Tyco Electronics

FIST-WR2
Ordering guide

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Ordering Guide of the
Fiber-Optic Wall Mountable Rack (FIST-WR2)

This document provides assistance with the selection of wall mountable racks for use in FIST cable termination applications. It includes the following sections:

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1 Product description

The FIST Wall Mountable Rack, FIST-WR2, is an all-purpose metal indoor rack designed to accommodate the FIST generic shelf family (ETSI and 19").
It offers dust-proof, environmental and mechanical protection for the fiber management functions of splicing, patching and passive component integration.

FIST-WR2 is designed for indoor applications. A separate installer-friendly wall attachment frame is included in the kit.

Two rack sizes are available: 0.76 m and 1.0 m high.
The small size can accommodate 5 standard FIST shelves (125 mm high), the large size can accommodate 7 standard FIST shelves.
There is no facility to mount drums at the left or right side of the shelves. It is recommended to use horizontal patch cord modules for patch cord organization: FIST-GR2-HPM, FIST-GR2-HPS and FIST-GR2-POM.

The rack includes field-adaptive mounting profiles with ETSI (25 mm) pitch for shelf mounting (see section 3.3). They can be positioned at:
− 19" width (shelf symmetrically in rack)
− ETSI width (shelf symmetrically in rack)
− ETSI width (shelf asymmetrically in rack)

A cable attachment plate is provided in the rack right bottom. It can be repositioned in the field to the right center or top or to the left bottom/center/top. Different cable constructions can be managed in the rack: loose tube cable, IFC, break-out cable, modular cable …

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2 Ordering information

NOTE: When ordering a FIST-WR2, it is important to always select the required individual accessories in section 2.2. Refer to section 3.1 for detailed product description and pictures.

2.1 Order quantity / lead time

Products and accessories are grouped in three classes.
<u>Class A</u>   standard products, small MOQ
<u>Class B</u>   standard products, standard MOQ
<u>Class C</u>   special products, higher MOQ, longer lead times, due to the lead time of the specific components in those products

The class of a component or accessory provides additional information on:
<u>MOQ</u>   Minimum Order Quantity
<u>SPQ</u>   Standard Packaging Quantity

MOQ and SPQ are used to calculate the correct order quantity of the desired component and/or accessory:

Order quantity = MOQ + n x SPQ (n ≥ 0)

2.2 FIST wall-mountable rack

FIST-WR2-X

| 1 | 760 mm high, accommodates 5 std. shelves (125 mm high) |
| 2 | 1000 mm high, accommodates 7 std. shelves (125 mm high) |

Standard rack kit content
− Metal housing
− 2 front doors with swing handle and lock with key
− mounting profiles: field adaptive to 19" or ETSI width
− In top and bottom, left and right 3 plates with the break-outs listed underneath. (In total 12 cable entry plates with break-out ports):
  − 6 plates with 2xPG29 break-out ports (top)
  − 3 plates with 4xPG21 break-out ports (bottom right)
  − 3 plates with 6xPG16 break-out ports (bottom left)
  All plates have identical outer dimensions and fit in each top and bottom cut-out.
− 1 cable attachment plate with C-profile (no cable clamps)
− 1 wall attachment kit (including installation flyer)
− document holder in the door
− Color code: RAL 7035
− Dimensions: see section 3.2

2.3 FIST wall rack accessories

When ordering a FIST wall-mountable rack, it is **important to define** the **rack accessories needed**.
These accessories need to be ordered in addition to the FIST-WR2 to suit different applications. Refer to Section 3.4 for a complete product description and pictures.

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2.3.1 Cable entry plates

The standard FIST-WR2 includes cable feed-through plates (see section 2.1). Extra plates are available separately.

