

We went through the poster and tested each feature with no issues. We liked the door position switch and privacy mode and wish other locks had that feature. The keypad is extremely sensitive and responsive, shows up well in direct sunlight, and the audible confirmation was a nice touch. There are two volume settings for audio, and it can be disabled as well if you find it annoying over time.



The nexTouch’s plug-in modules (left, above batteries) make adding functionality to the base lock simple. A magnetic door position switch above the latchbolt (right) disables privacy mode when the door is opened.

We also tested Z-Wave functionality using a SmartThings hub. We had to try a few times; that isn’t uncommon with Z-Wave devices and the nature of home automation networks. Once set up, the lock worked flawlessly, locking and unlocking with about 3 seconds’ latency. We have other Z-Wave locks in our test setup, and the speed in which the Yale lock responded was consistent with our experiences. We did notice that the SmartThings application showed the lock as locked about 5 seconds before it had relocked itself, so there may be some software or integration issues. This did not impact operation, and reporting on home automation applications is not universally instantaneous. We did not test the ZigBee version, although we can’t imagine that it would be different than the Z-Wave functionality and performance.

Conclusions

If you are looking for an attractive lock for home use, this may not be it. It is definitely a commercial design and may be out of place in residential applications. That being said, for the intended applications, it is hard to imagine a better implementation and feature set. We gave a perfect rating to the similar Kwikset product, and we give the Yale lock the same high marks.

That is not to say the products are the same; each has different strengths and we did not take off points because of differentiating features. However, we think it is safe to say that, no matter what the application, there’s a perfect fit for you. SSI

VERDICT	
FEATURES	★★★★★
CONSTRUCTION	★★★★★
SETUP	★★★★★
PERFORMANCE	★★★★★
OVERALL	★★★★★

Products are tested and reviewed by R. Grossman and Associates Inc., an independent consulting firm specializing in electronic security products and projects. For more information, visit www.tech-answers.com.

