

Fiber Splice Box, Copper Patch Panel,
both



MIPP™



Be certain.
Belden.

**The Industrial Termination
and Patching Solution
from Belden**

Robust quality, easy installation and high port-density

MIPP™ The industrial-strength patch panel from Belden

Be certain. Belden.



Robust industrial quality offers long-term stability for performance-critical ethernet applications, delivering peace of mind to network engineers and system installers.



Belden's Modular Industrial Patch Panel (MIPP™) is a robust and versatile termination panel for both fiber and copper cables that need to be connected from operating environment to active equipment. Easily installed on any standard 35mm DIN rail, MIPP features high port-density to meet expanding network connectivity needs within limited space. MIPP™ is Belden's high-quality solution for performance-critical Industrial Ethernet Applications.

Robust quality

The durable MIPP™ panels are constructed of lightweight, high strength aluminium, securely protecting copper and optical fiber connections under the harshest industrial conditions. The housing is able to withstand temperatures from -20°C to +70°C and is resistant to shocks and vibrations. The patch panel's industrial quality guarantees a secure termination point for reliable industrial Ethernet connectivity.

Fiber, copper, both

MIPP™ comes as either a Fiber Splice Box, Copper Patch Panel, or a combination. Where both fiber and copper cables are needed together the design enables simply connecting both to a single panel. MIPP™ allows flexible network design for network engineers and flexible patching for system installers.

Easy installation and maintenance

The smart housing design allows quick and flexible installation of the MIPP™ on a DIN rail or a wall. Maintenance is equally easy, since the modules can be individually removed without dismantling the MIPP™ from the DIN rail or wall mount. Just take out the modules that need work and save precious time.

Future proof

As network design may change over time, MIPP™ allows for modifications by simply swapping modules to meet the new design required. Installing a MIPP™ with blind* modules readies the solution for any extensions or modifications to come. MIPP™ is the future proof termination and patching solution for dynamic industries.

Save space

Belden knows the importance of cabinet space in industrial sites. Continuous growth of system networks requires smart use of the existing space. MIPP™ is designed to fit. Thanks to its narrow housing design the required space is kept to a minimum. With three cable entry points (top and bottom) there is no need for special cabinet design or positioning.

Best fit

MIPP™ is the reliable solution for connecting Belden® cables and Hirschmann™ switches.

MIPP's housing design reduces installation and maintenance time. Just extract the modules that require work.

5 reasons why MIPP™ is the dependable industrial termination and patching solution



Wind tower installation application

1. **Robustness:** durable UL certified (UL 1863) solution for linking Hirschmann™ switches to Belden cabling with a guaranteed lifetime of well over 10 years.
2. **Versatility:** suitable in nearly any industrial application where fiber splicing, copper termination or both are required. A single MIPP™ allows for termination and patching of:
 - up to 72 fiber cables: MIPP™ Fiber Splice Box
 - up to 24 copper cables: MIPP™ Copper Patch Panel
3. **Ease of use:** mounted on a DIN rail or wall, any module can be individually extracted from the housing for maintenance actions.
4. **Future proof:** simply swap modules to meet new network demands or add blind modules at initial installation.
5. **Save space and cost:** high port density and multiple cable entry points.

* A blind module is a blanking plate with no cut-outs, for future proof.

MIPP™ Fiber Splice Box

Save cost and space:
high port density and
multiple cable entry points
minimize required cabinet
space.

MIPP™ Fiber Splice Box guarantees efficient fiber termination and is designed for use in a wide range of industrial applications. MIPP™ Fiber Splice Box accommodates various fiber types and connectors: LC, SC, SC metal, ST, ST metal and E-2000™ fiber duplex adapters.