Name	Qty/Pk	Description
FIST-WR2-CEP-6PG16	1 pc	Cable entry plate with 6 break-out ports PG16
FIST-WR2-CEP-4PG21	1 pc	Cable entry plate with 4 break-out ports PG21
FIST-WR2-CEP-2PG29	1 pc	Cable entry plate with 2 break-out ports PG29
FIST-WR2-CEP-1PG42	1 pc	Cable entry plate with 1 break-out port PG42
FIST-GR2-CAP-300	1 pc	Cable attachment plate with C-profile (no cable clamps)

2.3.2 Cable termination and sealing kits

Loose tube cable:

Name	Qty/Pk	Description
FIST-WR2-CTK-LT1-8/12*	1 pc	Cable termination and sealing kit for 1 loose tube cable Ø 8-12 (PG16) (single cable clamp)
FIST-WR2-CTK-LT2-8/12*	1 pc	Cable termination and sealing kit for 2 loose tube cables Ø 8-12 (PG16) (double cable clamp)
FIST-WR2-CTK-LT3-8/12*	1 pc	Cable termination and sealing kit for 3 loose tube cables Ø 8-12 (PG16) (triple cable clamp)
FIST-WR2-CTK-LT1-12/16*	1 pc	Cable termination and sealing kit for 1 loose tube cable Ø 12-16 (PG21) (single cable clamp)
FIST-WR2-CTK-LT2-12/16*	1 pc	Cable termination and sealing kit for 2 loose tube cables Ø 12-16 (PG21) (double cable clamp)
FIST-WR2-CTK-LT1-16/22*	1 pc	Cable termination and sealing kit for 1 loose tube cable Ø 16-22 (PG29) (single cable clamp)
FIST-WR2-CTK-LT2-16/22*	1 pc	Cable termination and sealing kit for 2 loose tube cables Ø 16-22 (PG29) (double cable clamp)

(*)   Kits for loose tube cable include a cable clamp, cable sealing gland(s) and strength member fixations.

IFC (Intra-Facility Cable) or BOC (Break Out Cable):

Name	Qty/Pk	Description
FIST-WR2-CTK-IF1-6/14**	1 pc	Cable termination and sealing kit for 1 intra-facility or breakout cable (IFC or BOC) Ø 6-14 mm (PG16)
FIST-WR2-CTK-IF2-6/14**	1 pc	Cable termination and sealing kit for 2 intra-facility or breakout cables (IFC or BOC) Ø 6-14 mm (PG16)
FIST-WR2-CTK-IF3-6/14**	1 pc	Cable termination and sealing kit for 3 intra-facility or breakout cables (IFC or BOC) Ø 6-14 mm (PG16)
FIST-WR2-CTK-IF1-9/18**	1 pc	Cable termination and sealing kit for 1 intra-facility or breakout cable (IFC or BOC) Ø 9-18 mm (PG21)
FIST-WR2-CTK-IF2-9/18**	1 pc	Cable termination and sealing kit for 2 intra-facility or breakout cables (IFC or BOC) Ø 9-18 mm (PG21)
FIST-WR2-CTK-IF1-15/26**	1 pc	Cable termination and sealing kit for 1 intra-facility or breakout cable (IFC or BOC) Ø 15-26 mm (PG29)
FIST-WR2-CTK-IF2-15/26**	1 pc	Cable termination and sealing kit for 2 intra-facility or breakout cables (IFC or BOC) Ø 15-26 mm (PG29)

(**)   Cable termination kits for intra-facility or breakout cable (IFC or BOC) include 2 tie-wraps/cable, cable sealing glands and strength member fixations.

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Ribbon, central core cable, other…

Name	Qty/Pk	Description
FIST-GR-CTB100	1 pc	Cable termination kit for max. 2 loose tube/ribbon cables
FIST-GR-CTB100-CC	1 pc	Cable termination kit for max. 2 central core cables (single fiber or ribbon)
FIST-GB-GLD42-01	10 pc	Cable gland PG 42 (cable Ø 29-40 mm)

