

OPTICAL DISTRIBUTION EQUIPMENT

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03

The Optical Distribution Equipment covers the products used for building the optical network nodes. Central office cabinets, optical distribution frames, splice boxes, excess cable trays etc, are the integral parts of any fibre optic network.

This chapter covers a wide range of optical distribution equipment for indoor applications including STP and PSU families of high capacity optical distribution frames with broad selection of modules and auxiliary accessories, broad range of wall mounted fibre optic distribution boxes dedicated for low and medium fibre count cables, fibre optic closures, cable ducting system as well as the environmentally protected street cabinets and wall mounted optical distribution boxes.

All optical distribution products are compliant with EN ETS 300 119, BS EN 60825-2:2005, ITU-L.50, ZN-06 TP SA-009 standards. The customer feedback on quality, performance and safety is an important input into products development. OPTOMER products provide easy installation and reliable operation.

PS-3 FIBRE OPTIC DISTRIBUTION BOX

FEATURES:

- wall mounted in controlled environments
- termination of up to 72 fibres, 6 cable entries
- storage space for patchcord cable under adapter plate
- full front access to splice trays and adapter plate
- hinged splice trays allowing convenient maintenance

THE SET INCLUDES:

- splice trays KS-3E, cable organisers
- cable ties, cable rubber glands
- installation and handling instructions
- installation kit

TECHNICAL SPECIFICATIONS:

	PS-3/24	PS-3/48	PS-3/72	PS-3/144
number of splice trays	1 x KS-24	2 x KS-24	3 x KS-24	6 x KS-24
maximum number of splices	24	48	72	144
adapter capacity	144			
connector standard	E-2000, SC, FC, ST, LC			
recommended pigtail length [m], 0.9 mm buffered fibre	2,5			
recommended pigtail length [m], 2 mm cable diameter	1,5			
number of outdoor cable entries	6			
maximum diameter of input cable [mm]	14			
dimensions: width/height/depth [mm]	365/410/185			
weight [kg]	7			
housing material/colour	steel sheet/RAL 7035			
mechanical protection IK	IK 08			
environmental protection IP	IP31			

ORDERING:

PS-3/72/K/72E2A - wall mounted Fibre Optic Distribution Box equipped with 72 pigtails and 72 E2000/APC adapters



Fibre Optic Distribution Box PS-3/144

PS-5 FIBRE OPTIC DISTRIBUTION BOX

FEATURES:

- wall mounted in controlled environments
- termination of up to 24 fibres, 4 cable entries
- uncut fibre loops storage
- full front access to splice trays and adapter plate

THE SET INCLUDES:

- separate adapter plate protection lid (option)
- splice tray KS-3E, cable organisers
- cable ties, cable rubber glands
- installation and handling instructions
- installation kit

TECHNICAL SPECIFICATIONS:

	PS-5/12	PS-5/24
number of splice trays	1 x KS-24	
maximum number of splices	24	
adapter capacity	12	24
connector standard	E-2000, SC, FC, ST, LC	
recommended pigtail length [m], 0.9 mm buffered fibre	2	
recommended pigtail length [m], 2 mm cable diameter	1,5	
number of outdoor cable entries	4	
maximum diameter of input cable [mm]	14	
dimensions: width/height/depth [mm]	250/400/100	
weight [kg]	3	
housing material/colour	steel sheet/RAL 7035	
mechanical protection IK	IK 08	
environmental protection IP	IP51	

ORDERING:

PS-5/24/P/K/24E2A wall mounted Fibre Optic Distribution Box equipped with 24 pigtails and 24 E2000/APC adapters

TELECOM

ACCESS

CATV

MAN

WAN

LAN

FTTx

PON

xWDM



*Fibre Optic Distribution Box
PS-5/24/P with adapter plate lid*

PS-8 FIBRE OPTIC DISTRIBUTION BOX



Fibre Optic Distribution Box PS-8/12

FEATURES:

- wall mounted in controlled environments
- termination of up to 12 fibres, 2 cable entries
- uncut fibre loops storage
- full front access to splice trays and adapter plate
- 12 splice KSQ splice tray

THE SET INCLUDES:

- KSQ splice tray, cable organisers
- cable ties, cable rubber glands
- installation and handling instructions
- installation kit

TECHNICAL SPECIFICATIONS:

	PS-8/12
number of splice trays	1 x KSQ
maximum number of splices	12
adapter capacity	12
connector standard	E-2000, SC, FC, ST, LC
recommended pigtail length [m], 0.9 mm buffered fibre	1,5
recommended pigtail length [m], 2 mm cable diameter	1,5
number of outdoor cable entries	2
maximum diameter of input cable [mm]	14
dimensions: width/height/depth [mm]	135/340/90
weight [kg]	1,5
housing material/colour	steel sheet/RAL 7035
mechanical protection IK	IK 08
environmental protection IP	IP51

PSW-12/DIN FIBRE OPTIC DISTRIBUTION BOX



Fibre Optic Distribution Box PSW-12/DIN

FEATURES:

- wall or 35 mm DIN rail mounted
- easy installation in telecom and power cabinets
- termination of up to 12 fibres, 2 cable entries
- back or side mounting
- captive screw mounted lid

- cable strength member clamps
- installation and handling instructions
- installation kit (for DIN rail)

THE SET INCLUDES:

- KS-Q splice tray
- cable ties, spiral protection sleeve

TECHNICAL SPECIFICATIONS:

	PSW-12/DIN
number of splice trays	1 x KSQ
maximum number of splices	12
adapter capacity	12
connector standard	E-2000, SC, FC, ST, LC
recommended pigtail length [m], 0.9 mm buffered fibre	1,5
recommended pigtail length [m], 2 mm cable diameter	-
number of outdoor cable entries	2
maximum diameter of input cable [mm]	12,8
dimensions: width/height/depth [mm]	40/220/120
weight [kg]	1,2
housing material/colour	steel sheet/RAL 7035
mechanical protection IK	IK 08
environmental protection IP	IP20

ORDERING:

PSW-DIN-12/K/12E2A - wall mounted Fibre Optic Distribution Box equipped with 12 pigtails and 12 E2000/APC



FIBRE OPTIC DISTRIBUTION BOX PSL/DIN

FEATURES:

- distribution box designed for splicing
- for installation in telecommunication or electrical cabinets, directly on DIN rail (35mm width).
- possibility of mounting splice protectors inside the box
- possibility of entering cable through cable gland DP type
- made of steel covered with corrosion - resistant powder

THE SET INCLUDES:

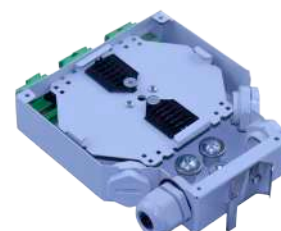
- outer housing
- splice protector holder
- cable band
- protective band for 900 um buffered fibre
- cable gland
- cable guide
- DIN rail bracket

TECHNICAL

	PSL-6/DIN	PSL-12/DIN
maximum number of splices	6	12
adapter capacity	6	12
connector standard	SC Duplex	
number of cable inputs/outputs kabla	1	4
maksymalna średnica kabla [mm]	7	14
recommended pigtail length [m], 0.9 mm buffered fibre	1	1,5
dimensions width/height/depth [mm]	35/50/85	132/34/148

ORDERING:

PSL/DIN - fibre optic distribution box for DIN rail

Fibre Optic Distribution Box
PSL-6/DINFibre Optic Distribution Box
PSL-12/DIN

PSM COMPACT FIBRE OPTIC DISTRIBUTION BOX

FEATURES:

- wall or 35 mm DIN rail mounted
- easy installation in telecom and power cabinets
- termination of up to 4 fibres, 2 cable entries
- organisation of fibre routing tubes vertical and horizontal
- splice box option for branch cables - additional splice
- protector holder required

THE SET INCLUDES:

- fibre organiser
- splice protector holder, cable ties
- installation and handling instructions
- installation kit
- DIN rail fitting (ordered separately)

TECHNICAL

	PSM-1/4	PSM-2/4
number of splice trays	-*	
maximum number of splices	4/max. 8	6
adapter capacity	4	
connector standard	E-2000, SC	
recommended pigtail length [m], 0.9 mm buffered fibre	0.5	
recommended pigtail length [m], 2 mm cable diameter	-	
number of outdoor cable entries	4	2
maximum diameter of input cable [mm]	10	14
dimensions: width/height/depth [mm]	90/145/20	90/195/35
weight [kg]	0.5	
housing material/colour	steel sheet/RAL 7035	
mechanical protection IK	IK 08	
environmental protection IP	IP20	

* splice protector holder

ORDERING:

PSM-DIN-4/K/4E2A - wall mounted Compact Fibre Optic Distribution Box, equipped with 4 pigtails and 4 E2000/APC

Compact Fibre Optic Distribution Box
PSM-1/4Compact Fibre Optic Distribution Box
PSM-2/4

MSW-12/DIN FIBRE OPTIC SPLICE BOX



MSW-12/DIN FIBRE OPTIC SPLICE BOX

FEATURES:

- wall or 35 mm DIN rail mounted in controlled environments
- 12 fibre splice capacity, 4 cable entries
- easy organisation of uncut fibre loops
- full front access to splice trays

THE SET INCLUDES:

- KSQ splice tray
- cable ties, cable rubber glands
- installation and handling instructions
- installation kit

TECHNICAL SPECIFICATIONS:

	MSW-12/DIN
number of splice trays	1 x KSQ
maximum number of splices	12
number of cable inputs/outputs	1/1
maximum cable diameter [mm]	12,8
dimensions: width/height/depth [mm]	220/123/40
housing material/colour	steel sheet/RAL 7035
mechanical protection IK	IK 08
environmental protection IP	IP20

ORDERING:

MSW-DIN-12 - wall mouned Fibre Optic Splice Box for 12 splices



MK-5 SPLICE BOX



Splice Box MK-5

FEATURES:

- wall mounted in controlled environments
- 72 fibre splice capacity, 4 cable entries
- easy organisation of uncut fibre loops
- full front access to splice trays

THE SET INCLUDES:

- KS-24 splice tray
- cable ties, cable rubber glands
- installation and handling instructions
- installation kit

