

Certificate of Acceptance

PA05/06710

Supplier:
Passcomm Limited

Issue : 2
Valid From :

01/06/2018

Ruggedised Optical Fibre Tail Cable and Pre-terminated Break-out

Product Description

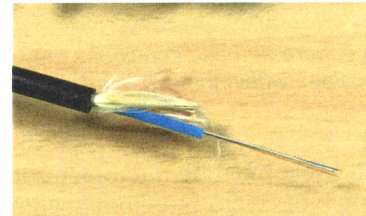
A ruggedised singlemode optical fibre tail cable for providing 'final mile' optical connectivity between hand-off points in Network Rail's high bandwidth optical network and end-user devices.

The cable has a polyethylene sheath, contains steel tape armouring, and is available in 4, 8, or 12 singlemode optical fibre variants.

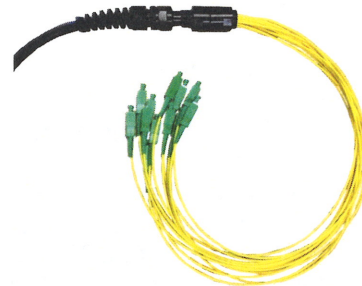
Pre-terminated 'Hydra' breakout assemblies using ruggedised fibre tail cable that remove the need for an optical distribution frame where space is restricted.

The 'Hydra' breakout assemblies will be supplied complete with factory-terminated optical connectors with at one or both ends or unterminated cable for splicing at joints.

Product Image



Ruggedised fibre tail cable



Hydra Breakout Assembly

Scope of Acceptance

Full Acceptance

Accepted for use on all Network Rail controlled infrastructure for optically connecting end-user devices to Network Rail's high-bandwidth optical fibre network.

Not accepted for indoor use where more than ten metres of the cable will intrude.

The sheath is not low-smoke, zero-halogen so the cable is not accepted for use in environments such as sub-surface stations or tunnels connected to them where smoke emission and/or toxic fumes during combustion might present a hazard to humans escaping fire.

Network Rail Acceptance Panel (NRAP) hereby authorises the product above for use and trial use on railway infrastructure for which Network Rail is the Infrastructure Manager.

Reviewed by:

Authorised by:

Usha Trivedi
Product Acceptance Coordinator

Dan Mandoc
Professional Head of Telecoms

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Specific Conditions

The following Conditions are specific to the approved product/s contained within this Certificate. These conditions must be adhered to in addition to the Network Rail General Conditions contained within the "General Terms and Conditions" section.

Failure to adhere to these conditions may result in the withdrawal or suspension of Acceptance of some, or all of the items contained within the accepted configuration.

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- 1) The cable must be manufactured to design P03211DJW with steel tape armouring.
- 2) Length of Hydra breakout assembly to be specified on order.
- 3) Cable in Hydra breakout assembly to be the ruggedised cable specified in this certificate.

User

- 1) The cable must not be installed unprotected on the ground surface and should be protected in accepted cable route products or by direct burial where appropriate.
- 2) The cable shall not be substituted for network optical fibre cables to PA05/01638 for supporting optical fibre network connectivity.
- 3) 4-, 8-, or 12-fibre variant to be specified in the purchase order.
- 4) Not suitable for use in 'section 12' environments
- 5) Variants terminated with SC/UPC connectors are restricted to use with Camlin auto-reconfigurable power supply equipment used in Signalling systems.