2.3.3 Patch cord and flex tube sealing kits

Name	Qty/Pk	Description
FIST-GB-PTS24-01	1 pc	Pigtail sealing gland PG29 –up to 24 pigtails (Ø 0-3.0 mm)
FIST-GB-PTS6X4-PG21-01	1 pc	Pigtail sealing gland PG21 –up to 6 pigtails (Ø 0-4.0 mm)
FIST-GB-GLD21-4x6MM	1 pc	Pigtail sealing gland PG21 –up to 4 pigtails (Ø 0-6.0 mm)
FIST-GB-GLD16-10-FLEX2	10 pc	Flex tube gland PG 16 for tube inside Ø of 10 mm
FIST-GB-GLD16-17-FLEX2	10 pc	Flex tube gland PG 16 for tube inside Ø of 17 mm

2.3.4 Wraparound pigtail protection

Name	Qty/Pk	Description
FIST-GB-PTS24-FLEXWRAP-01	1 set	Kit with fixation devices to hold the flexible wraparound protection tubing to the pigtail seal (FIST-GB-PTS24-01).
FIST-WAFLEX-23-10	10 m	Dual wall flexible wraparound tube (Ø 25 mm to fit a PG29)
FIST-WAFLEX-23-50	50 m	Dual wall flexible wraparound tube (Ø 25 mm to fit a PG29)
FIST-GB-PTS24-FLEXCLIP-10	10 pc	Kit with wall mountable clips to hold the flexible tube.

2.3.5 Pigtail and patch cord management

Name	Qty/Pk	Description
FIST-GR2-HPM-M	1 pc	Horizontal pigtail management module (ETSI)
FIST-GR2-HPM-I	1 pc	Horizontal pigtail management module (19")
FIST-GR2-HPS-M	1 pc	Horizontal pigtail storage module (ETSI)
FIST-GR2-HPS-I	1 pc	Horizontal pigtail storage module (19")
FIST-GR2-POM-M	1 pc	Horizontal pigtail orientation module (ETSI)
FIST-GR2-POM-I	1 pc	Horizontal pigtail orientation module (19")

2.3.6 Miscellaneous

Name	Qty/Pk	Description
FIST-GS-FLEX-10-50-S5027	50 m	Flexible tubing (inside Ø 10 mm)
FIST-GS-FLEX-17-10	10 m	Flexible tubing (inside Ø 17 mm)
FIST-GS-FLEX-17-50-S5027	50 m	Flexible tubing (inside Ø 17 mm)
FISTV-TW-NN-188	100 pc	TIE-WRAP 188 mm long (not re-openable)

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2.3.7 Shelves & trays

Select the required shelves (and trays) from the corresponding ordering guides:

Function	Ordering guide
Splicing Shelf	FIST-GSS2 or FIST-GSS3
Patching Shelf and Trays	FIST-GPS2 or FIST-GPS3/GPST-12
Splicing and Patching Shelf	FIST-GMS2
Splicing and Patching Shelf and Tray	FIST-GPS2 or FIST-GPS3/GPST-12

2.4 Tools

Name	Qty/Pk	Description
FACC-ALLEN-KEY-5-350	1 pc	Allen key, diameter 5 mm, length 350 mm for back-mounting of shelves in the rack
FACC-CAGE-NUT-TOOL	1 pc	Tool to install cage nuts in the rack.

3 Product guide

3.1 FIST-WR2 description

7N751832.JPG

The FIST-WR2 wall rack consists of:

Wall attachment kit
The metal frame has to be mounted against the wall. Afterwards, the rack will be lifted in this frame. The system is very installer-friendly.

7N751836.JPG

Two-doors sealed metal housing
The rack offers dust proof and mechanical protection.
It includes 2 doors for better access and minimum obstruction of the passage when the doors are open.