TECHNICAL

	MK-5/24	MK-5/48	MK-5/72
number of splice trays	1 x KS-24	2 x KS-24	3 x KS-24
maximum number of splices	24	48	72
number of cable inputs/outputs	2/2		
maximum cable diameter [mm]	14		
dimensions: width/height/depth [mm]	250/400/50		
housing material/colour	steel sheet/RAL 7035		
mechanical protection IK	IK 08		
environmental protection IP	IP51		

ORDERING:

MK-5/24 - wall mounted Splice Box for 24 splices



MK-6 SPLICE BOX

FEATURES:

- wall mounted in controlled environments
- easy high fibre count cables branching out to small fibre count cables
- entry cable outer diameter range: 10 mm to 18 mm
- branch cable outer diameter range: 8 mm to 12 mm
- full front access to splice trays

THE SET INCLUDES:

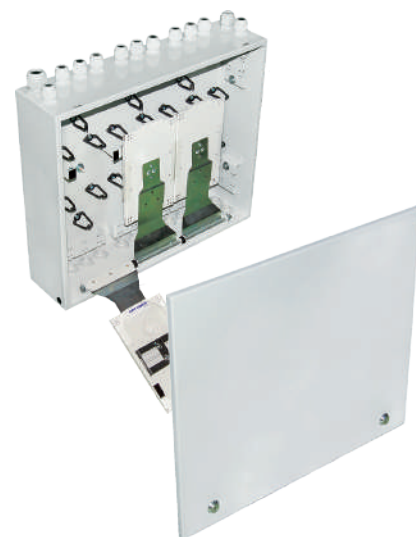
- KS-24 splice trays (full amount - option)
- cable glands DP 13, DP 16, DP 21
- cable ties, cable organisers
- installation and handling instructions
- installation kit

TECHNICAL SPECIFICATIONS:

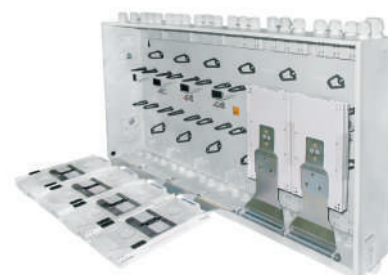
	MK-6/72	MK-6/144
number of splice trays	3 x KS-24 (max. 9 x KS-24)	6 x KS-24 (max. 18 x KS-24)
number of splices	72 (max. 216)	144 (max. 432)
number of cable inputs/outputs	2/24	4/40
maximum cable diameter [mm]	4 dla ø18 i 22 dla ø12	2 dla ø18 i 42 dla ø12
dimensions: width/height/depth [mm]	470/120/430	820/120/430
housing material/colour	steel sheet/RAL 7035	
mechanical protection IK	IK 08	
environmental protection IP	IP51	

ORDERING:

MK-6/72 - Splice Box for 72 fibre splices



Splice Box MK-6/72

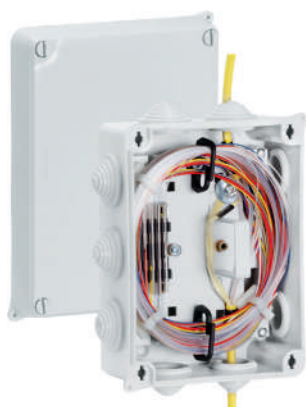


Splice Box MK-6/144

NMS WALL MOUNTED SPlice BOX



Wall Mounted Splice Box NMS-4



Wall Mounted Splice Box NMS-6



Wall Mounted Splice Box NMS-12

FEATURES:

- wall mounted for outdoor use
- rubber gland cable ports or cables routed directly in corrugated tube
- a variety of ways to seal cables – preinstalled cable ports
- IP65 rated environmental protection (NMS-4) with application of cable glands DP, IP54 (NMS-6)
- full front access to splice trays

THE SET INCLUDES:

- fibre organiser, wławnice gumowe
- splice protector holder, cable ties
- installation and handling instructions
- installation kit

TECHNICAL SPECIFICATIONS:

	NMS-4	NMS-6	NMS-12
number of splice trays		—*	
maximum number of splices	4	6	12
number of cable inputs/outputs	2/2	10/12	16/16
maximum cable diameter [mm]	10	11	10
dimensions: width/height/depth [mm]	130/35/80	120/70/170	131/131/37
housing material/colour	ABS		
mechanical protection IK	IK 08		
environmental protection IP	IP65	IP54	

* splice protector holder

ORDERING:

NMS-6 - 6 splice wall mounted splice box



PSH-2 OUTDOOR FIBRE OPTIC DISTRIBUTION

FEATURES:

- wall mounted distribution box adapted to be mounted on the outside of the building
- for application in industrial environments with high dust level
- splitter installation
- separate splice and cross connect zones
- IP66 rated environmental protection
- possibility of installation on a plinth

THE SET INCLUDES:

- adapter plate
- KS-24 splice trays
- cable glands DP-13, DP-16, DP-21
- cable ties and cable protective band
- installation and handling instructions
- installation kit

ADDITIONAL EQUIPMENT:

- installation kit for Abloy lock in PSH fibre optic distribution box
- installation kit for Euro lock in PSH fibre optic distribution box

TECHNICAL SPECIFICATIONS:

	PSH-2/12	PSH-2/24*	PSH-2/48	PSH-2/72	PSH-2/96	PSH-2/144
number of splice trays	2 x KS-24		4 x KS-24	6 x KS-24	8 x KS-24	12 x KS-24
maximum number of splices	24	24	48	72	96	144
adapter capacity	12	24	48	72	96	144
connector standard	E-2000, SC, FC, ST, LC Duplex					E-2000, SC, LC
recommended pigtail length [m], 2.0 mm cable diameter	2,5		3			4
number of outdoor cable entries	4		8			12
maximum diameter of input cable [mm]	18				21	26
dimensions: width/height/depth [mm]	300/400/200		400/500/200		400/600/230	800/600/300
weight [kg]	5,8		7,5	8	11	26
housing material/colour	glass fibre reinforced polyester/RAL 7035					
mechanical protection IK	IK 10					
environmental protection IP	IP66					

* available with 48 adapter plate

ORDERING:

PSH-2/96/E/SC - Outdoor Fibre Optic Distribution Box for 96 pigtails and E2000 or SC adapters



Outdoor Fibre Optic Distribution Box
PSH-2/24



Outdoor Fibre Optic Distribution Box
PSH-2/96



Outdoor Fibre Optic Distribution Box
PSH-2/96

PSH-3 OUTDOOR FIBRE OPTIC DISTRIBUTION BOX



**PSH-3 OUTDOOR FIBRE OPTIC
DISTRIBUTION BOX/12**

FEATURES:

- wall mounted distribution box adapted to be mounted on the outside of the building
- for application in industrial environments and/or telecom manholes
- 48 fibre capacity from 8 cable entries
- IP65 (PSH-3/12), IP66 (PSH-3/24) rated environmental protection
- full front access to the splice tray

THE SET INCLUDES:

- splice tray KS-24 or KSQ
- cable gland DP 16 H
- rubber cable gland
- cable ties
- installation and handling instructions
- installation kit

ADDITIONAL EQUIPMENT:

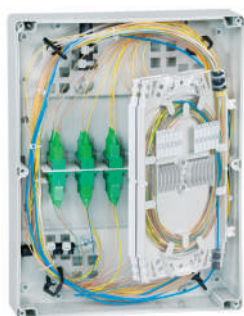
- set of wall fixing screws
- hinges

TECHNICAL SPECIFICATIONS:

	PSH-3/12	PSH-3/24
number of splice trays	1 x KSQ	2 x KS-24
maximum number of splices	12	48
adapter capacity	12	24
connector standard	E-2000, SC	E-2000, SC, LC Duplex
recommended pigtail length [m], 0.9 mm buffered fibre	1,5	
number of outdoor cable entries	2	8
maximum diameter of input cable [mm]	14	18
dimensions: width/height/depth [mm]	140/230/90	230/300/87
weight [kg]	0,7	0,9
housing material/colour	ABS or PC/RAL 7035	
mechanical protection IK	IK 08	
environmental protection IP	IP65	IP66

ORDERING:

PSH-3/12/E/SC - Outdoor Fibre Optic Distribution Box for 12 pigtails and 12 adapters E2000 or SC



**PSH-3 OUTDOOR FIBRE OPTIC
DISTRIBUTION BOX/24**

19" PATCH PANEL PS-19

FEATURES:

- termination of up to 144 fibres
- installation in 19" racks with the minimum depth of 300 mm, e.g. STP-19
- bearing guided draw-out mechanism
- patchcord cables' protection with the use of PO-1 and/or PO-2 patchcord management shelves
- installation in 21" and/or 23" racks with the use of AD-19 adapters
- 70 mm distance between door surface and adapter plate
- application of additional cable gland allows direct outdoor cable (10 mm to 14 mm outer diameter) or multipatchcord
- entry (option)
- key lock on the panel front (option)
- possibility of doubling the capacity by the use of Duplex LC adapters
- possibility of making economic version

THE SET INCLUDES:

- adapter plate, splice trays KS-24
- cable organisers and cable ties
- installation and handling instructions
- installation kit

ADDITIONAL EQUIPMENT:

- gland DP /D/
- lock /Z/
- switching strip duplex
- shelves Curtain PO-1, PO-2
- PP-19 PATCHCORD GUIDE

TECHNICAL SPECIFICATIONS:

	PS-19/12 1U	PS-19/24 1U	PS-19/48 1U	PS-19/48 2U	PS-19/72 3U	PS-19/144 4U
number of splice trays	1 x KS-24		2 x KS-24		3 x KS-24	6 x KS-24
maximum number of splices	24		48		72	144
adapter capacity	12	24	48		72	144
connector standard	E-2000, SC, FC, ST, LC Duplex		SC Duplex	E-2000, SC, FC, ST, LC Duplex		E-2000, SC
LC Duplex adapter capacity	24	48*	-	96*	144*	-
recommended pigtail length [m], 0.9 mm buffered fibre	2,5					
number of outdoor cable entries	2					
dimensions: width/height/depth [mm]	483/44/200			483/88/200	483/132/200	483/176/200
weight [kg]	2,5			2,9	3,3	4
mounting brackets position	front					
housing material/colour	steel sheet /RAL 7035					

