



## 3M™ High Density Cross-Connect Modules STG2000 and STR Series

The 3M™ High Density Cross-Connect Modules STG2000 and STR Series are IDC copper cross-connects that can be used in a wide variety of network applications using copper (twisted pair) cable at all indoor and outdoor cross-connect and interconnectivity points of the copper wire line portion of voice and data, fixed and mobile networks.

The STG2000 and STR modules feature 3M insulation displacement contacts (IDC), a technology which offers reliable performance from mechanical wire retention and multiple re-terminations, environmental protection to gas-tight connection. The modules can connect solid copper conductors in a range of diameters from 26 (0.4 mm) to 20 AWG (0.8 mm) with a maximum insulation sheath of 15 AWG (1.5 mm)

### A Full Range for Different Applications

The STG2000 modules offer three different types of IDC circuits, all Cat. 5 rated as per EIA/TIA 568B.

The 3M™ Connection Module STG2 U2 provides a permanent connection between the cable and jumper sides and a parallel access contact for line monitoring with a test cord. This module can be typically used on the equipment or permanent cabling side of frame distributors.

The 3M™ Disconnection Module STG2 C2 features a normally closed contact that provides a disconnection point between the cable and jumper sides by insertion of a disconnection plug as well as a “look both ways” test point for line measurement and monitoring. The disconnection module can typically be used in the subscriber or network side of frame distributors or cross-connect fields where isolating the line for disconnection and test purposes is necessary.

The 3M™ Switching Module (“normally opened”) STG2 O2 provides a connection that can only be made by insertion of a test cord, patch cord or a protector. It is typically used as a flexible connection point with patch cords or a safety connection point which allows isolation of the line when the protector is removed.

### Built for High Speed

In the critical NEXT (near-end cross-talk) measurement, the STG2000 module typically exceeds -52 dB (decibels) at 30MHz. This equates to high bandwidth now, and reserve bandwidth for future upgrades. The STG2000 module can handle VDSL2 bit rates, enabling service providers to support their customer requirements for high speed applications and quality of service.



3M™ Cross-Connect STG2000 in a 100-pair block configuration



3M™ Connection Module STG2 U2



3M™ Disconnection Module STG2 C2



3M™ Switching Module STG2 O2



The 3M™ Cross-Connect Modules STR are double-sided IDC cross-connects, offering a demarcation point with termination of incoming equipment cables at the rear and jumper wires at the front.

The 3M™ Cross-Connect Modules STR M feature a double (bifurcated) IDC disconnection contact at the front, making it compatible, for example, with cut-over replacement of older by newer generation equipment.

## Designed for Space Optimization

The 3M™ Cross-Connect Modules STR D are double high-density modules featuring 16 to 20 pairs in the space of 8- or 10-pair 3M™ Cross-Connect Modules STG modules.

With 16 or 20 pairs in a 0.63" (16mm) pitch, the STR D module requires much less space than conventional cross-connects. The extraordinary demand of xDSL has accelerated the need for higher density equipment in central offices and the confined spaces of remote terminals making the density of copper distribution frames a critical issue for service providers.

## Over-voltage and Over-current Protection of Equipment

A wide range of single-pair or multi-pair protection products are available in the STG2000 and STR product lines.

Lightning is not the only potential cause of damage to network equipment. Direct or indirect contact between power and telecommunications cables, known as power cross, can also pose a threat to equipment and personal safety.

There are basic differences between 3-point and 5-point protection circuits.

## 3-Point Protection

STG2000 and STR modules can be protected with a heavy-duty 3-electrode / pole gas discharge tube also featuring a fail-safe device. 3-point protectors handle large voltage spikes commonly generated by lightning surges and in case of lasting surge, the fail-safe device will ground the voltage to earth.

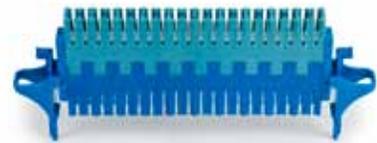
3-point protection solutions for the STG2000 modules are available in multi-pair protection magazines, typically 8 or 10 pairs, or single-pair protector modules. For the high density STR D module, a double gas tube protector module will provide overvoltage protection to 2 pairs simultaneously while preserving the high density.