Product Configuration

System or Complete Assembly

Part No.	Description	Catalogue No.
FIB-04-7A1-LT-CST-PE-BK	4-fibre ruggedised optical fibre tail cable.	0006/169027
FIB-08-7A1-LT-CST-PE-BK	8-fibre ruggedised optical fibre tail cable.	0006/169028
FIB-12-7A1-LT-CST-PE-BK	12-fibre ruggedised optical fibre tail cable.	0006/169029
H-02-SP-TSA-7A1-LTA-XXX	2 Fibre Hydra cable breakout assembly on NR accepted tail cables fitted with SC/UPC connectors on one end and SC/APC connectors on the other	0006/169032
H-02-SP-SP-7A1-LTA-XXX	2 Fibre Hydra cable breakout assembly on NR accepted tail cables fitted with SC/UPC connectors on one end and SC/UPC connectors on the other	0006/169033
H-02-LP-TSA-7A1-LTA-XXX	2 Fibre Hydra cable breakout assembly on NR accepted tail cables fitted with SC/APC connectors on one end and LC/UPC connectors on the other	0006/169034
H-02-LP-LP-7A1-LTA-XXX	2 Fibre Hydra cable breakout assembly on NR accepted tail cables fitted with LC/UPC connectors on one end and LC/UPC connectors on the other	0006/169035
T-02-TSA-7A1-LTA-XXX	2 Fibre Hydra cable breakout assembly on NR accepted tail cables fitted with SC/APC connectors on one end with the other end unterminated	0006/169036
T-04-TSA-7A1-LTA-XXX	4 Fibre Hydra cable breakout assembly on NR accepted tail cables fitted with SC/APC connectors on one end with the other end unterminated	0006/169037
T-08-TSA-7A1-LTA-XXX	8 Fibre Hydra cable breakout assembly on NR accepted tail cables fitted with SC/APC connectors on one end with the other end unterminated	0006/169038

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Part No.	Description	Catalogue No.
T-12-TSA-7A1-LTA-XXX	12 Fibre Hydra cable breakout assembly on NR accepted tail cables fitted with SC/APC connectors on one end with the other end unterminated	0006/169039
Note	The construction of Hydra part numbers in the example H-02-LP-TSA-7A1-LTA-XXX is as follows: H: 'Hydra' or T unterminated tail 02: 2, 4, 8, or 12 optical fibres LP: LC/UPC connectors on first end TSA: SC/APC connectors on second end 7A1: Fibre type – G.657.A1 LTA: Loose tube armoured XXX: Length in metres NB: Connector codes: LP=LC/UPC; SP= SC/UPC; TSA=SC/APC	-

Assessed Documentation

Reference	Title	Doc. Rev.	Date
PTR 0360	Laboratory test report on attenuation coefficient, tensile strength, crush resistance, impact resistance, torsion, repeat bending, temperature cycling, and water penetration. All tests to IEC 60794-1-x and all tests passed.	1	16/01/2017
SP/FTN(D&D)/020	Response to SP/FTN(D&D)/020, issue 1: NR specification for pre-terminated optical fibre tail cable assemblies.	1	09/12/2016
P03211DJW	Data sheet for ruggedised optical fibre tail cable.	2	12/08/2016
-	Paragraph by paragraph compliance with SP/FTN(D&D)/020 – Pre-terminated Optical Fibre Cable Assemblies	1	06/04/2018
PDS 250-25	Ridgemount Boman Breakout Manifold data sheet.	B	-
250-4000-23	Ridgemount TDS Breakout Tube data sheet	A	16/05/2017
232615-3	BRE LSOH Test report on Ridgemount Breakout Tube	1	31/07/2007
-	Ridgemount ZHLS Material UL94 V0 data sheet	-	-
IEC60794-1-2	Macrobend Performance Test Results	A	16/02/2017
IEC60794-1-2	Cable Flexibility Performance Test Results	A	16/02/2017
IEC60794-1-2	Cable Manifold Crush Test Results	A	16/02/2017
IEC60794-1-2	Cable Impact Test Results	A	16/02/2017
IEC61300-2-1	Cable Manifold Vibration Test Results	A	16/02/2017
IEC61300-2-9	Cable Manifold Shock Test Results	A	16/02/2017

Certificate History

Issue	Date	Issue History
1	07/03/2016	First accepted for use
2	01/06/2018	Pre-terminated 'Hydra' breakout assemblies added.

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Contact Details

Supplier

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General Terms & Conditions

1) General

- 1) This certificate can only be amended by Network Rail Product Acceptance, the Professional Head or nominated delegate. Any alterations made by a other persons will invalidate the entire certificate.
- 2) Failure to abide by the requirements in this Certificate of Acceptance may invalidate the certificate, thereby restricting the right to operate the product and / or limiting the future supply and deployment of the product on the infrastructure.
- 3) Upon the review date this certificate and the product it relates to is invalid and not accepted for use. Manufacturers are to make an application for a review prior to the review date.