* the use of duplex adapters requires a corresponding increase in

ORDERING:

PS-19/24/K/24E2A - 19" Patch Panel equipped with 24 pigtails and 24 adapters E2000/APC

TELECOM

ACCESS

CATV

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PON

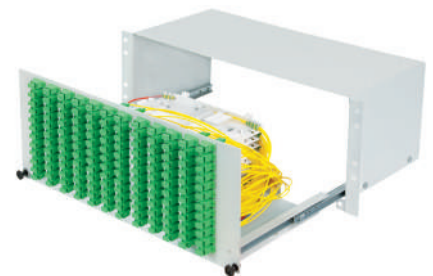
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19" Patch Panel PS-19 with PO-2



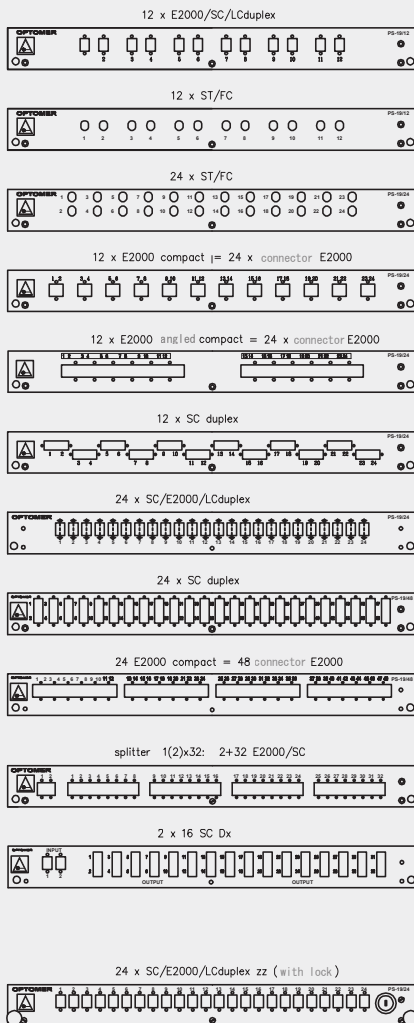
19" Patch Panel PS-19/72/3U



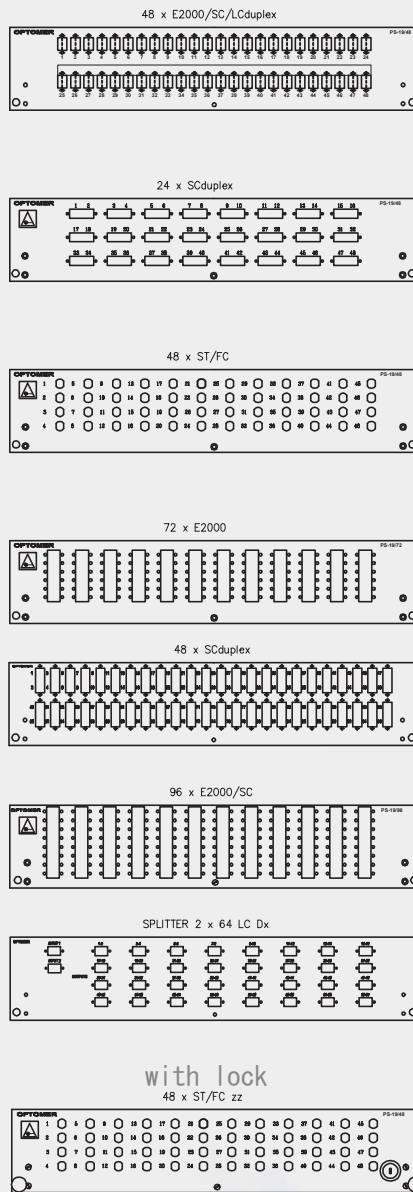
19" Patch Panel PS-19/144/4U

19" PATCH PANEL ADAPTER PLATE CUT-OUTS

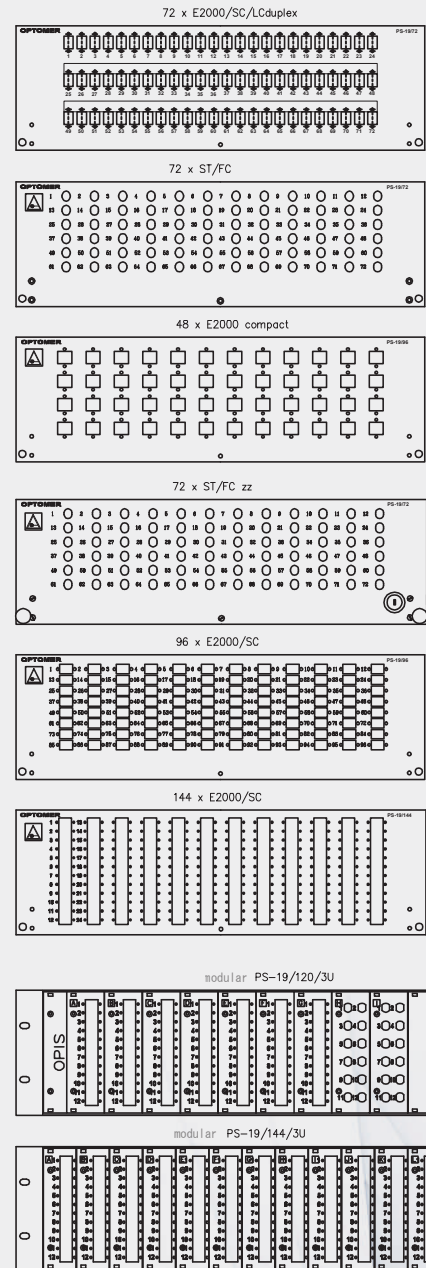
HEIGHT 1U:



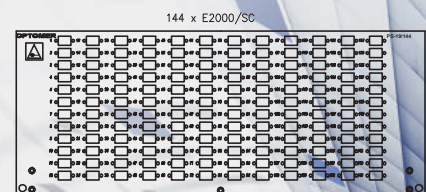
HEIGHT 2U:



HEIGHT 3U:



HEIGHT 4U:



* possibility of installation of LC Duplex adapters in E2000/SC cut-outs

19" EXCESS CABLE TRAY SZ-19

FEATURES:

- dedicated for installation in 19" racks and cabinets under PS-19 patch panels
- storage and organisation of patchcord excess cable lengths
- proper space between door surface and patch panel front plates for patchcords safety
- installation in 21" and/or 23" racks with the use of AD-19 adapters
- bearing guided draw-out mechanism

- SZ-19L-1U enables the storage of outdoor cable loose tubes routed to PS-19/144 and PS-19/120 equipped with MPK-19/12 and MPK-19/12/W modules

THE SET INCLUDES:

- cable organisers and cable ties
- installation and handling instructions
- installation kit

TECHNICAL SPECIFICATIONS:

	SZ-19/1U	SZ-19/2U	SZ-19L/1U
dimensions: width/height/depth [mm]	483/44(1U)/270	483/88(2U)/270	483/44(1U)/200
weight [kg]	2		

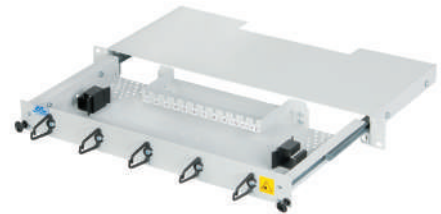
NOTICE: it is necessary to provide 75 mm distance between the cabinet door and 19" frame

ORDERING:

SZ-19/1U - Excess Cable Tray



Excess Cable Tray SZ-19-1U



Excess Cable Tray SZ-19L/1U

19" DISTRIBUTION PANEL BK-19

FEATURES:

- draw-out 19" panel with E-2000, SC adapter plate inside the housing
- cross connections between two bundles of 24 pigtail or patchcords each
- front or rear fixing in the 19" rack
- cable protection and safe bending radii when the panel is drawn-out and in
- indoor cable bundles coming out of the panel
- managed with the protective conduits
- installation in 19" racks with minimum depth of 300 mm, e.g. STP-19
- installation in 21" and/or 23" racks with the use of AD-19 adapters

THE SET INCLUDES:

- adapter plate, cable protective conduit
- cable organisers and cable ties
- installation and handling instructions
- installation kit

TECHNICAL SPECIFICATIONS:

	BK 19/24/1	BK 19/24/2
adapter capacity	24	
connector standard	E-2000, SC, LC	
LC Duplex	36	
adapter capacity	36	
dimensions: width/height/depth [mm]	483 /44(1U)/280	
weight [kg]	1,5	
mounting brackets position	front	front

ORDERING:

BK-19/24/1 - 19" Distribution Panel, capacity 24xE-2000/SC adapters, front fixing



19" Distribution Panel BK-19/24/1

BPK-19 19" DISTRIBUTION PANEL



BPK-19 19" Distribution Panel



BPK-19 19" Distribution Panel

FEATURES:

- most commonly used for splicing fibres in outdoor cables with pigtails, with possibility of connection pigtail - pigtail and pigtail - patchcord
- tilting shelf with front panel for 24 or 72 adaoters of E2000 or SC adapters
- possibility of using LC Duplex adapters
- splices trays KS-24 or KSH
- cable protection and safe bending radius when the panel is down-out and in
- front or rear fixing in the 19" rack
- indoor cable bundles coming out of the panel
- managed with the protective conduits
- installation in 19" racks with minimum depth of 300 mm, e.g. STP-19
- installation in 21" and/or 23" racks with the use of AD-19 adapters

THE SET INCLUDES:

- adapter plate, cable protective conduit
- cable organisers and cable ties
- installation and handling instructions
- installation kit
- splice trays

TECHNICAL SPECIFICATIONS:

	BPK-19/24/1	BPK-19/24/2	BPK-19/72/1	BPK-19/72/2
number of splice trays	2 x KSH		3 x KS-24	
maximum number of splices	24		72	
adapter capacity	24		72	
connector standard	E-2000, SC, LC			
recommended pigtail length [m], 0.9 mm buffered fibre	1,5			
number of outdoor cable entries	1			
dimensions: width/height/depth [mm]	483/44(1U)/280		483/132(3U)/280	
weight [kg]	1,9		3,5	
mounting brackets position	front	front	front	front