## 5-Point Protection

STG2000 disconnection and switching modules can also be protected with single pair 5-point protectors that combine a heavy-duty 3-electrode / pole gas discharge tube (with a fail-safe device) together with two series elements, that limit the current by increasing their resistance. Unlike the majority of protectors which are destroyed by the impact of a power cross fault, the STG2000 protectors restore themselves immediately to normal operation once the fault is corrected. This feature is achieved by careful selection of the protective elements used and greatly limits the need for maintenance. For 5-point protection (components are in the signal path) the STG2000 switching modules are strongly recommended since after the protection plug is removed the contact in the module is open and possible disturbances cannot enter the network beyond that point.



3M™ Cross-Connect Modules STR D



3M™ Cross-Connect Modules STR M



3M™ High Density Cross-Connect Module STG2 100-pair block with single pair protectors



3M™ 10-pair Protection Magazine

## 3M™ High Density Cross-Connect Modules STG2000 and STR Series

Features	Benefits
Innovative design - quiet front / embedded IDC contacts in plastic casing	Non-protruding contacts offer better protection and a longer life cycle May prevent accidental contact or disconnection
Cat. 5 as a standard (STG2000 modules)	The STG2000 modules can handle VDSL2 bit rates and beyond
Cable with single wire conductors from 26 AWG (0.4 mm) to 20 AWG (0.8 mm) on cable and jumper sides. Multiple re-terminations (as per Telcordia NWT 1195) T-connection possible with two wires in one slot	3M straight IDC technology offers outstanding mechanical, electrical, environmental connection performances
Very compact mounting pitch of 0.63 in. / 16 mm	Can be used in all applications where density is required (overcrowded MDFs, confined spaces of remote terminals or telecom closets in MDUs)
Specific disconnection area for testing, monitoring, disconnection or adding protection to each line	Keeps the integrity of the wire connection
Versatile mounting	Mounting on a metal back mount to affix on a wall, in an equipment rack or in enclosures
Integrated surge protection	Provides for provision of front over-voltage and over-current protection to equipment and staff while preserving the density

## Specifications

Mechanical			
Dimensions:	Height/Length	Width	Depth
8-pair block	126.2 mm / 4.968 in.	14.0 mm / 0.055 in.	50.1 mm / 1.972 in.
10-pair block	146.2 mm / 5.598 in.	14.0 mm / 0.055 in.	50.1 mm / 1.972 in.
Wire range IDC contacts – solid copper conductor	0.4 mm to 0.8 mm 26 AWG to 20 AWG T-connection / double jumpering possible with different wire gauges		
Wire re-terminations:	250 re-terminations of 24 AWG per Telcordia TR-NWT-001195		
Materials			
Plastics	Thermoplastic		
Contacts	Bronze, tin (Sn) plating		
Electrical			
Insulation resistance	> $1 \times 10^{10} \Omega$		
Contact resistance	< 10 m $\Omega$		
Dielectric strength	3000 V rms, 60 Hz AC		
High voltage surge	3000 V DC surge		
Transmission			
Insertion loss	< 0.01 dB to 2.2 MHz < 0.02 dB to 12 MHz < 0.03 dB to 30 MHz		
Return loss	> 50 dB to 2.2 MHz > 38 dB to 12 MHz > 30 dB to 30 MHz		
Crosstalk	> 73 dB to 2.2 MHz > 60 dB to 12 MHz > 53 dB to 30 MHz		
Environmental			
Telcordia TR-NWT-001195 – 3rd party tested	"Generic requirements for Insulation Displacement Connector (IDC) cross-connect terminal blocks"		
Operating temperature range	-10°C to 60°C		
Storage temperature range	-40°C to 90°C		
Flammability rating	UL 94 V-0 materials used		

