



SEPTMBER 2020

# Modular support system for conduits and cables

ABB PMA Global Product Management

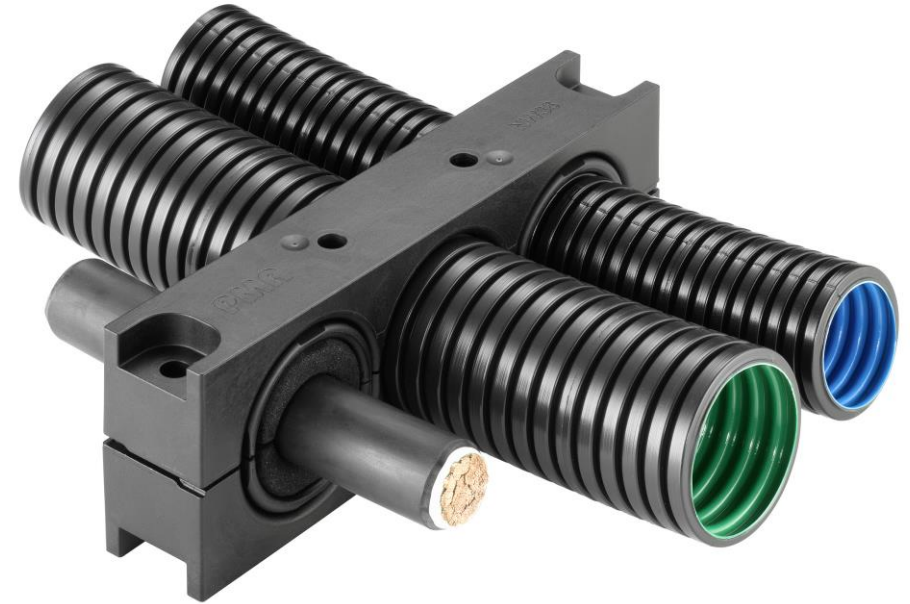
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# Modular support system for conduits and cables

## Foreword

### New modular support system for rolling stock

- ABB PMA presents **BGPM**, the **new generation** of modular support system for conduits and cables which **redefines the state of the art** for the rolling stock application in terms of **ease of installation, flexibility, lightness and compactness**.



# Modular support system for conduits and cables

## Vision

“The most **comprehensive range of multiple support system for conduits and cables** which:



expands and **enhances the system** approach.



offers **unique installation solution** to our customers.



reinforces **brand recognition** in terms of innovation.



Provide the **highest safety standard**”



# Modular support system for conduits and cables

## Highlights of the project

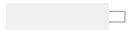
### Stage 1



- One fold: NW17, NW23, NW36, NW48
- Two fold: NW23
- Three fold: NW36
- Four fold: -



- NW17>NW10, NW17>NW12, NW36>NW29



- none

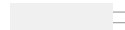
### Stage 2



- One fold: NW12, NW29
- Two fold: NW36
- Three fold: NW17, NW23, NW29, NW48
- Four fold: NW23, NW36, NW48



- NW23>NW17, NW29>NW23, NW48>NW36



- NW36

### Stage 3



- One fold: NW10
- Two fold: NW12; NW17, NW29, NW48
- Three fold: NW12
- Four fold: NW12, NW17, NW29