MIPP™ Fiber Splice Box gives you everything you need:

- Splice tray and multiple fingers for easy fiber management
- Up to three cable entries for single fiber module, ideal for ring topology applications
- High port density with up to 72 fiber counts (for a single MIPP™) for efficient usage of space



Accessories for the MIPP™ Fiber Splice Box
Brilliance connectors

Type of Adapters

Single Fiber Modules

(up to 12 fiber connections)

- 6 x SC duplex adapters
- 6 x SC metal duplex adapters
- 6 x LC duplex adapters
- 6 x ST duplex adapters
- 6 x ST metal duplex adapters
- 6 x E-2000™ duplex adapters

Double Fiber Modules

(up to 24 fiber connections)

- 12 x SC duplex adapters
- 12 x SC metal duplex adapters
- 12 x LC duplex adapters
- 12 x ST duplex adapters
- 12 x ST metal duplex adapters
- 12 x E-2000™ duplex adapters

Fiber Applications

- Multimode: OM1, OM2, OM3 and OM4
- Singlemode: OS2 and OS2/APC

MIPP™ Fiber Splice Box is UL certified (UL 1863).



MIPP™ Copper Patch Panel

MIPP™ Copper Patch Panel ensures maximum reliability for Industrial Ethernet and PROFINET networks. The MIPP™ Copper Patch Panel complements the market leading Hirschmann™ switches and high performance Belden cabling solutions by enabling cables to be terminated and linked to active equipment using DataTuff® patch cords, in an organised and structured manner.

MIPP™ Copper Patch Panel covers all your copper termination and patching needs:

- High variety of media and connectors:
 - RJ45 copper keystone jacks (unshielded and shielded, Cat 5e, Cat 6, Cat 6_A)
 - RJ45 copper coupler (unshielded and shielded, Cat 6_A)
- Suitable in nearly any industrial application thanks to the robust aluminium housing (resisting an operating temperature range of -20°C to +70°C)



Perfect fit to the Belden cables and Hirschmann™ product families.

Type of Keystones

Single Copper Modules

- 2 or 4 x RJ45 keystone unshielded
- 2 or 4 x RJ45 keystone shielded
- 2 or 4 x RJ45 coupler unshielded
- 2 or 4 x RJ45 coupler shielded

Type of Cable Categories

- Cat 5e unshielded and shielded
- Cat 6 unshielded and shielded
- Cat 6_A unshielded and shielded

MIPP™ Copper Patch Panel is UL certified (UL 1863).



Accessories for the MIPP™ Copper Patch Panel
DataTuff® for cables and patch cords

MIPP™ Mix



Scan to view the MIPP™ Mix video

The market shows a clear trend in the growing use of both Industrial Ethernet and fiber infrastructures in industrial networks. MIPP™ addresses this by allowing the connection of both fiber and copper cables in a single solution*. Specifically designed for industrial use, MIPP™'s functionality and reliability can make a significant contribution to the uptime and availability of performance-critical systems.

MIPP™ Fiber Splice Box and Copper Patch Panel for varying industrial networking needs



* up to 6 single modules, 3 double modules or a combination can be used in one MIPP™