RoHS: Compliant with EU RoHS Directive (2002/95/EC)\*

### 3M™ High Density Cross-Connect Modules STG2000 and STR Series

Model Number	Product Description	Stock Number	Minimum Order
C252800A	STG2 C2 8 disconnection module 8-pair	FQ100004669	20
C252818A	STG2 C2 10 disconnection module 10-pair	FQ100004750	20
C252819A	STG2 C2 10P disconnection module 10-pair for protection magazine	FQ100004768	20
C252820A	STG2 C2 10PU disconnection module 10-pair for single pair protector	FQ100004776	20
C252806A	STG2 U2 8 connection module 8-pair	FQ100004719	20
C252824A	STG2 U2 10 connection module 10-pair	FQ100004800	20
C252825A	STG2 U2 10P connection module 10-pair for protection magazine	FQ100004818	20
C252831A	STG2 O2 10P open connection module 10-pair for protection magazine	FQ100004867	20
C252832A	STG2 O2 10 PU open connection module 10-pair for single pair protector	FQ100004875	20
C220600A	STR D2 20-pair	FQ100028304	20
C220602A	STR D2 20-pair for front protection	FQ100029625	20
C220621A	STR D2 16-pair - ivory	FQ100029542	20
C226004A	STG back mount frame - 11-way/H55/P16 - 10-pair - set/2 pcs	FQ100074936	10
C232280A	STG back mount frame - 125-way/2meters/H55/P16 - 10-pair	FQ100004503	1
C232281A	STG back mount frame - 125-way/2meters/H55/P16 - 8-pair	FQ100004511	1
C220673B	STG2 label holder 8-pair	FQ100004057	20
C220674B	STG2 label holder 10-pair	FQ100004065	20
C222014B	STG2 / BRCP-SP WW 4-wire serial test cord with banana plugs	FQ100026845	5
MPA025DB	STG2 4-wire test probe with lugs 1.5m length	RE000972000	150
C222909A	STG2 SOR FC disconnection plug - Lot/100 - red	FQ100004156	10
C222925A	STG2 SOR PI unmarked identification caps (100/bag) - green	FQ100004230	10
C222924A	STG2 SOR PI unmarked identification caps (100/bag) - blue	FQ100004222	10
C234030A	SOR OC termination tool - 3M IDC	FQ100024824	10
C234037A	SOR OC PKS termination tool - 3M-QSA IDC	FQ100027447	10
C233726B	SOR CH protection magazine 10-pair without arresters	FQ100004537	20
C233728B	SOR CH protection magazine 10-pair without arresters with earth cord	FQ100004552	400
C233740B	SOR CH protection magazine 10-pair W/250V arresters	FQ100004578	20
C233741B	SOR CH protection magazine 10-pair W/350V arresters	FQ100004586	400
C231039A	3-pole 250V arrester with fail-safe for SOR CH protection magazine	FQ100027579	100
IA340500718	STG single pair protector module with 250V arrester SOR PU1C 250 with test point	IA340500718	100
IA340500726	STG single pair protector module with 250V arrester / PTCR SOR PU2C 250 with test point	IA340500726	100
IA340505873	STG single pair protector module with 230V arrester SOR PU1C 230 with test point	IA340505873	100
IA340505881	STG single pair protector module with 230V arrester / PTCR SOR PU2C 230 with test point	IA340505881	100
IA340513653	STG single pair protector module with 230V arrester / PTCR SOR PU7C 230	IA340513653	100
IA340513661	STG single pair protector module with 230V arrester SOR PU8C 230	IA340513661	100
IA340501534	STR D double pair protector module with 230V arrester SOR PU16C 230	IA340501534	100

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\*"RoHS Compliant 2002/95/EC" means that the product or part ("Product") does not contain any of the substances in excess of the maximum concentration values in EU Directive 2002/95/EC, as amended by Commission Decision 2005/618/EC, unless the substance is in an application that is exempt under EU RoHS. This information represents 3M's knowledge and belief, which may be based in whole or in part on information provided by third party suppliers to 3M.

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