ORDERING:

BPK-19/24/1 - 19" Patch Panel, capacity 24xE-2000/SC adapters, front fixing

19" SPLICE PANEL BP-19

FEATURES:

- used for fibre splicing of various indoor/outdoor cables
- easy and safe management of outdoor cable loose tubes guided with the protective tubes routed to splice trays
- rear fixing in STP-19 cabinets
- grouping the fibres from the outdoor cable loose tubes into required fibre count bundles with the use of fibre manifolds R-06

THE SET INCLUDES:

- KSH splice trays
- splice tray retaining blocks
- fibre manifold R-06 (optional)
- cable organisers and cable ties
- installation and handling instructions
- installation kit

	BP-19/72	BP-19/144	BP-19/216	BP-19/288
number of splice trays	6 x KSH	12 x KSH	18 x KSH	24 x KSH
maximum number of splices	72	144	216	288
recommended pigtail length [m], 0.9 mm buffered fibre	2,5			
number of outdoor cable entries	2			
dimensions: width/height/depth [mm]	483/176(4U)/280			
weight [kg]	2,8			
mounting brackets position	rear			

ORDERING:

BP-19/288 - 19" Splice Panel, splice capacity 288 splices, rear fixing



19" Splice Panel BP-19/288

PSM-19/120/3U MODULAR PATCH PANEL

FEATURES:

- up to 10 modules MPS-19/12/K or MPS-19/12
- quick and reliable fibre links configuration
- easy access for performing control and maintenance measurements
- MPS-19/0 module dedicated for port descriptions
- blank plates PZ-3U-8 (width 40 mm) to cover unused space in the panel
- installation in 19" racks with minimum depth of 300 mm, e.g. STP-19
- installation in 21" and/or 23" racks with the use of AD-19 adapters

THE SET INCLUDES:

- one module for port descriptions
- blank plate (optional)
- installation and handling instructions
- installation kit

TECHNICAL SPECIFICATIONS:

	PSM-19/120/3U
number of splice trays	max. 10 x KSQ
maximum number of splices	12 per module
adapter capacity	10 modules x 12 pcs = 120
connector standard	E-2000, SC, FC, ST
recommended pigtail length [m], 0.9 mm buffered fibre	1 - 1,5
dimensions: width/height/depth [mm]	483/132 (3U)/210
weight [kg]	4
number of modules	10
module type	MPS-19/12 or MPS-19/12/K
mounting brackets position	front

ORDERING:

PSM-19/120/3U - Modular Patch Panel, height 3U



*Modular Patch Panel
PSM-19/120/3U*

MODULES MPS-19/12, MPS-19/12/K

FEATURES:

- Dedicated for modular patch panels PSM-19/120/3U
- termination of up to 12 fibres
- MPS-19/12/K module eliminates the use of separate outdoor excess fibre length tray

THE SET INCLUDES:

- module frame
- adapter plate
- KSQ splice tray
- pigtail excess cable length basket
- outdoor cable loose tube excess length basket (MPS-19/12/K)
- installation and handling instructions

TECHNICAL SPECIFICATIONS:

	MPS-19/12	MPS-19/12/K
adapter capacity	12	
connector standard	E-2000, SC, FC, ST	
recommended pigtail length [m], 0.9 mm buffered fibre	1 - 1,5	
dimensions: width/height/depth [mm]	40/132 (3U)/195	

ORDERING:

MPS-19/12/K-K12E2A - module for 12 pigtails and 12 adapters E2000 or SC for PSM-19/120/3U (K - outdoor cable fibre excess length tray)



Module MPS-19/12



Module MPS-19/12/K

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PSM-19/144/3U MODULAR PATCH PANEL



Modular Patch Panel PSM-19/144/3U

FEATURES:

- capacity up to 12 modules MPS-19/12/W
- quick and reliable fibre links configuration
- easy access for performing control and maintenance measurements
- storage and organisation of outdoor cable loose tubes requires application of 19" Excess Cable Tray SZ-19L-1U
- blank plates PZ-3U-7 (width 35 mm) to cover unused space in the panel
- installation in 19" racks with minimum depth of 300 mm, e.g. STP-19
- installation in 21" and/or 23" racks with the use of AD-19 adapters

THE SET INCLUDES:

- cable ties and cable bands
- installation and handling instructions
- installation kit
- 19" Excess Cable Tray SZ-19L-1U (optional)
- blank plate (optional)

TECHNICAL SPECIFICATIONS:

	PSM-19/144/3U
number of splice trays	max. 12 x KSQ
maximum number of splices	12 per module
adapter capacity	12 modules x 12 pcs = 144
connector standard	E-2000, SC
recommended pigtail length [m], 0.9 mm buffered fibre	1 - 1,5
dimensions: width/height/depth [mm]	483/132 (3U)/210
weight [kg]	4
number of modules	12
module type	MPS-19/12/W
mounting brackets position	front

ORDERING:

PSM-19/144/3U - Modular Patch Panel, height 3U

MODULE MPS-19/12/W



Module MPS-19/12/W

FEATURES:

- dedicated for PSM-19/144/3U
- termination of up to 12 fibres

THE SET INCLUDES:

- module frame
- adapter plate
- KSQ splice tray
- pigtail excess cable length basket
- installation and handling instructions

TECHNICAL SPECIFICATIONS:

	MPS-19/12/W
adapter capacity	12
connector standard	E-2000, SC
recommended pigtail length [m], 0.9 mm buffered fibre	1 - 1,5
adapter plate width [mm]	35
dimensions: width/height/depth [mm]	35/132 (3U)/195

* front panel for 12 x LC adapters can be made on request

ORDERING:

MPS-19/12/W/E/SC - module for 12 pigtails and 12 adapters E2000 or SC dedicated for modular patch panels PSM-19/144/3U

MPS-19/12W/K/12E2A - complete module equipped with 12 pigtails and 12 adapters E2000/APC dedicated for modular patch panels PSM-19/144/3U

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PSM-19/144/4U MODULAR PATCH PANEL

FEATURES:

- capacity up to 12xMPK-12 modules
- quick and reliable fibre links configuration
- easy access for performing control and maintenance measurements
- height 4U, includes integrated 1U patchcord cable or outdoor cable loose tube excess lengths tray
- outdoor cable loose tubes organiser allows fixation of guiding protective tubes routed to the installed modules
- outdoor cables and patchcords can be routed into the panel from the left or right side
- installation in 19" racks with minimum depth of 300 mm, e.g. STP-19
- installation in 21" and/or 23" racks with the use of AD-19 adapters

TECHNICAL SPECIFICATIONS:

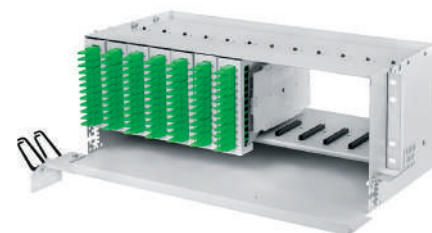
	PSM-19/144/4U
number of splice trays	max. 12 x KSQ
maximum number of splices	144
adapter capacity	144
connector standard	E-2000, SC
LC Duplex adapter capacity	96 - 144
recommended pigtail length [m], 0.9 mm buffered fibre	1,5
number of outdoor cable entries	12
dimensions: width/height/depth [mm]	488/175/290
weight [kg]	3,7
number of modules	12
module type	MPK-12
mounting brackets position	front/pród

ORDERING:

PSM-19/144/4U - Modular Patch Panel, height 4U

THE SET INCLUDES:

- outdoor cable loose tubes and patchcord excess lengths tray
- universal adapter for front or rear fixing in 19" racks
- ingoing outdoor cable loose tubes organiser, outgoing pigtails organiser
- cable ties and cable bands
- installation and handling instructions
- installation kit



Modular Patch Panel PSM-19/144/4U

MODULE MPK-12

FEATURES:

- dedicated for modular Patch Panels PSM-19/144/4U and PSU-300/432
- termination of up to 12 fibres
- outdoor cable tight buffered fibres guided into the module in protective tubes
- excess length of fibre in the protective tube or loose tube stored in the excess fibre length basket
- accepts multipatchcords

THE SET INCLUDES:

- module frame with adapter plate
- KSQ splice tray
- outdoor cable loose tubes basket
- pigtail excess cable length basket
- installation and handling instructions
- installation kit

ADDITIONAL EQUIPMENT:

- OFBLT protective tube 2.5 m

TECHNICAL SPECIFICATIONS:

	MPK-12
adapter capacity	12
connector standard	SC
recommended pigtail length [m], 0.9 mm buffered fibre	1,5
front panel width [mm]	40
dimensions: width/height/depth [mm]	36/128/214

* width of front panel for E-2000, LC, FC, ST adapters can be made on request

ORDERING:

MPK-12/E/SC - module for 12 pigtails and 12 adapters E2000/APC for Modular Patch Panel PSM-19/144/4U and Central Office Cabinet PSU-300/432

MPK-14-12E2A-K - complete module equipped with 12 pigtails and 12 adapters E2000/APC for Modular Patch Panel PSM-19/144/4U and Central Office Cabinet PSU-300/432



Module MPK-12



19" CENTRAL OFFICE CABINET STP-19



19" Central Office Cabinet STP-19

FEATURES:

- 19" cabinet dedicated for installation in telecommunication central offices
- equipped with PS-19 patch panels provides 1320 fibre terminations
- adjustable positions of fixing rails allow installation of patch panels and active equipment with front or rear mounting
- accepts BPK, BP, BK ver. 1 panels
- cable storage sections on both cabinet sides with safe cable bending radius guides for patchcords management
- double door with perspex window panes providing convenient access to the cabinet interior
- bottom and top cable brush entries
- removable side plates providing easy and convenient access to lateral cable management sections
- possibility of installation of the ventilation panel on top of the cabinet

THE SET INCLUDES:

- wall fixing brackets
- levelling feet
- installation and handling instructions
- installation kit

TECHNICAL SPECIFICATIONS:

	STP-19/1.8	STP-19/2.2	STP-19/2.6
installation height of the 19" or 21" cabinet	36U	45U	55U
maximum number of outdoor cables	36 for ø13 mm and 70 for ø6,5 mm		
door	double with window panes		
lateral cable management sections	one section dedicated for outdoor cables the other one for patchcord cables		
housing material/colour	steel sheet, aluminium/RAL 7035		
dimensions: width/height/depth * [mm]	900/1800/350	900/2200/350	900/2600/350
mechanical protection IK	IK 10		
environmental protection IP	IP20		
weight [kg]	70	86	100

* Cabinet with the depth of 400mm available upon request

ORDERING:

STP-19/2.2 - STP-19/2.2 - 19" Central Office Cabinet STP-19, height 2.2 m



PPO FRAME



PPO-19/1U Frame 19"



PPO-19/2U Frame 19"

FEATURES:

- dedicated for MPPO modules compliant with LGX standard
- for installation in 19" cabinets or in 21"/23" cabinets using the AD-19 adapters
- PPO-48 and PPO-72 frames enable installation of MPPO modules in PSU-1 family of Central Office Optical Distribution Cabinets

TECHNICAL SPECIFICATIONS:

	PPO-19			PPO-48	PPO-72
	PPO-19/1U	PPO-19/2U	PPO-19/3U		
pojemność	3 pcs MPPO-1	3 pcs MPPO-2 6 pcs MPPO-1	2 pcs MPPO-4 4 pcs MPPO-3 7 pcs MPPO-2 14 pcs MPPO-1	2 pcs MPPO-3 2 pcs MPPO-2 6 pcs MPPO-1	1 pcs MPPO-4 2 pcs MPPO-3 4 pcs MPPO-2 8 pcs MPPO-1

ORDERING:

PPO-19/1U – 1U frame accommodates maximum 3 MPPO-1 modules

PSU-1 (VER. 350 MM) CENTRAL OFFICE CABINET

FEATURES:

- cabinet depth 350 mm, dedicated for installation in telecommunication central offices with limited space and high number of cables and connectors
- provides 2304 fibre terminations in two hinged module mounting frames (left and right)
- accepts left and right modules MPK-48-L-35, MPK-48-P-35, MPK-72-L-35, MPK-72-P-35
- minimises initial installation expenditures thanks to the modular construction with MPK modules
- easy and convenient devided access to outdoor cable management section and adapter plate, key locked module mounting frames
- high capacity, ease of installation and efficient fibre management
- top and/or bottom outdoor cable or multipatchcord brush entries
- key locked double door with perspex window panes
- stable and rigid construction
- ability to install MPPO modules in the LGX system using PPO-48, PPO-72 frames

THE SET INCLUDES:

- one or two module mounting frames
- front door
- splittable protective tube
- cable band
- installation and handling instructions
- installation kit
- fibre manifolds R-01C

ADDITIONAL EQUIPMENT:

- modules MPK-48-L, MPK-48-P
- modules MPK-72-L, MPK-72-P
- patchcord excess length storage module MZK-L-35
- patchcord excess length storage module MZK-P-35
- blank plate PSU-1-Z to cover unused space in the mounting frame
- PPO-48, PPO-72 frames to install MPPO modules in LGX system

TECHNICAL SPECIFICATIONS:

	PSU-1 /960/600/350 L or P	PSU-1 /960/900/350 L or P	PSU-1 /1920/1200/350/2.2	PSU-1 /2304/1200/350/2.6
number of lateral cable management sections	1 (left or right)	1 (left or right)	2	2
number of splice trays	40 x KS-24		80 x KS-24	96 x KS-24
maximum number of splices	960		960 x 2 = 1920	2 x 1152 = 2304
module type	MPK-48 or MPK-72			
number of modules	20 x MPK-48 or 12 x MPK-72 + 2 x MPK-48	20 x MPK-48 or 12 x MPK-72 + 2 x MPK-48	40 x MPK-48 or 24 x MPK-72 + 4 x MPK-48	48 x MPK-48 or 32 x MPK-72
connector standard	E-2000, SC			
adapter capacity	960 (48 or 72 per module)		1920 (48 or 72 per module)	2304 (48 or 72 per module)
number of outdoor cable entries	26		52	
maximum diameter of input cable [mm]	50			
dimensions: width/height/depth [mm]	600/2200/350	900/2200/350	1200/2200/350	1200/2600/350
recommended pigtail length [m], 0.9 mm buffered fibre	1,5			
weight [kg]	90	115	145	170
housing material/colour	steel sheet/RAL 7035			

ORDERING:

PSU-1/1920/1200/350 - cabinet with two hinged module mounting frames, 1920 fibre termination capacity, width 1200 mm, depth 350 mm

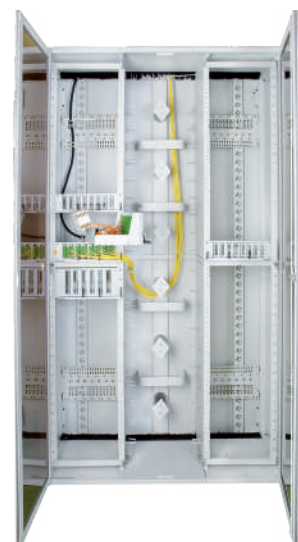
PSU-1/960/600/350L - cabinet with single hinged module mounting frame located on the left side of the cabinet, 960 fibre termination capacity, width 600 mm, depth 350 mm



PSU-1/960/600/350/L



PSU-1/960/900/350/P



PSU-1/1920/1200/350/2.2

PSU-1 (VER. 600 MM) CENTRAL OFFICE CABINET



PSU-1/960/900/600/P

FEATURES:

- cabinet depth 600 mm, dedicated for installation in telecommunication central offices with limited space and high number of cables and connectors
- provides 2304 fibre terminations in two hinged module mounting frames (left and right)
- accepts left and right modules MPK-48-L-35, MPK-48-P-35, MPK-72-L-35, MPK-72-P-35
- minimises initial installation expenditures thanks to the modular construction with MPK modules
- easy and convenient devided access to outdoor cable management section and adapter plate, key locked module mounting frames
- high capacity, ease of installation and efficient fibre management
- top and/or bottom outdoor cable or multipatchcord brush entries
- key locked double door with perspex window panes
- patchcord excess length management section
- stable and rigid construction
- ability to install MPPPO modules in the LGX system using PPO-48, PPO-72 frames

THE SET INCLUDES:

- one or two module mounting frames
- front door
- splittable protective tube
- cable band
- installation and handling instructions
- installation kit
- fibre manifolds R-01C

ADDITIONAL EQUIPMENT:

- modules MPK-48-L, MPK-48-P
- modules MPK-72-L, MPK-72-P
- patchcord excess length storage module MZK-L-60
- patchcord excess length storage module MZK-P-60
- blank plate PSU-1-Z to cover unused space in the mounting frame
- PPO-48, PPO-72 frames to install MPPPO modules in LGX system



PSU-1/1920/1200/600/2.2

	PSU-1 /960/900/600 L or P	PSU-1 /1920/1200/600/2.2	PSU-1 /2304/1200/600/2.6
number of lateral cable management sections	1 (left or right)	2	
number of splice trays	40 x KS-24	80 x KS-24	92 x KS-24
maximum number of splices	960	2 x 960 = 1920	2 x 1152 = 2304
module type	MPK-48 or MPK-72		
number of modules	20 x MPK-48 or 12 x MPK-72 + 2 x MPK-48	40 x MPK-48 or 24 x MPK-72 + 4 x MPK-48	48 x MPK-48 or 32 x MPK-72
connector standard	E-2000, SC		
adapter capacity	960 (48 or 72 per module)	1920 (48 or 72 per module)	2304 (48 or 72 per module)
number of outdoor cable entries	26	52	52
maximum diameter of input cable [mm]	50		
dimensions: width/height/depth [mm]	900/2200/600	1200/2200/600	1200/2600/600
recommended pigtail length [m], 0.9 mm buffered fibre	1,5		
weight [kg]	130	170	200
housing material/colour	steel sheet/RAL 7035		

ORDERING:

PSU-1/1920/1200/600 - cabinet with two hinged module mounting frames, 1920 fibre termination capacity, width 1200 mm, depth 600 mm

PSU-1/960/900/600L - cabinet with single hinged module mounting frame located on the left side of the cabinet, 960 fibre



MODULES MPK-48, MPK-72 (FOR PSU-1)

FEATURES:

- MPK-48 and MPK-72 modules are designed for installation in PSU-1 cabinets with all available depths
- capacities: 48 (MPK-48), 72 (MPK-72) E2000, SC or LC connectors/adapters
- outdoor cable loose tube storage basket at the module bottom
- MPK modules accept multipatchcords, fibres entering the module routed in splittable protective tube
- module heights: MPK-48 100 mm, MPK-72 150 mm
- hinged splice trays provide easy and quick splice installation and organisation

THE SET INCLUDES:

- hinged module fixing
- adapter plate
- KS-24 splice trays
- cable ties and cable bands
- installation and handling instructions
- installation kit

CONFIGURATIONS:

A	B	C	D	E	DESCRIPTION
MPK					module dedicated for PSU-1 cabinet
	48				module capacity
	72				module capacity
		L			cabinet type, hinged frame type (L-left)
		P			cabinet type, hinged frame type (P-right)
			35		cabinet depth 350 mm
				48E2A-K	equipped with 48 pigtails and 48 adapters E2000/APC
				48SCA-K	equipped with 48 pigtails and 48 adapters SC/APC
				72SCP-K	equipped with 72 pigtails and 72 adapters SC/APC
				72LCP-K	equipped with 72 pigtails and 72 adapters LC/APC

ORDERING:

MPK-48-L-35-48E2A-K - module for PSU-1 cabinet with single module mounting frame installed on the left cabinet side, depth 350 mm, equipped with 48 E2000/APC pigtails and adapters

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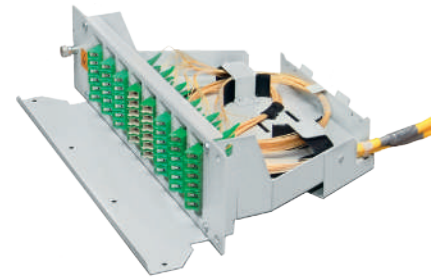
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Module MPK-48 (for PSU-1)