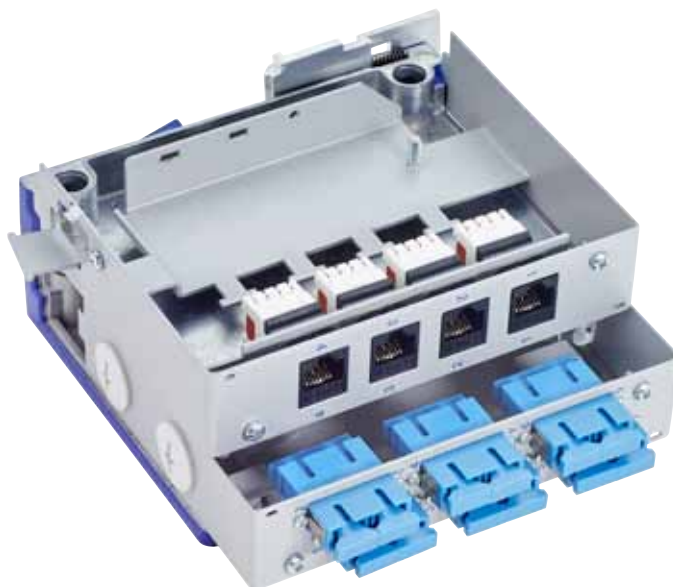
Accessories

MIPPTM Fiber Splice Box Accessories

	SC	LC	ST	E-2000TM
Pigtails	<p>1 or 2 packs of 12 pigtails, 900 micron, 0.6 mtr in 12 different colours:</p> <ul style="list-style-type: none"> • SC / UPC SM 9/125, OS2 • SC / APC SM 9/125, OS2 • SC / PC MM 62.5/125, OM1 • SC / PC MM 50/125, OM2 • SC / PC MM 50/125, OM3 • SC / PC MM 50/125, OM4 	<p>1 or 2 packs of 12 pigtails, 900 micron, 0.6 mtr in 12 different colours:</p> <ul style="list-style-type: none"> • LC / UPC SM 9/125, OS2 • LC / APC SM 9/125, OS2 • LC / PC MM 62.5/125, OM1 • LC / PC MM 50/125, OM2 • LC / PC MM 50/125, OM3 • LC / PC MM 50/125, OM4 	<p>1 or 2 packs of 12 pigtails, 900 micron, 0.6 mtr in 12 different colours:</p> <ul style="list-style-type: none"> • ST / UPC SM 9/125, OS2 • ST / PC MM 62.5/125, OM1 • ST / PC MM 50/125, OM2 • ST / PC MM 50/125, OM3 • ST / PC MM 50/125, OM4 	<p>1 or 2 packs of 12 pigtails, 900 micron, 0.6 mtr in 12 different colours:</p> <ul style="list-style-type: none"> • E-2000TM/UPC SM 9/125, OS2 • E-2000TM/APC SM 9/125, OS2 • E-2000TM/PC MM 62.5, OM1 • E-2000TM/PC MM 50/125, OM2 • E-2000TM/PC MM 50/125, OM3 • E-2000TM/PC MM 50/125, OM4
Brilliance Field Installable Connectors	<p>12 or 24 brilliance connectors SC, 900 micron:</p> <ul style="list-style-type: none"> • OS2 Blue - AX105208 • OM1 Beige - AX105205 • OM2 Black - AX105206 • OM3/4 Aqua - AX105207 	<p>12 or 24 brilliance connectors LC, 900 micron:</p> <ul style="list-style-type: none"> • OS2 Blue - AX105203 • OM1 Beige - AX105200 • OM2 Black - AX105201 • OM3/4 Aqua - AX105202 	<p>12 or 24 brilliance connectors ST, 900 micron:</p> <ul style="list-style-type: none"> • OS2 Blue - AX105213 • OM1 Beige - AX105210 • OM2 Black - AX105211 • OM3/4 Aqua - AX105212 	

MIPPTM Copper Panel Accessories

Industrial Ethernet DataTuff® Patch Cords:	<ul style="list-style-type: none"> • Cat 5e 2 or 4 pairs • Cat 6 2 or 4 pairs • Cat 6_A 2 or 4 pairs • Shielded or Unshielded • Twisted Pair or Bonded Pair • PVC, FRNC, TPE or PUR jackets
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**MIPP™ is ideal for use
in a wide range of industrial
networking applications requiring
maximum system reliability and
flexibility.**





Find Your MIPP™ in 5 Steps

1	What is your system build-up?		
	Fiber only	Copper only	Both Fiber and Copper
	MIPP™ Fiber Splice Box	MIPP™ Copper Patch Panel	MIPP™ Mix

2	How many Fibers/Copper cables do you need?		
	MIPP™ Fiber Splice Box	MIPP™ Copper Patch Panel	MIPP™ Mix
Single module	Fiber count: up to 12	Copper cables: up to 4	depending on design, a combination can be used
Double module	Fiber count: >12 and ≤ 24 in one cable	N/A	
From 2 up to 6 modules	Fiber count: up to 72	Copper cables: up to 24	
Also available as blind modules or housing for future proof or module replacement			

3	How is it mounted?	
	On a DIN rail	On a wall
	DIN rail version	wall mount plate

4	What type of adapter/keystone do you need?	
	MIPP™ Fiber Splice Box	MIPP™ Copper Patch Panel
	LC/LC Duplex adapters	Unshielded KeyConnect
	SC/SC Duplex adapters	Shielded KeyConnect
	ST/ST Duplex adapters	Unshielded Couplers
	E-2000™/E-2000™ Duplex adapters	Shielded Couplers

5	What fiber application/copper category do you need?		
	MIPP™ Fiber Splice Box		MIPP™ Copper Patch Panel
	Multimode	Singlemode	Cat 5e
	OM1	OS2	Cat 6
	OM2	OS2/APC	Cat 6 _A
	OM3		
	OM4		

Do you need Accessories?