- completed



- NW10, NW12, NW17, NW23, NW29, NW48



**Available since March 2020**



**Available from December 2020**



**Available from end of Q2 2021**



# Modular support system for conduits and cables

## Target markets and applications

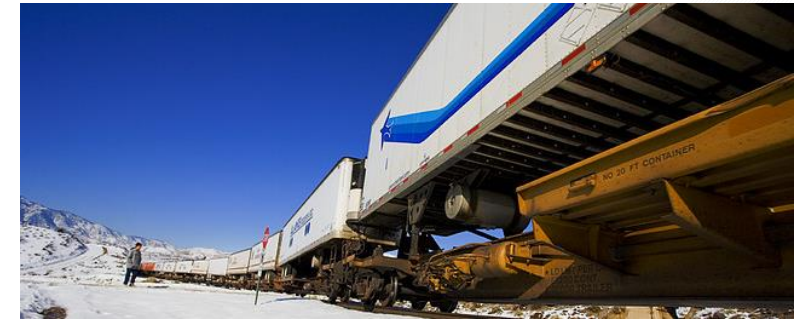
### High speed and intercity trains



### Commuter and regional trains



### Bogies and undercarriage



### Metros



### Trams and light rail



### Buses



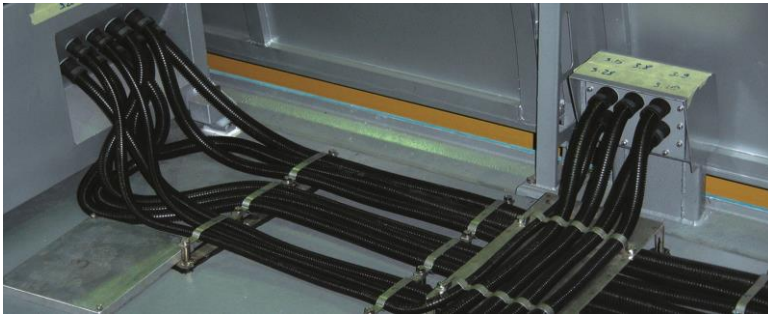


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# Modular support system for conduits and cables

The complexity of cable routing requires maximum flexibility to slash installation time!