Module MPK-72 (for PSU-1)

PSU-300M/288 AND PSU-300/432 CENTRAL OFFICE CABINET



Central Office Cabinet PSU-300/432

FEATURES:

- dedicated for installation in telecommunication central offices with limited space and high number of cables and connectors
- provides 432 fibre terminations in compact housing
- accepts 36 MPK-12 modules
- minimises initial installation expenditures thanks to the modular construction with MPK-12 modules
- high capacity, ease of installation and efficient fibre management
- top and/or bottom outdoor cable or multipatchcord brush entries
- key locked door
- stable and rigid construction
- special zone to reserve accumulation of patchcord

THE SET INCLUDES:

- housing, key locked front door
- outdoor cable fixing and fibre distribution plate
- indoor cable fixing plate
- installation and handling instructions
- installation kit

ADDITIONAL EQUIPMENT:

- MPK-12 modules
- fibre manifold R-01A - for 144 fibre count outdoor cable (option)
- fibre manifold R-01E - for 48 fibre count outdoor cable (option)

TECHNICAL SPECIFICATIONS:

	PSU-300M/288	PSU-300/432
number of lateral cable management sections	1	
number of splice trays	24 x KSQ	36 x KSQ
maximum number of splices	288	432
module type	MPK-12	
number of modules	24	36
connector standard	E-2000, SC	
adapter capacity	288	432
maximum diameter of input cable [mm]	22	
dimensions: width/height/depth [mm]	300/2200/300	
recommended pigtail length [m], 0.9 mm buffered fibre	1,5	
weight [kg]	40	41
housing material/colour	steel sheet/RAL 7035	

ORDERING:

PSU-300/432 - central office cabinet with 432 fibre termination capacity, width 300 mm, depth 300 mm

MODULE MPK-12 (FOR PSU-300/432)

FEATURES:

- MPK-12 module designed for installation in central office cabinets PSU-300/432
- termination of up to 12 fibres
- outdoor cable loose tubes routed into the module in protective tubes
- excess fibre length storage basket, fibres in outdoor cable loose tubes or in additional protection tubes
- accepts multipatchcords
- module equipped with a 2.5 m OFBLT protective tube

THE SET INCLUDES:

- module frame with adapter plate
- KSQ splice tray
- outdoor cable loose tubes basket
- pigtail excess cable length basket
- installation and handling instructions
- installation kit
- OFBLT protective tube 2.5 m

TECHNICAL

	MPK-12
adapter capacity	12
connector standard	E-2000, SC
recommended pigtail length [m], 0.9 mm buffered fibre	1,5
dimensions: width/height/depth [mm]	36/128/ 214

ORDERING:

MPK-12/E/SC - module for PS-19/144/4U and PSU-300/432, capacity: 12 adapters and 12 pigtails, standard E2000 or SC

MPK-12-12E2A-K - module for PS-19/144 and PSU-300/432 equipped with 12 pigtails and 12 adapters E2000/APC



Module MPK-12

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PS-4 FIBRE OPTIC DISTRIBUTION FRAME



Fibre Optic Distribution Frame PS-4

FEATURES:

- dedicated for installation in telecommunication central offices with limited space and high number of cables and connectors
- provides from 72 fibre terminations in PS-4/72 up to 336 in PS-4/320
- splice tray, outdoor cable excess length fibre and pigtail storage sections in the bottom part of the cabinet
- draw-out adapter frame for E2000 or SC adapter standards, other adapter standards available optionally
- separate pigtail and patchcord sections
- recommended pigtail length: 6 m, 2.0 mm or 2.4 mm cable diameter

THE SET INCLUDES:

- cabinet with draw-out adapter frame
- installation and maintenance instructions
- installation kit

ADDITIONAL EQUIPMENT:

- KS-24 splice trays zamawiane oddzielnie
- FC, ST adapter plates

TECHNICAL SPECIFICATIONS:

	PS-4/72	PS-4/96	PS-4/144	PS-4/160	PS-4/192	PS-4/288	PS-4/320
number of lateral cable management sections	1				2		
number of splice trays KS-24	3	4	6	7	8	12	14
maximum number of splices	72	96	144	168	192	288	336
connector standard	E-2000/SC/LC (ST/FC)	E-2000/SC/LC (ST/FC)	E-2000/SC/LC (ST/FC)		E-2000/SC/LC (ST/FC)		
adapter capacity	72 (45)	160 (100)	160 (100)		320 (200)		
maximum diameter of input cable [mm]	18						
dimensions: width/height/depth [mm]	120/2200*/240	240/2000*/240			480/2200*/240		
recommended pigtail length [m], 2.0 or 2.4 mm cable diameter	6						
weight [kg]	35	66			75		
housing material/colour	steel sheet/RAL 7035						

* 2600 mm height available upon request

ORDERING:

PS-4/144/2.2/E2000-SC - Fibre Optic Distribution Frame, height 2.2 m, capacity: 144xE-2000, SC adapter positions



STREET CABINETS PU

FEATURES:

- outdoor cabinet dedicated for optical access nodes
- resistant to direct influence of environmental conditions
- mounting height 20U, 30U, 33U, 66U
- accepts 19" or 21" panels
- allows installation of passive optical components
- allows application of microduct systems, provides subduct entries
- cable glands protect against humidity penetration
- active equipment, electrical devices, industrial automation equipment mounted on the DIN rail
- placement on the concrete plinth with threaded pins screwed to the cabinet body (plinth included in the installation kit)
- IP54 rated environmental protection
- special zone to reserve accumulation of patchcord
- protection of cables using foam culvert or gland

THE SET INCLUDES:

- housing
- concrete plinth
- outdoor cable fixing and fibre distribution plate
- patchcord guides and organisers
- cable glands
- installation and handling instructions
- installation kit

ADDITIONAL EQUIPMENT:

- heater, thermostat, fan
- DIN rail (width 35 mm)
- roof with retractable hood
- microduct fixing facilities
- fibre manifolds R-01A, R-01C, R-01F

TECHNICAL SPECIFICATIONS:

	PU-4	PU-5	PU-7	PU-10	PU-20
installation height of the 19" or 21" cabinet	17U	20U	30U	33U	2 x 33U
maximum number of outdoor cables	12 for ø13mm	32 for ø13 mm			
front door	double door				
lateral cable management sections	two: left and right				
housing material/colour	aluminium/RAL 7035				
dimensions: width/height/depth [mm]	750/1000/400	858/1170/465	858/1615/465	858/1752/465	1716/1752/465
mechanical protection IK	IK 08	IK 10			
environmental protection IP	IP54				
weight [kg]	20	37	45	50	98

ORDERING:

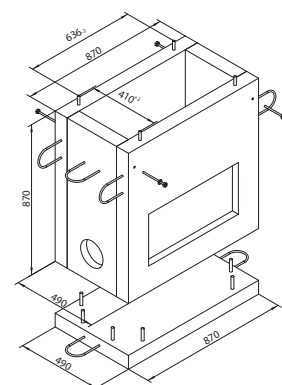
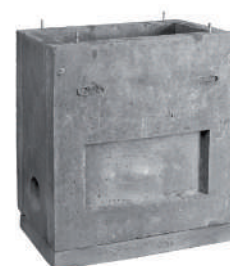
PU-10 - Street Cabinet, installation height 33U



Street Cabinets PU-7



Street Cabinets PU-7



Concrete plinth

OPTICAL DISTRIBUTION FRAMES - SUMMARY

WALL MOUNTED DISTRIBUTION BOXES

	PS-3/24	PS-3/48	PS-3/72	PS-3/144	PS-5/12	PS-5/24	PS-8/12	PSW-12/DIN	PSM-1/4	PSM-2/4	PSH-2/12	PSH-2/24	PSH-2/48	PSH-2/72	PSH-2/96	PSH-2/144	PSH-3/12	PSH-3/24								
number of splice trays	1 x KS-24	2 x KS-24	3 x KS-24	6 x KS-24	1 x KS-24		1 x KSQ	1 x KSQ	-*		2 x KS-24		4 x KS-24	6 x KS-24	8 x KS-24	12 x KS-24	1 x KSQ	2 x KS-24								
maximum number of splices	24	48	72	144	24		12	12	4/ max. 8		6	24	48	48	72	96	144	12	48							
adapter capacity	144				12		24	12	4		12		24	48	72	96	144	12	24							
connector standard	E-2000, SC, FC, ST, LC								E-2000, SC		E-2000, SC, FC, ST, LC Duplex						E-2000, SC, LC	E-2000, SC	E-2000, SC, LC Duplex							
recommended pigtail length [m], 0.9 mm buffered fibre	1,5				2		1,5		0,5		2,5		3				4		1,5							
recommended pigtail length [m], 2 mm cable diameter	2,5				1,5				-		2,5		3				4		-							
number of outdoor cable entries	6				4		2		4		2	4		8				12		2	8					
maximum diameter of input cable [mm]	14								12,8		10	14	18				21	26	14	18						
dimensions: width/height/depth [mm]	360/410/150				250/400/100		135/340/90		220/120/40		90/145/20		90/195/35		300/400/200		400/500/200		500/600/230		800/600/300		140/230/90		230/300/87	
weight [kg]	7				3		1,5		1,2		0,5		5,8		7,5		8	11	26	0,7	0,9					
housing material/colour	steel sheet/RAL 7035								glass fibre reinforced polyester/RAL 7035										ABS or PC/RAL 7035							
mechanical protection IK	IK 08								IK 10										IK 08							
environmental protection IP	IP51								IP20								IP66		IP65		IP66					