7N751847.JPG
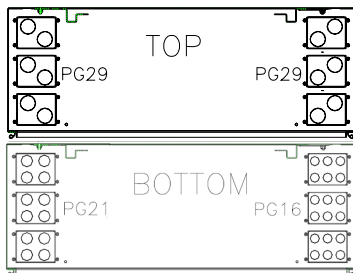
12 cut-outs for cable entry
(6 in the bottom, 6 in the top)
Each position is fitted with a cable entry plate including break-out ports.
12 plates are pre-mounted on the standard FIST-WR2: (can be interchanged)
− Top of the rack: 6 plates with 2xPG29 break-out ports
− Bottom of the rack: 3 plates with 6xPG16 (right)+ 3 plates with 4xPG21 (left) break-out ports

7N751843.JPG

Cable attachment
One 300 mm wide cable attachment plate with C-profile is pre-mounted, though can be repositioned in the left or right rack top/center/bottom. Standard 2 plates can be mounted in the rack.
Select the accessories to fix the cables in the FIST-WR2 accessories kit (see section 3.4.2).
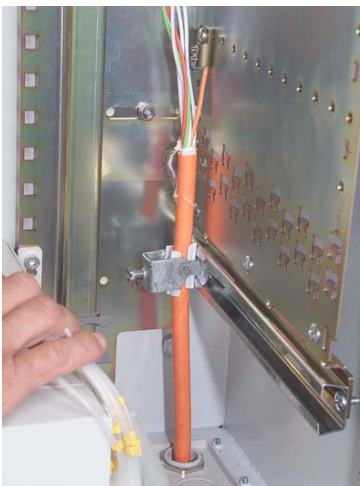
7N751851.JPG

Shelf accommodation
The mounting profiles are field adaptive to:
− 19", symmetrically positioned
− ETSI, symmetrically positioned
− ETSI, asymmetrically positioned
More info in section 3.3.

7N3K1089.JPG

Patch cord management
Patch cord management is done in horizontal patch cord management systems due to limited space next to the shelves. The HPM is to store functional patch cord overlength, the HPS is to store random patch cord overlength (see also section 3.4.4).

3.2 Rack dimensions and capacity

	WR2-1	WR2-2
Dimensions (mm)		
Height	770	1010
Width	840	840
Depth (including wall attachment frame)	365	365
Max. capacity (in ETSI HU's)		
# ETSI HU's (25 mm pitch)	27	37

FIST System	Height occupancy (ETSI HU's)	Max. # in WR2-1	Max. # in WR2-2
HPM, HPS	7		
POM, FIST standard shelves	5		
FIST shelves (3U) i.e. FIST-GPS2-M	5	5	7
FIST shelves (3U) combined with 1 HPM	5	4	6
FIST 2U shelf (88 mm high) i.e. FIST-GPS2-J	4	6	9
FIST 1U shelf (44 mm high) i.e. FIST-GPS2-K	2	13	18

3.3 Mounting options for shelves

The rack includes field-adaptive mounting profiles with ETSI (25 mm) pitch for shelf mounting.
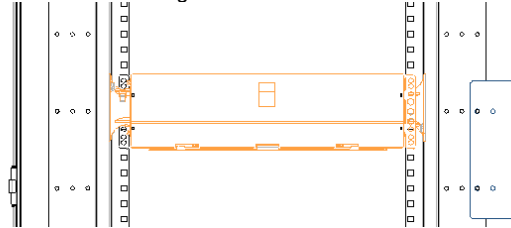
ETSI standard mounting

ETSI asymmetrical to the left
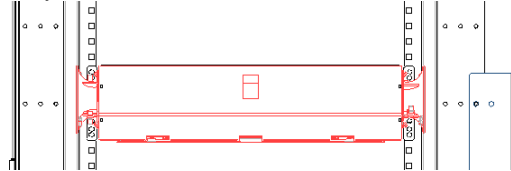
19" standard mounting

3.4 FIST-WR2 accessories

3.4.1 Cable entry plates

AUT16603.JPG

Plate with 6 break-out ports PG16
FIST-WR2-CEP-6PG16

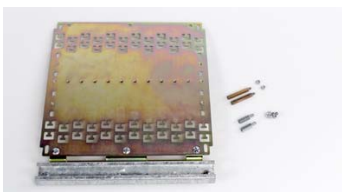*AUT16604.JPG*

Plate with 4 break-out ports PG21
FIST-WR2-CEP-4PG21

AUT16605.JPG

Plate with 2 break-out ports PG29
FIST-WR2-CEP-2PG29

AUT16606.JPG

Plate with 1 break-out port PG42
FIST-WR2-CEP-1PG42

7N3K6730.JPG

Cable attachment plate
FIST-GR2-CAP-300
Extra cable attachment plate with C-profile (300 mm wide). (1 already premounted in the standard WR2). 2 plates can be mounted in the rack.