**Train utilities**



**Jumper cables**



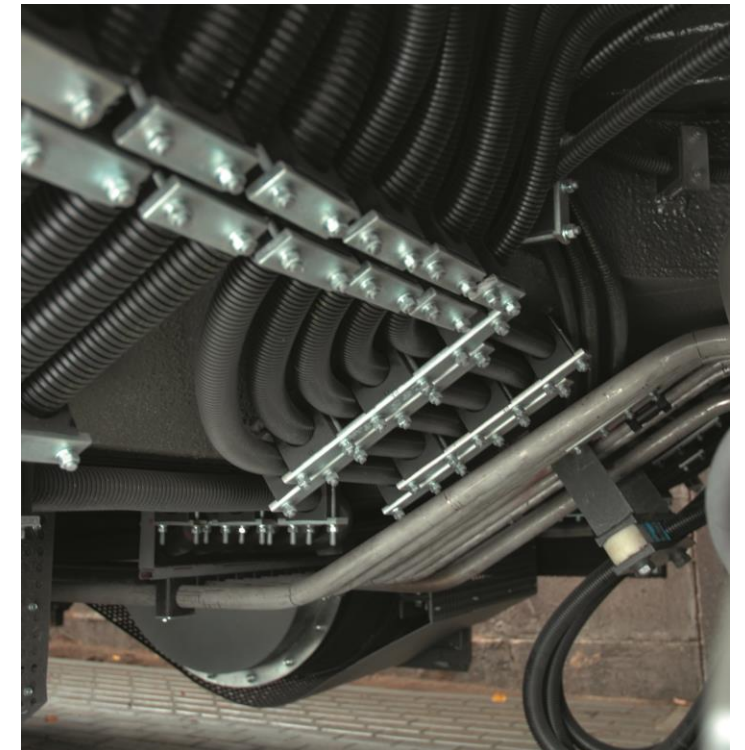
**Power distribution**



**External installation**



**Under carriage installation**



# Modular support system for conduits and cables

## Target markets and applications

### New modular support system for rolling stock

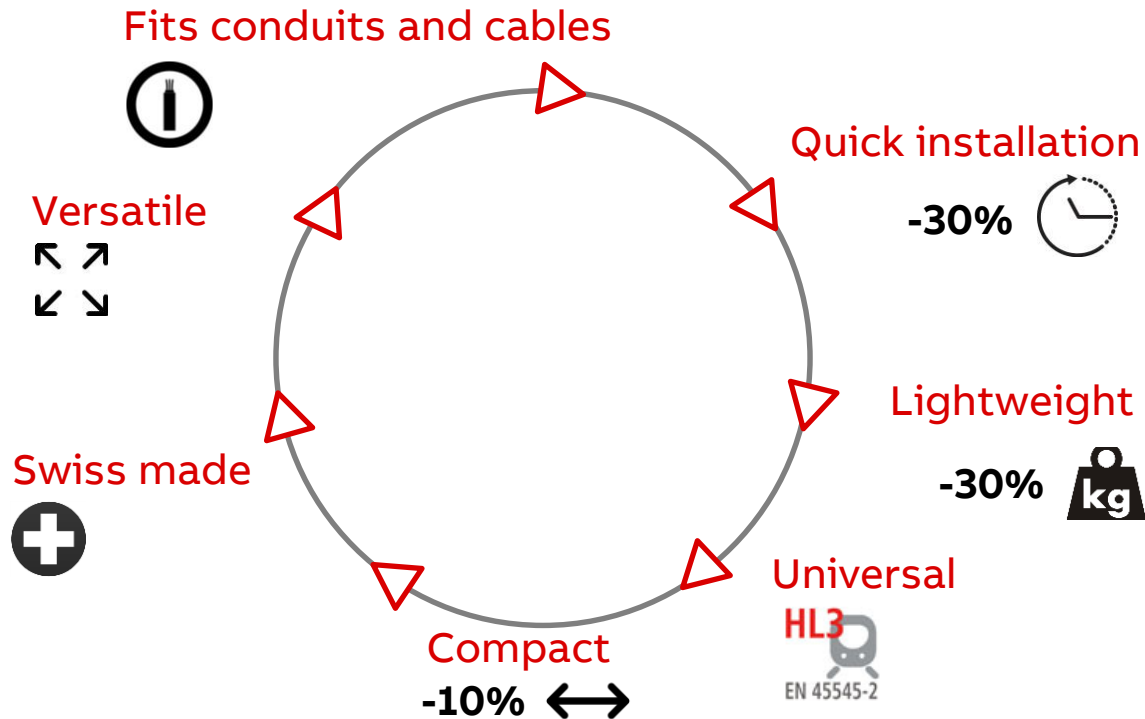
- The modular support system is specifically designed to hold in place conduits and cables of different and multiple cross sections in parallel.
- The conduits protect the cables which run all along the train, under the floor or over the ceiling (depending on the type of vehicle), from one carriage to another.
- The conduits have to be fixed to the structure of the train or bogie at regular lengths.
- For inter-carriage jumper cable, not only do the conduit need fixation, but the fixating element shall allow rotation too.
- ABB PMA BGPM fulfills the needs of rolling stock applications with the **highest ease of installation, compactness, lightness and safety standards (HL3)**.



# Modular support system for conduits and cables

## Benefits and key features

### Benefits



### Key features

- **Fits conduits and cables:** it provides total flexibility in terms of installation. In fact, the same support can be used to fix both conduits and cables.
- **Quick installation:** up to 30% time can be saved during installation. In fact, combinations of multiple conduits or cables can be clamped in one element which is then secured with only two screws.
- **Lightweight & compact:** external dimensions are reduced to the very minimum. Internal spacing between adjoining conduits is as small as it can be. Check the dimension table out!
- **Swiss made:** attention to details and installation comfort.
- **Versatile:** each element can host different combinations of both conduits and cables, in various and different sizes.
- **Universal:** compliant to both EN 45545-2 and NFPA 130



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# Modular support system for conduits and cables

## Benefits and key features

**The most comprehensive support system for conduits and cables**

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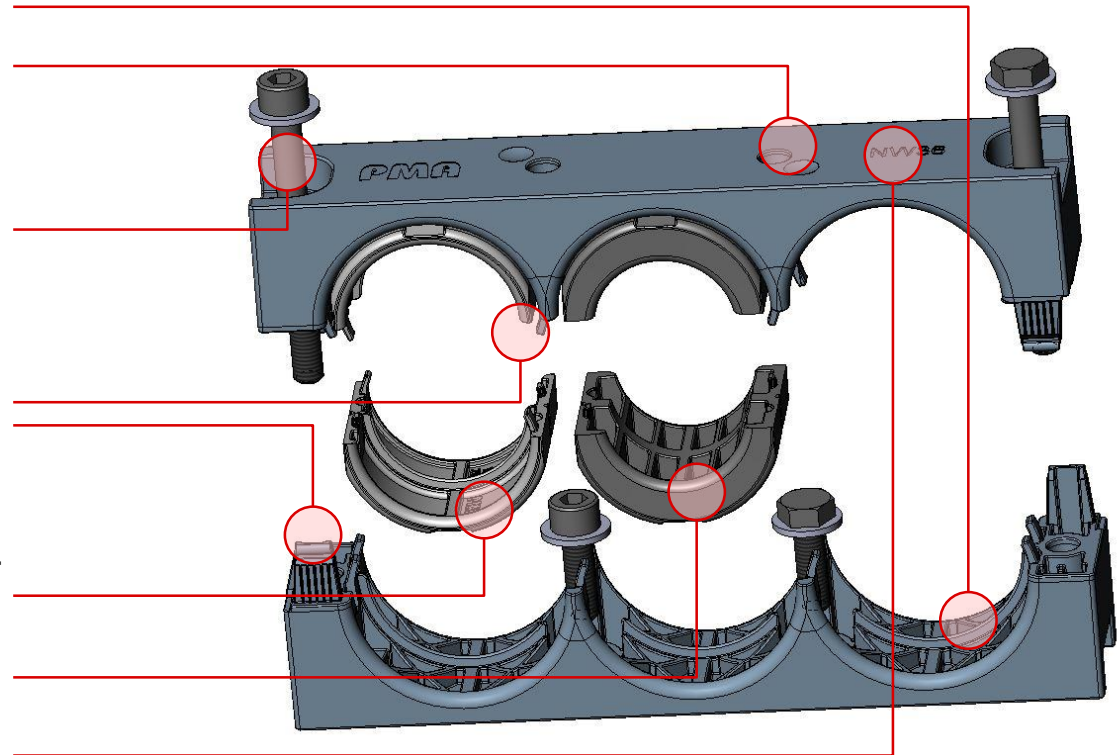