* splice protector holder

INDOOR 19" FIBRE OPTIC DISTRIBUTION PATCH PANELS AND SPLICE PANELS

	PS-19/12 1U	PS-19/24 1U	PS-19/48 1U	PS-19/48 2U	PS-19/72 3U	PS-19/144 4U	PSM-19/120 3U	PSM-19/144 3U	PSM-19/144 4U	BPK-19/24/1	BPK-19/24/2	BPK-19/72/1	BPK-19/72/2	BK-19/24/1	BK-19/24/2	BP-19/72	BP-19/144	BP-19/216	BP-19/288
number of splice trays	1 x KS-24	2 x KS-24	3 x KS-24	6 x KS-24	max. 10 x KSQ	max. 12 x KSQ	max. 12 x KSQ	max. 12 x KSQ	max. 12 x KSQ	2 x KSH	3 x KS-24	3 x KS-24	3 x KS-24	-	-	6 x KSH	12 x KSH	18 x KSH	24 x KSH
maximum number of splices	24	24	72	144	12 per module	12 per module	144	144	144	24	72	72	72	-	-	72	144	216	288
adapter capacity	12	24	48	72	144	10 modules x12 pcs = 120	12 modules x12 pcs = 144	144	144	24	72	72	72	24	-	-	-	-	-
connector standard	E-2000, SC, FC, ST, LC, Duplex	LC Duplex	E-2000, SC, FC, ST, LC Duplex	E-2000, SC	E-2000, SC	E-2000, SC, FC, ST	E-2000, SC	E-2000, SC	E-2000, SC	E-2000, SC, LC	E-2000, SC, LC	E-2000, SC, LC	E-2000, SC, LC	-	-	-	-	-	-
LC Duplex adapter capacity	24	48*	48	96*	144*	-	120	144	96-144	36*	96*	36	96	-	-	-	-	-	-
recommended pigtail length [m], 0.9 mm buffered fibre	2,5				1 - 1,5		1,5	1,5	1,5	1,5	1,5	1,5	1,5	-	-	2,5	2,5	2,5	2,5
number of outdoor cable entries	2				10	12	12	12	12	1	1	1	1	-	-	2	2	2	2
dimensions: width/height/depth [mm]	483/44/200				483/88/200	483/132/200	483/176/200	483/132/300/210	483/132/300/210	488/175/290	483/44/100/280	483/132/300/280	483/44/100/280	483/132/300/280	483/44/100/280	483/176/400/280	483/176/400/280	483/176/400/280	483/176/400/280
weight [kg]	2,5				2,9	3,3	4	4	4	3,7	1,9	3,5	3,5	1,5	1,5	2,8	2,8	2,8	2,8
number of modules	-	-	-	-	-	-	10	12	12	-	-	-	-	-	-	-	-	-	-
module type	-	-	-	-	-	-	MPS-19/12 or MPS-19/12/K	MPS-19/12/W	MPK-12	-	-	-	-	-	-	-	-	-	-
mounting brackets position	front								front/rear	front	rear	front	rear	front	rear	front	rear	rear	rear
housing material/colour	steel sheet/RAL 7035																		

* for duplex connectors the number of splice trays should be increased respectively

SPLICE BOXES

	MK-5/24	MK-5/48	MK-5/72	NMS-4	NMS-6	NMS-12	MSW-12	MK-6/72	MK-6/144
number of splice trays	1 x KS-24	2 x KS-24	3 x KS-24	4	6	12	1 x KSQ	3 x KS-24 (max. 9 x KS-24)	6 x KS-24 (max. 18 x KS-24)
maximum number of splices	24	48	72	4	6	12	12	72 (max. 216)	144 (max. 432)
number of cable inputs/outputs	2/2		2/2	2/2	10/12	16/16	1/1	2/24	4/40
maximum cable diameter [mm]	14		10	10	11	10	10	4 for ø18 22 for ø12	2 for ø18 42 for ø12
dimensions: width/height/depth [mm]	250/400/50		130/35/80	120/70/170	131/131/37	220/123/40	470/120/430	820/120/430	820/120/430
housing material/colour	steel sheet/RAL 7035				ABS	steel sheet/RAL 7035	steel sheet/RAL 7035	steel sheet/RAL 7035	steel sheet/RAL 7035
mechanical protection IK	IK 08				IK 08	IK 08	IK 08	IK 08	IK 08
environmental protection IP	IP51				IP65	IP54	IP20	IP51	IP51

* splice protector holder

CENTRAL OFFICE CABINETS

	PSU-1/960/600/350 L or P	PSU-1/960/900/350 L or P	PSU-1/1920/1200/350/2,2	PSU-1/2304/1200/350/2,6	PSU-1/960/900/600 L or P	PSU-1/1920/1200/600/2,2	PSU-1/1920/1200/600/2,6	PSU-300M/288	PSU-300/432	PS-4/72	PS-4/96	PS-4/144	PS-4/160	PS-4/192	PS-4/288	PS-4/320
number of lateral cable management sections	1 (left or right)	1 (left or right)	2	2	1 (left or right)	2	2	1	1	1	1	1	1	1	2	2
number of splice trays	40 x KS-24	40 x KS-24	80 x KS-24	96 x KS-24	40 x KS-24	80 x KS-24	92 x KS-24	24 x KSQ	36 x KSQ	3	4	6	7	8	12	14
maximum number of splices	960	960	960 x 2 = 1920	2 x 1152 = 2304	960	2 x 960 = 1920	2 x 1152 = 2304	288	432	72	96	144	168	192	288	336
module type	20 x MPK-48 or 12 x MPK-72 + 2 x MPK-48	20 x MPK-48 or 12 x MPK-72 + 2 x MPK-48	40 x MPK-48 or 24 x MPK-72 + 4 x MPK-48	48 x MPK-48 or 32 x MPK-72	20 x MPK-48 or 12 x MPK-72 + 2 x MPK-48	40 x MPK-48 or 24 x MPK-72 + 4 x MPK-48	48 x MPK-48 or 32 x MPK-72	MPK-12	MPK-12	-	-	-	-	-	-	-
number of modules	24	24	24	24	24	24	24	24	36	-	-	-	-	-	-	-
connector standard	E-2000, SC									E-2000/SC/LC (ST/FC)	E-2000/SC/LC (ST/FC)	E-2000/SC/LC (ST/FC)	E-2000/SC/LC (ST/FC)	E-2000/SC/LC (ST/FC)	E-2000/SC/LC (ST/FC)	E-2000/SC/LC (ST/FC)
adapter capacity	960 (48 or 72 per module)		1920 (48 or 72 per module)	2304 (48 or 72 per module)	960 (48 or 72 per module)	1920 (48 or 72 per module)	2304 (48 or 72 per module)	288	432	72 (45)	160 (100)	160 (100)	160 (100)	320 (200)	320 (200)	320 (200)
number of outdoor cable entries	26		52	52	26	52	52	-	-	-	-	-	-	-	-	-
maximum diameter of input cable [mm]	50		50	50	50	50	50	22	22	18	18	18	18	18	18	18
dimensions: width/height/depth [mm]	600/2200/350		900/2200/350	1200/2200/350	1200/2600/350	900/2200/600	1200/2200/600	1200/2600/600	300/2200/300	120/2200/240	240/2000/240	240/2000/240	240/2000/240	480/2200/240	480/2200/240	480/2200/240
recommended pigtail length [m], 0.9 mm buffered fibre	1,5									6	6	6	6	6	6	6
weight [kg]	90		115	145	170	130	170	200	41	35	66	66	66	75	75	75
housing material/colour	steel sheet/RAL 7035															

* 2600 mm height available upon request

STREET CABINETS AND CENTRAL OFFICE CABINETS

	PU-4	PU-5	PU-7	PU-10	PU-20	STP-19/1.8	STP-19/2.2	STP-19/2.6
installation height of the 19" or 21" cabinet	17U	20U	30U	33U	2 x 33U	36U	45U	55U
maximum number of outdoor cables	12 dia ø13mm	32 for ø13 mm				36 for ø13 mm and 70 for ø6,5 mm		
door	double door							
lateral cable management sections	two: left and right					double with window pane		
housing material/colour	aluminium/RAL 7035					one section dedicated for outdoor cables the other one for patchcord cables		
dimensions: width/height/depth [mm]	750/1000/400	858/465/1170	858/465/1615	858/465/1752	1716/465/1752	900/1800/350	900/2200/350	900/2600/350
mechanical protection IK	IK 08	IK 10				IK 10		
environmental protection IP	IP54					IP20		
weight [kg]	30	37	45	50	98	70	86	100

CABLE DUCTING SYSTEM

FEATURES:

- used for organization and protection of fibre optic cables in central office premises
- enables proper cable organisation and management in central offices of high number of incoming fibre units
- possibility of installation under raised floors or above cabinets and frames
- a fully enclosed system with high mechanical durability protecting cables against dirt, dust and mechanical damages
- easy installation with minimum effort and standard tools
- easy access covers enable fibre optic cables to be installed or removed at any time without the need to disconnect the system
- measurements, designing and installation of the ducting system at client's side - includes comprehensive implementation

APPLICATIONS:

- central offices
- computer rooms
- base stations
- telecom containers

TECHNICAL SPECIFICATIONS:

- made of flame retardant plastic
- yellow colour
- straight duct lengths: 1.8 m, 1.2 m
- duct widths: 50 mm, 100 mm, 200 mm
- UL94 V0 compliance

ELEMENTY SYSTEMU:

- straight ducts
- elbows
- tees
- 4 way crosses
- ducting splices
- fitting splices
- end caps
- trumpets
- ladder profile ducts*
- installation kit
- ladder profile duct installation kit*

* the offer includes designs and a turn key installations



Installation example



Straight ducts



Elbows



Tees



4 way crosses



Down way



Ducting splices



End caps

ACCESSORIES FOR DISTRIBUTION FRAMES

**PK-19****TP-19/12****AD-19/21/2U****AD-19/21/2U/30****AD-19/19/1U/50****PO-1****PO-2****PK-19 SHELF**

- installation in 19" racks and cabinets
- pigtail and patchcord excess cable lengths storage, support for measuring equipment
- dimensions: 483x250x44(1U), 88(2U) mm
- heights: 1U, 2U

TP-19/12 19" ADAPTER FRONT PLATE

- installation in 19" racks and cabinets
- capacity: 12 x E-2000 or SC adapters
- dimensions: 483/44(1U) mm

**ADAPTER AD-19/21
AD-19/23**

- allows installation of 19" panels in 21" or 23" racks or cabinets
- heights: 1U, 2U, 3U

**ADAPTER AD-19/21/1U/30
AD-19/21/2U/30**

- allows installation of 19" panels in 21" racks or cabinets, front plates shifted back by 30 mm
- heights: 1U, 2U