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3.4.2 Cable termination and sealing kits

Loose tube cable:

Cable termination kits for loose tube cable (1 cable)
FIST-WR2-CTK-LT1-8/12
FIST-WR2-CTK-LT1-12/16
FIST-WR2-CTK-LT1-16/22
Last digits of the name string (XX/XX) indicate the cable diameter range in mm.
Kit including a cable clamp, a strength member fixation, a cable seal gland + 1 mini Allen key
The sealing gland is PG16 for cable Ø 8-12 mm, PG21 for Ø 12-16 mm and PG29 for Ø16-22 mm

AUT16607.JPG

Cable termination kits for loose tube cable (2 cables)
FIST-WR2-CTK-LT2-8/12
FIST-WR2-CTK-LT2-12/16
FIST-WR2-CTK-LT2-16/22
Last digits of the name string (XX/XX) indicate the cable diameter range in mm.
Kit including a double cable clamp, a double strength member fixation, 2 cable seal glands + 1
mini Allen key
The sealing gland is PG16 for cable Ø 8-12 mm, PG21 for Ø 12-16 mm and PG29 for Ø16-22 mm

7N3K6739.JPG

Cable termination kits for loose tube cable (3 cables)
FIST-WR2-CTK-LT3-8/12
Last digits of the name string (XX/XX) indicate the cable diameter range in mm.
Kit including a triple cable clamp, a triple strength member fixation, 3 cable seal glands + 1 mini
Allen key
The sealing gland is PG16 for cable Ø 8-12 mm.

7N3K6740.JPG
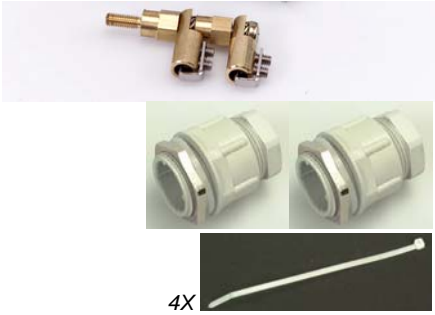
IFC (Intra-Facility Cable) or BOC (Break Out Cable):

Cable termination kits for intra-facility or breakout cable (1 cable)
FIST-WR2-CTK-IF1-6/14
FIST-WR2-CTK-IF1-9/18
FIST-WR2-CTK-IF1-15/26
Last digits of the name string (XX/XX) indicate the cable diameter range in mm.
Kit including 2 tie-wraps, a strength member fixation, 1 cable seal gland + 1 mini Allen key
The sealing gland is PG16 for cable Ø 6-14 mm, PG21 for Ø 9-18 mm and PG29 for Ø 15-26 mm

AUT16609.JPG

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Cable termination kits for intra-facility or breakout cable (2 cables)
FIST-WR2-CTK-IF2-6/14
FIST-WR2-CTK-IF2-9/18
FIST-WR2-CTK-IF2-15/26
Last digits of the name string (XX/XX) indicates the cable diameter range in mm.
Kit including 4 tie-wraps, a strength member fixation, 2 cable seal glands + 1 mini Allen key
The sealing gland is PG16 for cable Ø 6-14 mm, PG21 for Ø 9-18 mm and PG29 for Ø 15-26 mm

4X

Cable termination kits for intra-facility or breakout cable (3 cables)
FIST-WR2-CTK-IF3-6/14
Last digits of the name string (XX/XX) indicates the cable diameter range in mm.
Kit including 6 tie-wraps, a strength member fixation, 3 cable seal glands + 1 mini Allen key
The sealing gland is PG16 for cable Ø 6-14 mm.