# Modular support system for conduits and cables

## Benefits and key features

### Description of the product design

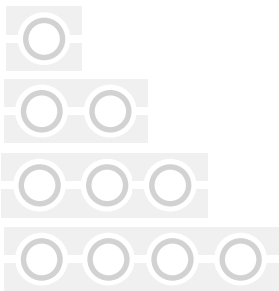
- Ribs: assure for strain relief to the conduit.
- Holes for pre-fixation: help to fix the bottom half support to the plate/chassis.
- M6 screws for all range: compatible with allen and hexagonal screws; an industry's standard which makes the installation possible with the same tool regardless of the size of the conduit holder.
- Asymmetrical pins and clips: facilitate the pre-fixation to the conduit before the two halves are screwed in. This allows the harness to be arranged elsewhere and then fixed on the train with the M6 screws.
- Reducer: allows to adapt the support holder to the next smaller conduit size and even further down.
- Cable adapter in soft material can be combined with reducers
- Size marking: display the size (NW) of the hole making the installation easier.



# Modular support system for conduits and cables

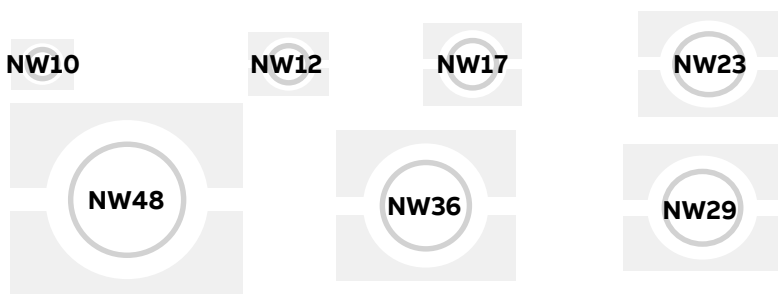
## Range overview and technical details

### Supports (4)



- For 1 conduit
- For 2 conduits
- For 3 conduits
- For 4 conduits

### Sizes (7)



### Reducers (6)

- NW17 > NW10
- NW17 > NW12
- NW23 > NW17
- NW29 > NW23
- NW36 > NW29
- NW48 > NW36



### Cable adapters (15)

Size	NW10	NW12	NW17	NW23	NW29	NW36	NW48
Max clamping range [mm]	7 – 3	9 – 5	15 – 11	22 – 18	26 – 22	34 – 30	46 – 42
Clamping range 1	7 – 3	9 – 5	15 – 11	20 – 16	25 – 21	34 – 30	46 – 42
Clamping range 2	–	–	12 – 8	18 – 14	22 – 18	31 – 27	43 – 39
Clamping range 3	–	–	–	–	–	28 – 24	40 – 36
Clamping range 4	–	–	–	–	–	–	37 – 33



# Modular support system for conduits and cables

## Installation

### 1. On C-rail



- The bottom half is anchored to the C-rail.
- The conduits are laid in place.
- The top is fixed with 2 M6 screws regardless of the width of the holder.

### 2. Pre-assembled



- The conduits are laid in place on the bottom.
- The top half support is clicked in place.
- The harness is moved to its destination and fixed with M6 screws.

### 3. Stacked



- Multiple conduit holders of same width are layered on top of one another.
- Appropriate M6 screws shall be used for fixation to the metal plate or C-rail.

### 4. Upside-down




- The top part is fixed on the ceiling.
- Conduits are clicked into the top half.
- The bottom half is screwed in with M6 screws.

