



Structured Cabling Advancements - Punchdown to Toolless

DIGISOL SYSTEMS LTD



This document details common Structured Cabling components, paying particular attention to the latest advancement in this field - the toolless technology. Business benefits, as well as critical strategic considerations, are discussed with the same in context.

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Introduction

Today, all organizations inarguably see the need to not only "go digital" but to also "grow digital". This imminent change of approach pushed by the latest advancements in technology also places a significant responsibility on the underlying communications infrastructure that now needs to step up and support all business needs for voice, data and video on-the-go.

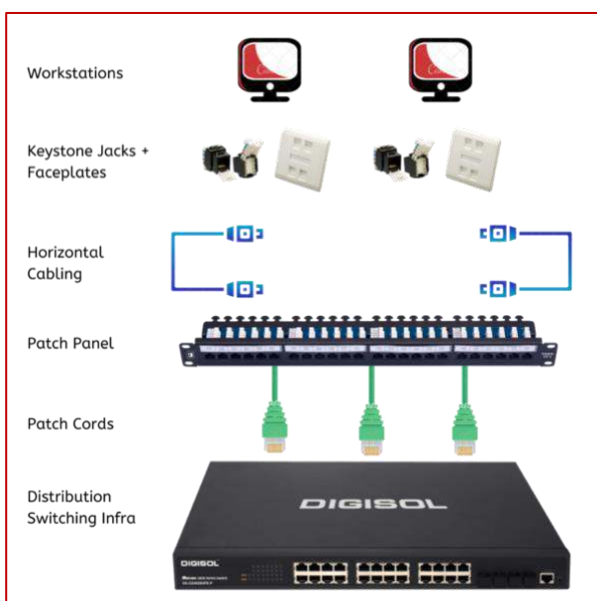
Over some time, structured cabling has solved the problem of realizing performance goals and systemizing ROI from cabling & support infrastructure investments in hugely successful ways. One of the more prominent advancements of late, in the field of structured cabling, not only reduces time-to-go-live but also improves how accurately the job gets done and at a lower cost.

Structured Cabling Components

Any structured cabling system broadly offers below components to build and manage ingress, internal and egress cabling - be it copper or fiber.

- Faceplates & Keystone jacks
- Patch Panels
- Patch Cords
- Solid Cables

SCS Sample Schematic



Aesthetically enclosed within your office furniture and civil infrastructure, keystone jacks combined with faceplates connect the workstations to patch panels using horizontal ethernet cabling.

Patch panels are usually static switchboard components enclosed in a telecom rack or closet and these allow for easy change management at the backend without any significant alterations to switching links which will warrant changes to network documentation.

The whole point of a structured cabling system is to make it easier for you to use and operate your existing cabling infrastructure, ensuring ROI in terms of both time, money and performance.



SCS Business Benefits

- Protects high-cost cabling investments and resultant performance benefits
- Assures standard documentation & deployment
- Supports accelerated troubleshooting of faults
- Makes it massively more comfortable to manage change management - move, addition or changes
- Ensures uniform implementation across vast project maps
- Pushes for maximum ROI - low downtime and management costs in the medium-to-long run

SCS Standardization

ANSI, in close step with TIA/ EIA, ISO/ IEC, CENELEC (Europe) and BICSI provides thought leadership and standardization across the cabling industry. It not only established and propagates standardization but also promotes performance grading and maximum inter-vendor compatibility.