6X

Ribbon, central core cable, other…

Maximum 3 pieces of FIST-GR-CTB100 (see below) can be mounted on 1 cable attachment plate.
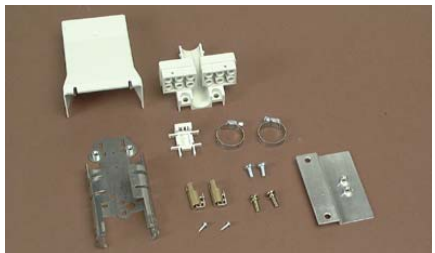
AUT16615.JPG

Ribbon loose tube cable termination kit
FIST-GR-CTB100
Cable termination kit for max. 2 ribbon loose tube cable. Can be mounted next to the shelf.
Up to 6 tubes of R12.
Strength member fixation compatible with most types of strength members (1.5-5 mm Ø).
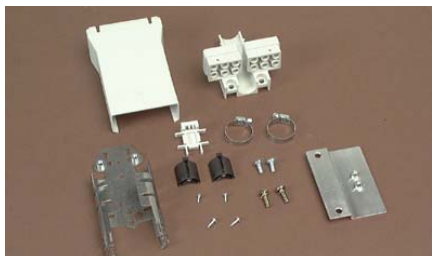
GCO2OG14.JPG

Central core cable termination kit
FIST-GR-CTB100CC
Cable termination kit for max. 2 central core cables. Can be mounted next to the shelf.
Strength member fixation (till 2.5 mm Ø).

GCO2OG15.JPG

3.4.3 Patchcord and flex tube sealing kits

BIGB003.JPG

Pigtail seal – 24 pigtails
FIST-GB-PTS24-01
Pigtail seal PG29 to seal up to 24 single fiber pigtails with a diameter range of 0 - 3.0 mm.
Maximum 6 of these pigtail seals can be used in each rack 'corner'. (6 x 24 = 144 fibers)

7N3K1042.JPG

Pigtail seal – 6 pigtails
FIST-GB-PTS6X4-PG21-01
Pigtail seal PG 21 to seal up to 6 single fiber pigtails with a diameter range of 0 – 4.0 mm.

FSBV2005.JPG

Pigtail seal – 4 pigtails (or IFC or patchcord cable)
FIST-GB-GLD21-4X6MM
Pigtail seal PG21 to seal up to 4 pigtails/IFC/patchcords with a diameter range of 0 – 6.0 mm.

FSBV2007.JPG

Flex tube gland
FIST-GB-GLD16-10-FLEX2
Flex tube gland PG16 for tube Ø 10 mm

FSBV2068.JPG

Flex tube gland
FIST-GB-GLD16-17-FLEX2
Flex tube gland PG16 for tube Ø 17 mm

3.4.4 Wraparound pigtail protection
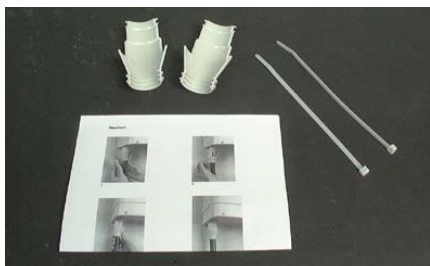
GBFW011.JPG

FIST-GB-PTS24-FLEXWRAP-01
Kit with 2 half shells to hold the flexible wraparound protection tubing on the pigtail seal
FIST-GB-PTS24-01.

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GBFW010.JPG

Wraparound tubing
FIST-WAFLEX-23-10 (10 m)
FIST-WAFLEX-23-50 (50 m)
Dual wall, flexible wraparound tube (Ø. approx. 25mm) to enter in a
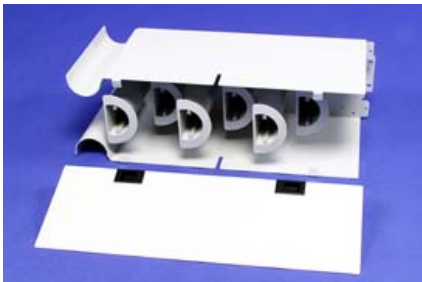FIST-GB-PTS24-FLEXWRAP-01 (see above).