**The versatility of the modular support system complies with all kinds of installation requirements!**

# Modular support system for conduits and cables

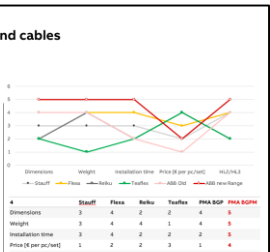
Documents and tools already available

## Overview, benchmark and FAQ



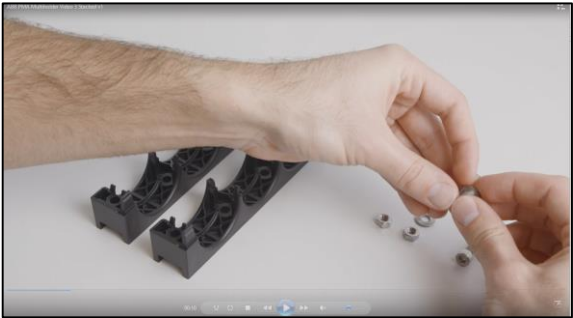
MARCH 2020  
**Modular support system for conduits and cables**  
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nd cables



Dimensions	Material	Installation time	Price (€ per pc/m)	ABB PMA
3	Steel	1	2	2
4	Steel	1	2	2
5	Steel	1	2	2
6	Steel	1	2	2
7	Steel	1	2	2
8	Steel	1	2	2
9	Steel	1	2	2
10	Steel	1	2	2
11	Steel	1	2	2
12	Steel	1	2	2
13	Steel	1	2	2
14	Steel	1	2	2
15	Steel	1	2	2
16	Steel	1	2	2
17	Steel	1	2	2
18	Steel	1	2	2
19	Steel	1	2	2
20	Steel	1	2	2
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26	Steel	1	2	2
27	Steel	1	2	2
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40	Steel	1	2	2
41	Steel	1	2	2
42	Steel	1	2	2
43	Steel	1	2	2
44	Steel	1	2	2
45	Steel	1	2	2
46	Steel	1	2	2
47	Steel	1	2	2
48	Steel	1	2	2
49	Steel	1	2	2
50	Steel	1	2	2

## Installation videos



## Web and PMA infopool



Modular support system for conduits and cables

For use in rolling stock applications

The most versatile, compact and lightest design of its kind on the market

PMA presents the new generation of modular support system for conduits and cables which redefine the state-of-the-art for rolling stock applications in terms of ease of installation, flexibility, lightness, durability and compactness.

**Lightweight, compact with high impact resistance**

BGPM is a lightweight, compact solution with high impact resistance. Thanks to the new design, internal dimensions are reduced for any material and internal space between adjoining conduits is very small. The system is specifically designed for use in rolling stock construction and other applications where freedom of parallel running conduits and cables is required.

**Save up to 30% of installation time**

Thanks to the modular system, up to 30% of installation time can be saved. Each element can hold

## Gross price list VP2



Gross Price List

## Technical data sheets



PMA Accessories - BGPM - System support  
Holder series for 1 - 3 conduits




PMA Accessories - BGPM - half-shell  
Reduction half-shell

## Life cycle management

Modular support system for conduits and cables

BGP life cycle



A smooth phase out will be guaranteed to manage specifications and ongoing projects!

ABB

# Modular support system for conduits and cables

Documents and tools, available by December 2020

## Case study (Bernmobil)



## Brochure



## Light rail video



## A4 advert



## Digital selection tool

### Modular support system for conduits and cables

The most versatile, compact and lightest design of its kind on the market. Each element can hold different combinations of both, conduits and cables in various sizes. Multiple conduits and cable in various sizes can be clamped in one element.

Start by selecting your desired solution:

ALL CONDUITS HAVE ONE OR SAME SIZE

CONDUITS HAVE DIFFERENT SIZES



3D BY ASSEMBLY VIDEO

SIZES & TECHNICAL INFORMATION

PMA

ABB

## High-res pictures





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# Virtual PMA exhibition live webinars

## The Webinars:

**Tuesday, 22nd September 2020, 9:00 am and 5:00 pm CET (for ½ hour each)**

**Theme:** Ideal positioning and fixation of corrugated conduits and cables

Speakers: Sabine Schuler, Marco Castoldi and Firdes Arikan

**Wednesday, 23rd September 2020, 9:00 am and 5:00 pm CET (for ½ hour each)**

**Theme:** Multilayer technology in cable protection systems

Speakers: Heinz Seedorf and Hanspeter Trümpi

**Thursday, 24th September 2020 9:00 am and 5:00 pm CET (for ½ hour each)**

**Theme:** Cable protection systems with EMI suppression function

Speakers: Philip Allington and Holger Quest

**Friday, 25th September 2020, 9:00 am and 5:00 pm CET (for ½ hour each)**

**Theme:** Pitfalls of practical measurements – sealing tests under dynamic conditions

Speakers: Erich Stünzi and Hanspeter Trümpi

**ABB**