SCS Performance & Reliability

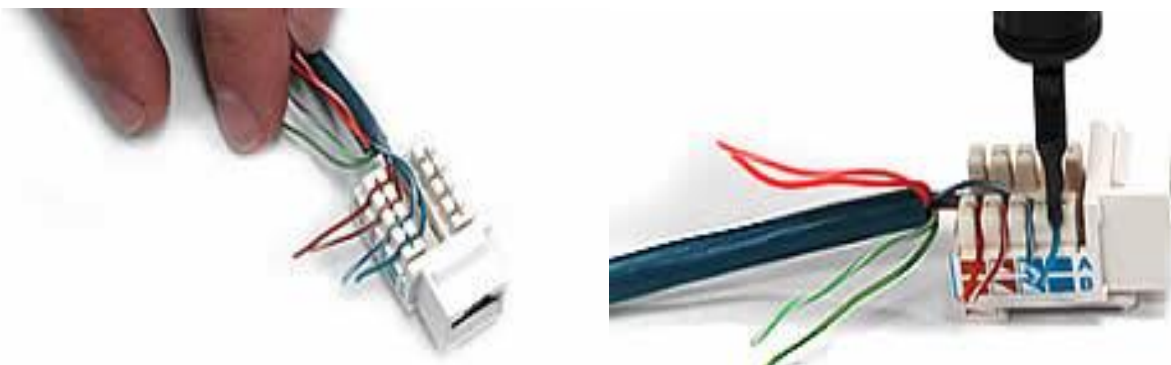
A long-term investment such as structured cabling comes with strong organizational expectations around reliability and performance. Using the right tools and technology to achieve these goals is of paramount importance. One of the setup variables that have a significant say in the overall performance & reliability scores is the cable termination on the faceplates (keystone jacks) at one end and the patch panel on the other.

The traditional way uses a krone punch down tool² that helps you do this manually.



It has always worked perfectly for 110-type patch panel and keystone jack installations so far. It involves using this hand tool to "impact punch" the ethernet cable wires into the IDC (Insulation Displacement Connectors) on the punch down blocks, patch panels, and keystone jacks.

Traditional Punch Down Technique¹





Not much can go wrong with a manual process that pushes a solid copper wire between metal blades on the connection block, while also cutting off the excess wire in the process.

Yes, but barring two immensely crucial considerations:

1. Accuracy
2. Efficiency

Larger-sized and mission-critical projects demand not only faster setup times but also water-tight accuracy - both of which sound like mutually exclusive goals for starters.

Enter Toolless Technology

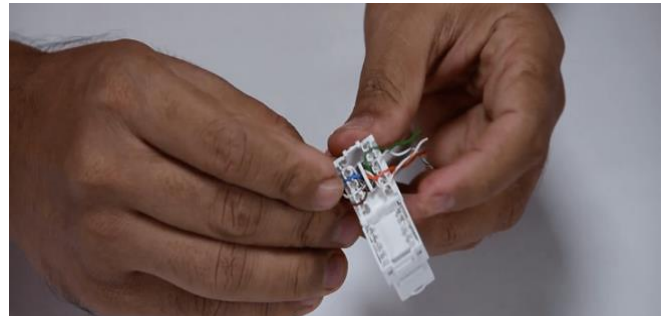
Toolless technology ensures the following key benefits:

- Massively reduced time-to-go-live.
- Exponentially reduces the scope for manual errors - Accurate installations not only mean higher performance benefits but also reduced downtime probability.
- Focus more on higher-level project deliverables as opposed to building the underlying data infrastructure. This benefit can be massively useful in medium to large scale projects involving multiple racks, closets, rooms or buildings.

Tool-less Technique

A simple 3-step process removes the need for punch down tools and manual effort.

Step 1: Arrange opened ethernet wires as per color code guide inside.



Step 2: Cut off unwanted cable protrusions.



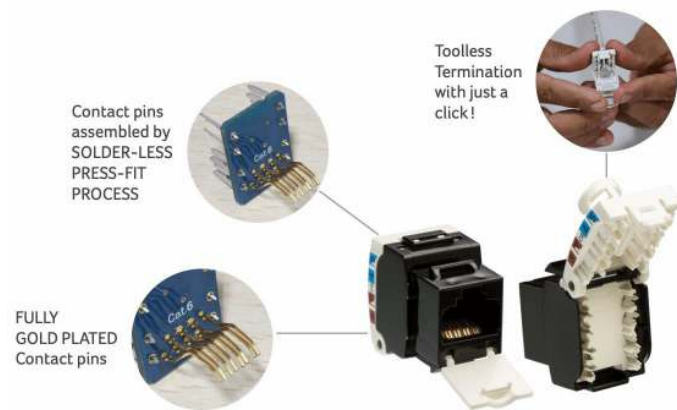
Step 3: Press to close. No punchdown tool is required.