2) Manufacturer

The Manufacturer shall:

- 1) Ensure that all products supplied comply with the standards defined in the Acceptance Requirements or otherwise documented as part of the assessment, including meeting the reliability requirements included in the Acceptance Requirements and in any deed of warranty for the relevant certificate number.
- 2) Notify Network Rail Product Acceptance:
 - a. Within 48 hours, of any deficiencies affecting the quality, functionality or safety integrity of the product (including corrective action undertaken or proposed).
 - b. Of any intended change to the accepted product; changes include:
 - i. a change to the product configuration (to the actual product or its application);
 - ii. a variation to or addition of manufacturing locations or processes;
 - iii. a change in the name or ownership of the manufacturing company;
 - iv. any changes to the ability or intention to support with technical services, spares or repairs.
- 3) The Manufacturer shall provide Network Rail Product Acceptance or National Supply Chain (NSC) at least 12 (twelve) months notice of its intention to discontinue supply or to provide such notice as is reasonable if such discontinuance is outside its control and will offer the opportunity of a Last Time Buy to Network Rail together with date for last order placement and supply of the parts affected. The introduction of proposed alternative products shall be communicated to Network Rail Product Acceptance.
- 4) Provide further copies of operating and maintenance manuals to purchasers / users of the product as necessary (including certificates of conformance, calibration etc).
- 5) Provide further copies of training manuals and an appropriate level of training to purchasers or users of the product as necessary.
- 6) Where applicable, specialist technical support, repairs and servicing of the product shall be carried out by the Original Equipment Manufacturer (OEM) or authorised agent only.
- 7) Network Rail may request information from the manufacturer to prove product compliance with clauses 1 and 2 above and reserve the right to suspend and/or withdraw any application where information is not forthcoming within a reasonable timeframe.
- 8) In accordance with Network Rail's Quality Assurance Policy Statement 2011, where the specification and/or Product Acceptance Certificates specify quality assurance classifications (QA1 to QA5) for the products, the manufacturer shall comply with the specified level of quality assurance for each product and allow Network Rail access to carry out its quality assurance checks.
- 9) The manufacturer shall give Network Rail's representatives access at all reasonable times to its premises and allow them to inspect its quality systems and production methods and, if requested, to inspect, examine and test the products both during and after their manufacture and the materials being used in their manufacture.

3) Conditions of Use

Specifiers, installers, operators, maintainers, etc. using the product shall:

- 1) Comply with the certificate conditions. If a condition is not understood guidance must be sought from Network Rail Product Acceptance.
- 2) Check that the application of use complies with the relevant certificate's scope of acceptance.
- 3) Report any defect if it is a design or manufacturing fault likely to affect performance and/or the safe operation of the railway in writing to Network Rail Product Acceptance.
- 4) Inform Network Rail Product Acceptance in writing of a change to the product configuration (or to the actual product or its application).
- 5) Operate, maintain and service the product in accordance with Network Rail standards and Operation and Maintenance manuals as appropriate.
- 6) Be appropriately trained and authorised for the installation, maintenance and use of the product.
- 7) Only send products for repair or reconditioning to the Original Equipment Manufacturer (OEM) or authorised agent.
- 8) Users are to be aware that Product Acceptance is not a substitute for design approval.

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4) Compliance

Railways and Other Guided Systems (ROGS) Regulations

- 1) Where the product is to be used in areas where Network Rail is not the Infrastructure Manager (e.g. leased stations), the sponsor shall additionally obtain formal consent from the Infrastructure Manager for the locality where the equipment is to be installed. This may include a requirement for additional safety verification. The decision of that Infrastructure Manager is binding, and cannot be overridden by Network Rail except by the escalation processes established in the ROGS regulations
- 2) As required in Railway Group Standard GE/RT8270, at each use of this product the project or group responsible for installation and commissioning shall be required to demonstrate compatibility with:

- a. All rail vehicle types that have access rights over the area affected by the change
- b. Infrastructure managed by others
- c. Neighbours.

Railway Interoperability Regulations

- 3) For interoperable constituents of systems the project or group responsible for installation and commissioning shall be required to demonstrate compliance with the relevant Technical Specifications for Interoperability (TSI) where appropriate.
- 4) An authorisation from the national safety authority (i.e. the Railway Safety Directorate of the Office of Rail Regulation) is required before the equipment is to be used in revenue earning service.

5) Supply Chain Arrangements

- 1) Certificates of acceptance do not imply any particular quantity of supply nor any exclusivity of supply.
- 2) Products may be purchased by Network Rail or its agents, suppliers or contractors.
- 3) Manufacturers should note that it is not necessary to enter into any exclusive supply arrangements with resellers or other suppliers.