See page 7



MIPP™ Fiber Splice Box Single Module Standard Part Number Reference Guide

1 System build-up **MIPP™ Fiber Splice Box**

2 Number of Fibers **Single Module (Fiber count up to 12)**

3 Mounting Type **DIN rail (wall mount also available)**

4 Adapter **LC *** **SC ***

5 Application		OM1	OM2	OM3	OS2	OM1	OM2	OM3	OS2
Color		Beige	Beige	Aqua	Blue	Beige	Beige	Aqua	Blue
Adapter sleeve material		Phosphor Bronze		Ceramic		Phosphor Bronze		Ceramic	
Part Number		MIPP-01-030	MIPP-01-033	MIPP-01-003	MIPP-01-005	MIPP-01-007	MIPP-01-010	MIPP-01-012	MIPP-01-013
Accessories									
Pigtails	Part Number	MIPP-01-031	MIPP-01-002	MIPP-01-004	MIPP-01-006	MIPP-01-008	MIPP-01-011	MIPP-01-037	MIPP-01-014
Brilliance Connectors	Part Number	MIPP-01-032	MIPP-01-001	MIPP-01-034	MIPP-01-035	MIPP-01-036	MIPP-01-009	MIPP-01-038	MIPP-01-039

4 Adapter **ST ***

5 Application		OM1	OM2	OM3	OS2
Color		Beige	Beige	Aqua	Blue
Adapter sleeve material		Phosphor Bronze		Ceramic	
Part Number		MIPP-01-015	MIPP-01-042	MIPP-01-017	MIPP-01-019
Accessories					
Pigtails	Part Number	MIPP-01-040	MIPP-01-016	MIPP-01-018	MIPP-01-045
Brilliance Connectors	Part Number	MIPP-01-041	MIPP-01-043	MIPP-01-044	MIPP-01-046

* SC and ST available also in metal adapters via Customer Service

* E-2000™ adapters available via Customer Service

* OM4 fibers available via Customer Service

Material	Steel (powder coated)
Weight (gr)	560
Protection Class	IP40
Cable Entry	<ul style="list-style-type: none"> • 3 possible cable entries • 1 M16 Gland installed • 1 extra M16 Gland supplied
Diameter Cable	3 to 10 mm
Cable Types	loose-tube, mini-breakout or breakout cables of up to 12 fibers
Mating Cycles	500 cycles (E-2000™ 1000 cycles)



MIPP™ Copper Patch Panel Single Module Standard Part Number Reference Guide

1	System build-up	MIPP™ Copper Patch Panel								
2	Number of Copper Cables	Single Module (Copper cables up to 4)								
3	Mounting Type	DIN rail (wall mount also available)								
4	Keystone	Unshielded KeyConnect			Shielded KeyConnect			Unshielded Couplers	Shielded Couplers	
5	Category	CAT 5e	CAT 6	Cat 6 _A	CAT 5e	CAT 6	Cat 6 _A	Cat 6 _A	Cat 6 _A	
	Weight (gr)	515			640			515	640	
	Connector Part Number	AX101310	AX101321	AX102283	AX104595	AX104596	AX104562	AX104024	AX104501	
	4 Keystone*	Part Number	MIPP-01-021	MIPP-01-020	MIPP-01-022	MIPP-01-023	MIPP-01-024	MIPP-01-025	MIPP-01-026	MIPP-01-027

*Available also with 2 keystones via Customer Service

Material	Steel (powder coated)
Protection Class	IP20
Cable Entry	<ul style="list-style-type: none"> • 1 cable entry point • with tie wrap fixing latch
Diameter Cable	4 x 7.5 mm
Mating Cycles	750 cycles