DSC00013.JPG

Clips for flextube
FIST-GB-PTS24-FLEXCLIP-10
Kit with wall mountable clips (including plugs and screws) to hold the wraparound flexible tube.

3.4.5 Pigtail and patch cord management

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Horizontal pigtail management
Height occupancy: 175 mm (7 ETSI HU)   Pigtail capacity: 288 pigtails.
FIST-GR2-HPM-M (ETSI)
A horizontal pigtail management system can be fitted to store functional overlength of patch cords for patching within the same rack. Six half round drums are used to guide patch cords entering from the left or from the right side duct.
The system can be fitted in the rack for either left or right patch cord entrance by simply turning it upside down.
FIST-GR2-HPM-I (19")
A 19" HPM with mounting bracket adapters for symmetrical installation between ETSI mounting profiles. (Bracket adapters are not used if mounting profiles are at 19" width)
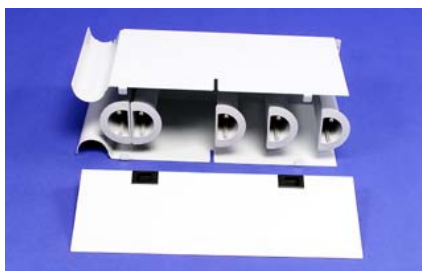
Horizontal pigtail storage
Height occupancy: 175 mm (7 ETSI HU)   Pigtail capacity: 288 pigtails.
**FIST-GR2-HPS-M (ETSI)**
A horizontal pigtail storage system can be fitted to store random patch cord overlengths in a controlled way. The system contains 5 drums and can be fitted in the rack for either left or right patch cord entrance by simply turning it upside down.
FIST-GR2-HPS-I (19")
A 19" HPS with mounting bracket adapters for symmetrical installation between ETSI mounting profiles.
(Bracket adapters are not used if mounting profiles are at 19" width)
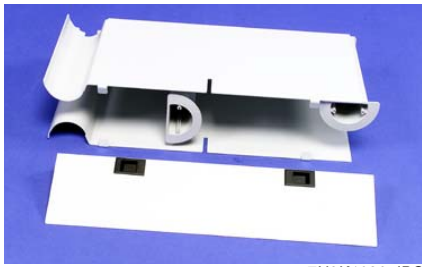
7N3K1091.JPG

Pigtail orientation module

Height occupancy: 5 ETSI HU (125 mm)   Pigtail capacity: 288 pigtails.

FIST-GR2-POM-M (ETSI)

This module can be inserted in a rack to redirect or branch a pigtail bundle. It can be fitted in the rack for either left or right patch cord entrance by simply turning it upside down. Make sure that the drum at the patch cord entrance is always in the correct position (i.e. guiding the patch cords that are entering the shelf).

FIST-GR2-POM-I (19")

A 19" POM with mounting bracket adapters for symmetrical installation between ETSI mounting profiles. (Bracket adapters are not used if mounting profiles are at 19" width)

7N3K1093.JPG

3.4.6 Miscellaneous

Flexible tubing

FIST-GS-FLEX-10-50-S5027 (Ø 10 mm - 50 m)

FIST-GS-FLEX-17-10   (Ø 17 mm - 10 m)

FIST-GS-FLEX-17-50-S5027 (Ø 17 mm - 50 m)

Reel of xx m flexible tubing.

RA11.JPG

Tie wraps

FISTV-TW-NN-188

188 mm long tie wraps are used for fixing the cable and flexible tubing to the rack.

I&C025.JPG

3.5 Tools

Allen key

FACC-ALLEN-KEY-5-350

Allen Key, diameter 5 mm, length 350 mm for back-mounting of shelves in rack.

T004.JPG

Cage nut tool

FACC-CAGE-NUT-TOOL

Tool to install cage nuts in the rack.

T023.JPG