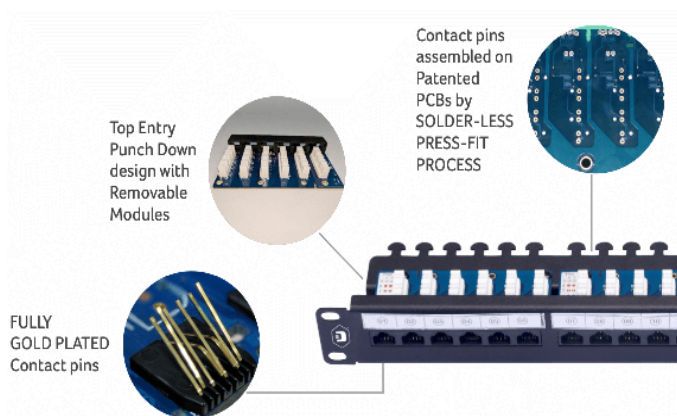
DIGISOL's Patented Tool-less SCS

Digisol's high-performance ConvergeX series is aimed to catalyze the digital growth ambitions of your organization by offering premium structured cabling components that will enhance performance and transform the delivery capabilities of your infrastructure for voice, video and data traffic.

DIGISOL Solderless, Tool-less Keystone Jack



DIGISOL Solderless Patch Panel





Why Tool-less?

- Simplified mass deployment - simplicity ensures you do it fast and do it right, more often than not.
- Reduced Time-to-deploy, do MORE in LESS time. We are not merely talking single rack deployments but projects, where time saved, is time earned.
- Reliable terminations - Reduced scope for manual punching errors. A quick job means nothing if it does not provide a bedrock of performance for business profitability.
- Extremely stable transmission performance - exceeds TIA specified performance characteristics including ANEXT, NEXT, FEXT, Insertion & Return Losses, and more. It means you will get performance every single time you invest in a Digisol Tool-less SCS.
- Wide range of applicability - Suits practically any installation configuration for faceplates, patch panel or telco closet applications.
- Last but not least, there would be no need to invest in a punch down tool to crimp the keystones since the same can be affected by bare hands with one-click of the keystone.

Ultimately structured cabling is only the vehicle, and being able to get it done better and faster will let you spend more time building your value systems on top of this rock-solid infrastructure.

Key Contextual Considerations

- What is the worth of your current SCS investment and its ROI?
- Are you looking for a zero-risk upgrade, while safeguarding existing investment ROI?
- Are you planning to expand, move or consolidate business facilities anytime in the next 3 to 6-month time frame?
- How are you anticipating planned technological requirements (hardware, software, processes, facilities) in the next 3-6 months that may place a load on existing data infrastructure?
- Are you planning to execute SCS projects in-house or outsourced?
- Is quality going to be a vital ingredient of these projects?
- Do you expect these SCS projects to be time-sensitive?
- Is ease of SCS implementation a must-have for your setup or that of your clients?
- Are you looking to partner with reliable, legacy, core-product companies that stand behind rock-solid products with high-quality support?
- Lastly and more importantly, are you willing to ride the technology wave, giving your firm an unfair competitive advantage in this fast-moving digital world?

Summary

High-performance SCS solutions are evolving continually to provide maximum performance and ROI for stakeholders. Tool-less technology offers a great option in making SCS deployments easier, better and faster. Through bringing you state-of-the-art technology and advancements, Digisol aspires to become your partner of choice as you seek maximum traction from IT investments towards organizational success.

References

1. <https://www.cableorganizer.com/learning-center/how-to/how-to-wire-keystone-jack.htm>
2. <http://www.fiber-optic-solutions.com/use-punch-down-tool.html>