MIPP™ Fiber Splice Box Standard Part Number Reference Guide

Max Number Fibers	Type of Module	Mounting Type		Adapter Type				Application					Accessories		Part Number	
		DIN rail	Wall Mount	LC	SC	ST	E-2000™	Multimode			Singlemode		Pigtails	Brilliance Connectors		
								OM1	OM2	OM3	OS2	OS2/APC				
	No Housing - Blind Module															MIPP-00-001
12	No Housing Single			•					•							MIPP-00-002
12	No Housing Single				•				•							MIPP-00-003
12	No Housing Single				•							•				MIPP-00-004
12	1 x Single	•		•				•								MIPP-01-030
12	1 x Single	•		•				•					•			MIPP-01-031
12	1 x Single	•		•				•						•		MIPP-01-032
12	1 x Single	•		•					•							MIPP-01-033
12	1 x Single	•		•					•				•			MIPP-01-002
12	1 x Single	•		•					•					•		MIPP-01-001
12	1 x Single	•		•						•						MIPP-01-003
12	1 x Single	•		•						•			•			MIPP-01-004
12	1 x Single	•		•							•			•		MIPP-01-034
12	1 x Single	•		•								•				MIPP-01-005
12	1 x Single	•		•								•		•		MIPP-01-006
12	1 x Single	•		•								•			•	MIPP-01-035
12	1 x Single	•			•			•						•		MIPP-01-007
12	1 x Single	•			•			•						•		MIPP-01-008
12	1 x Single	•			•			•						•		MIPP-01-036
12	1 x Single	•			•				•							MIPP-01-010
12	1 x Single	•			•				•					•		MIPP-01-011
12	1 x Single	•			•				•					•		MIPP-01-009
12	1 x Single	•			•					•						MIPP-01-012
12	1 x Single	•			•					•				•		MIPP-01-037
12	1 x Single	•			•					•				•		MIPP-01-038
12	1 x Single	•			•						•					MIPP-01-013
12	1 x Single	•			•						•			•		MIPP-01-014
12	1 x Single	•			•						•			•		MIPP-01-039
12	1 x Single	•				•		•								MIPP-01-015
12	1 x Single	•				•		•						•		MIPP-01-040
12	1 x Single	•				•		•						•		MIPP-01-041
12	1 x Single	•				•			•							MIPP-01-042
12	1 x Single	•				•			•				•			MIPP-01-016
12	1 x Single	•				•			•					•		MIPP-01-043
12	1 x Single	•				•				•						MIPP-01-017
12	1 x Single	•				•				•				•		MIPP-01-018
12	1 x Single	•				•				•				•		MIPP-01-044
12	1 x Single	•				•				•				•		MIPP-01-019
12	1 x Single	•				•				•				•		MIPP-01-045
12	1 x Single	•				•				•				•		MIPP-01-046
1 x 24	1 x Double	•					•					•		•		MIPP-10-001
1 x 24	1 x Double	•			•				•							MIPP-10-002
1 x 24	1 x Double	•			•					•						MIPP-10-003
1 x 24	1 x Double	•			•						•					MIPP-10-004
1 x 24	1 x Double	•			•						•			•		MIPP-10-005
1 x 24	1 x Double	•				•		•						•		MIPP-10-006
1 x 24	1 x Double	•				•		•						•		MIPP-10-007
1 x 24	1 x Double	•				•				•						MIPP-10-008
1 x 24	1 x Double	•				•					•			•		MIPP-10-009
1 x 24	1 x Double	•	•					•						•		MIPP-10-010
1 x 24	1 x Double	•			•			•								MIPP-10-011
1 x 24	2 x Single	•			2x				2x							MIPP-02-001
1 x 24	2 x Single	•			2x				2x				2x			MIPP-02-002
1 x 24	2 x Single	•				2x		2x						2x		MIPP-02-003
1 x 24	2 x Single	•				2x		2x						2x		MIPP-02-004
1 x 24	2 x Single	•				2x			2x							MIPP-02-006
1 x 24	2 x Single	•				2x					2x					MIPP-02-008
48	2 x Double	•			2x						2x					MIPP-20-001
48	4 x Single	•			4x				4x							MIPP-04-001