ADAPTER AD-19/19/1U/50

- allows installation of 19" panels in 19" racks or cabinets, front plates shifted back by 50 mm
- heights: 1U

PO-1 PATCHCORD MANAGEMENT SHELF

- auxiliary accessory for PS-19 patch panels with 200 mm depth
- protects patchcords plugged in the adapter plate against accidental damage
- depth 85 mm
- fixing with adapter plate fixing screws
- no additional fixing components required

PO-2 PATCHCORD MANAGEMENT SHELF

- auxiliary accessory for PS-19 patch panels with 200 mm depth
- protects patchcords plugged in the adapter plate against accidental damage
- provides management of patchcords routed to the shelf installed under the patch panel
- depth 85 mm
- fixing with adapter plate fixing screws
- no additional fixing components required

Notice: all installation kits are dedicated for 19" racks

ORDERING:

PO-1 - Patchcord Management Shelf



ACCESSORIES FOR DISTRIBUTION FRAMES

LP-01 CABLE GUIDE

- provides management of outdoor cables and fibres in protective conduits inside optical distribution cabinets
- safe patchcord cable management
- available versions: LP-01L for installation on the left hand side of the cabinet, LP-01P for installation on the right hand side of the cabinet
- dimensions: 110/90/70 mm

LK-01 OUTDOOR CABLE FIXING PLATE

- used to attach outdoor fibre optic cables in 19" cabinets, installed close to the cable entries
- dimensions: 483/50 mm

LRK OUTDOOR CABLE FIXING AND FIBRE DISTRIBUTION PLATE

- fixed on the back cabinet plate close to cable entries
- outer cable sheath and cable strength member fixing
- management and organisation of outdoor cable loose tubes
- fibre protective conduits fixing
- fixing of up to 8 fibre manifolds R-01

PP-19 PATCHCORD GUIDE

- management of patchcord cable bundles in 19" and 21" cabinets
- fixed directly to mounting rails or to the installed patch panel
- safe patchcord routing towards the back cabinet plate
- provides clear vertical organisation of patchcord bundles along mounting rails

TU-19 CABLE BRACKET PLATE

- management of patchcord cable bundles in 19" cabinets
- used to conduct patchcords on the left or right side of the cabinet
- dimensions: 483/44(1U) mm

Notice: all installation kits are dedicated for 19" racks

ORDERING:

LRK - Outdoor Cable Fixing And Fibre Distribution Plate

TELECOM

ACCESS

CATV

MAN

WAN

LAN

FTTx

PON

xWDM

**LP-01L****LP-01P****LK-01****LRK****PP-19****TU-19**

FIBRE MANIFOLDS



R-01A



R-01C



R-01F



R-06



R-07

R-01A

- accepts 12 OFBLT-P-3.1-0.5-PP protective tubes for outdoor cable fibres distribution
- organises fibres into 12 fiber bundles, that are routed in protective tubes directly to MPS-12, MPK-12 modules
- one protective tube accepts fibres from different outdoor cable loose tubes
- used to feed the required fibre count bundles to PS-19 patch panels and the modules in PSU-300 cabinets
- enables several optical distribution modules to be feeded with fibres from one fibre optic cable

R-01C

- accepts four WOD-10B corrugated tubes as the protection for the distributed outdoor cable loose tubes
- one corrugated tube holds up to 8 outdoor cable loose tubes
- used to feed the required fibre count bundles to PS-19 patch panels and the modules in PSU-1 cabinets
- organises fibres into the required fibre count bundles, that are routed in protective tubes directly to MPK-48 and MPK-72 modules

R-01F

- dedicated for high fibre count cables e.g. 288 fibre count cable with 6 fibre bundles, 48 fibres each
- accepts six WOD-10B corrugated tubes as the protection for the distributed outdoor cable loose tubes
- one corrugated tube holds up to 8 outdoor cable loose tubes
- used to feed the required fibre count bundles to PS-19 patch panels and the modules in PSU-1 cabinets
- organises fibres into the required fibre count bundles, that are routed in protective tubes directly to MPK-48 and MPK-72 modules

R-02A

- accommodates 24 x OFBLT-P-3.1-0.5-PP protective tubes used for outdoor cable fibre distribution
- groups outdoor cable fibres into 12-fiber bundles in protective tubes in MPS-12 and MPK-12 modules
- fibres from different outdoor cable loose tubes can be inserted into one protective tube
- used to feed the required fibre count bundles to PS-19 patch panels and the modules in PSU-300 cabinets
- enables several optical distribution modules to be feeded with fibres from one fibre optic cable

R-07

- hermetic cable gland for 5/8" threaded cable entry
- distribution of outdoor cable fibres inside a cabinet
- used in CATV cabinets

TECHNICAL SPECIFICATIONS:

	R-01A	R-01C	R-01F	NEW: R-02A	R-07	R-06
number of cable entries	1 outdoor cable					2 tubes
outdoor cable outer diameter [mm]	8-16			16-21	5-10	4
maximum number of outgoing tubes	12	4	6	24	12	6
dimensions: width/height/depth [mm]	45/150/34		44/150/44	44, 150/37	25/90	9/55/14
weight [kg]	0,2					0,02
mounting brackets position	3 x MS screws				5/8"	clip

ORDERING:

R-01A - fibre manifold for 12 protective tubes



SPLICE TRAYS

FEATURES:

- provide mechanical protection for 12 to 24 splices
- used in fibre optic equipment for organisation of fibre optic splices
- accept passive optical devices e.g. splitters, couplers
- plastic splice trays KS-24, KSH, KS-Q, ACC1341
- FSP-45 splice protectors recommended for KS-Q, KSH, ACC1341 splice trays
- OS-60 splice protectors recommended for KS-3E splice trays OS-60

THE SET INCLUDES:

- splice tray cover
- cable bands and cable ties

ADDITIONAL EQUIPMENT:

- splice protectors FSP-45 and OS-60
- designator fiber OZRWŁ
- designator close tube OZNL

TECHNICAL SPECIFICATIONS:

	KS-Q	ACC1341 Hellapon	KSH	KS-24	SMF
number of splices	12	16	12	24	
applications	MPS-19/12, MPS-19/12/W, PSH-3, PS-8	FRBU	UFC, BPK-19/24, BP-19	PS-3, PS-5, PS-4, PS-19, PSH-2, PSH-3/24, MK-5, BPK-19/72, MUF-1, MUF-2, PSS-3, PSS-4	FDN, UFC
dimensions: width/height/ depth [mm]	155/92/8	236/92/8	204/145/7	200/115/10	195/148/7
splice protectors	FSP-45			OS-60	FSP-45

ORDERING:

KS-24 - splice tray for 24 splices

TELECOM

ACCESS

CATV

MAN

WAN

LAN

FTTx

PON

xWDM

KSHKS-24KS-QACC1341SMF

HEATSHRINK SPLICE PROTECTORS



FSP-45

OS-60

FEATURES:

- used for fusion splice mechanical protection
- protection of fusion splices against influence of environmental conditions

TECHNICAL SPECIFICATIONS:

	FSP-45	OS-60
length (mm)	45	60

ORDERING:

FSP-45 - splice protector, length 45 mm, pack size 80 pcs



COLORED SPLICE PROTECTORS



Colored Splice protectors

FEATURES:

- used for fusion splice mechanical protection
- protection of fusion splices against influence of environmental conditions
- enable marking and identification of fibers in splice trays
- available in 12 colours: white, aqua, yellow, pink, orange, red, green, blue, purple, grey, brown, black

ANT SANDWICH SPLICE PROTECTORS



ANT Sandwich Splice Protector

FEATURES:

- reliable mechanical and environmental protection of fusion spliced fibres
- simple, short installation, enabled by mechanical crimping on single 250 um fiber
- no heat shrinking
- no need to put splice protector on the fibre prior to splicing
- dimensions: 1.2 mm x 3.2 mm x 30 mm
- material: aluminium body with two stripes of hydrophobic duroplastic material

CABLE ORGANISERS UT

FEATURES:

- used for cable management
- indoor and outdoor applications in various fibre optic equipment

TECHNICAL SPECIFICATIONS:

	UT-25	UT-45	UT-55	UT-85
height [mm]	25	45	55	85
width [mm]	35	30		52
maximum capacity for 3 mm outer diameter cables	145	75	96	228



PROTECTIVE TUBES AND CONDUITS

FEATURES:

- outdoor cable loose tubes protection inside racks and cabinets
- safe fibre bending radius
- fibre distribution between outdoor cable and distribution modules
- dedicated for application with R-01A and R-01E fibre manifolds

	inner/outer diameter [mm]	type
OFBLT-P-3.1.0.5-PP	3,1/5,0	protective tube for R-01 fibre manifold
OFPT-5.0-3.1-WHT-VO-LSZH		flame retardant halogen free fibre protective tube



Richco Protective Tube

PROTECTIVE TUBES

FEATURES:

- outdoor cable loose tubes protection inside and between racks and cabinets
- high crush and bending resistance
- available various types: with pulling wire, splittable, UV stabilised, halogen free, flame retardant, for outdoor applications

	inner/outer diameter [mm]	type
WO-16	10,5/16,0	black corrugated tube with pulling wire - self-extinguishing material, for outdoor cable loose tube and patchcord cable protection
WO-20	15,0/20,0	
WO-25	19,0/25,0	
WO-32	26,0/32,0	
WO-40	33,0/40,0	
WO-50	43,0-50,0	black corrugated tube with pulling wire - self-extinguishing material, halogen free, for outdoor cable loose tube and patchcord cable protection
WO/LSZH-15	11,4/15,0	
WO/LSZH-21	16,0/21,0	
WO/LSZH-25	21,0/25,0	
WO/LSZH-32	26,0/32,0	
WO/LSZH-40	32,0/40,0	
WO/LSZH-52	44,0/52,0	black splittable corrugated tube for outdoor cable loose tube protection
WOD-10B	8,7/13,6	
WOD-14B	12,5/18,5	
WOD-20B	19,5/25,5	corrugated tube, UV stabilised, outdoor applications
WOD-23B	24,2/31,0	
WO/SP-PU-30	30,0/36,0	



Protective Tubes