MIPP™ Copper Patch Panel Standard Part Number Reference Guide

Max Number of Cables	Type of Module	Mounting Type	Keystone Type				Cable Type			Part Number	
			DIN rail	KeyConnect		Couplers		Cat 5e	Cat 6		Cat 6 _A
				Unshielded	Shielded	Unshielded	Shielded				
	No Housing - Blind Module								MIPP-00-001		
4	No Housing Single			•		•			MIPP-00-005		
4	No Housing Single		•				•		MIPP-00-006		
4	1 x Single	•	•			•			MIPP-01-021		
4	1 x Single	•	•				•		MIPP-01-020		
4	1 x Single	•	•					•	MIPP-01-022		
4	1 x Single	•		•		•			MIPP-01-023		
4	1 x Single	•		•			•		MIPP-01-024		
4	1 x Single	•		•				•	MIPP-01-025		
4	1 x Single	•			•			•	MIPP-01-026		
4	1 x Single	•						•	MIPP-01-027		
8	2 x Single	•	•				•		MIPP-02-010		
16	4 x Single	•						4x	MIPP-04-002		

MIPP™ Mix Standard Part Number Reference Guide

Type of Module	Mounting Type	Module 1	Module 2	Module 3	Module 4	Module 5	Part Number
	DIN rail						
No Housing - Blind Module							MIPP-00-001
2 x Single	•	Fiber: SC OM1 with Pigtailed	Copper: Unshielded Keystones Cat 5e				MIPP-02-005
2 x Single	•	Fiber: SC OS2	Copper: Unshielded Keystones Cat 6				MIPP-02-007
2 x Single	•	Fiber: SC OS2 with Pigtailed	Copper: Unshielded Keystones Cat 5e				MIPP-02-009
3 x Single	•	Copper: Unshielded Coupler, Cat 6	Copper: Unshielded Coupler, Cat 6	Fiber: SC OM3			MIPP-03-001
3 x Single	•	Copper: Unshielded Coupler, Cat 5e	Fiber Double Module: ST OM2	Fiber Double Module: ST OM2			MIPP-21-001
5 x Single	•	Fiber: LC OS2 with Pigtailed	Copper: Unshielded Coupler, Cat 6 _A	Blind Module	Blind Module	Blind Module	MIPP-05-001

*For more information on other configurations please contact Customer Service

Fit for any industry

MIPP™ is ideal for use in a wide range of industrial networking applications requiring maximum system reliability and flexibility. The industrial design makes it highly suited for use in Machine Building, Transportation, Alternative Power Generation, Power Transmission & Distribution, and Oil & Gas markets, as well as more general use in enterprise, buildings and other applications.

Always Stay Ahead with Belden

In a highly competitive environment, it is crucial to have reliable partners who are able to add value to your business. When it comes to signal transmissions, Belden is the number one solutions provider. We understand your business and want to know your specific challenges and targets to see how effective signal transmission solutions can push you ahead of the competition. By combining the strengths of our three leading brands, Belden®; Hirschmann™; and Lumberg Automation™, we are able to offer the solution you need. Today it may be a single cable, a switch or a connector, thus solving a specific issue; tomorrow it can be a complex range of integrated applications, systems and solutions.

We guarantee the superior performance of your mission-critical systems, even in the most demanding circumstances. If signal transmission is vital to your business, get in touch with the partner that delivers. Be certain. Belden.





MIPP™
**Delivering peace
of mind to network
engineers and
system installers.**

See www.beldensolutions.com for a complete listing of Belden locations.



**Be certain
you stay
in touch.**

**CONTACT FOR
BELDEN®
BRAND**

Edisonstraat 9
5928 PG Venlo
The Netherlands
Phone: +31-77-3878-555
Fax: +31-77-3878-488
www.beldencables-emea.com
venlo.salesinfo@belden.com

**CONTACT FOR
HIRSCHMANN™
BRAND**

Stuttgarter Straße 45-51
72654 Neckartenzlingen
Germany
Phone: +49-7127-14-0
Fax: +49-7127-14-1970
www.hirschmann.com
inet-sales@belden.com

**CONTACT FOR
LUMBERG AUTOMATION™
BRAND**

Im Gewerbepark 2
58579 Schalksmühle
Germany
Phone: +49-2355-5044-000
Fax: +49-2355-5044-333
www.lumberg-automation.com
icos-sales@belden.com