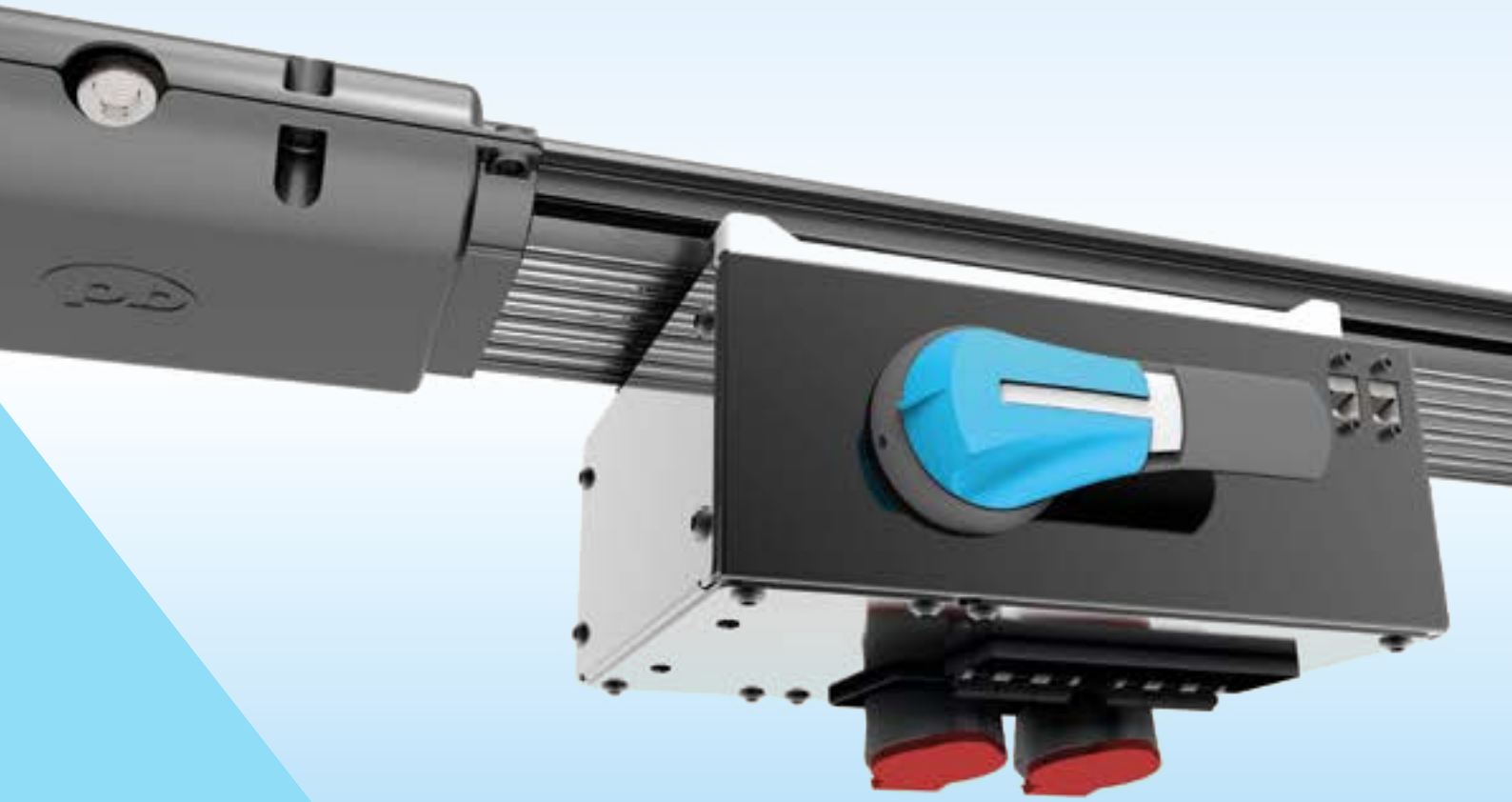
E+I ENGINEERING GROUP

INTELLIGENT MEDIUM POWERBAR

iMPB COPPER IEC



pb PowerBar

INTELLIGENT MEDIUM POWERBAR

iMPB

E+I Engineering's Intelligent Medium Powerbar (iMPB) is a 600 Volt encased track busway available with copper conductors. The range is available in two bar configurations from 160A to 630A. The bar is housed in an aluminium casing rated IP2X.

Key features:

- Unique open channel system allows tap offs to be placed anywhere along the bar
- Solid joint pack construction
- Up to 4m lengths
- Tap offs have mechanical/ electrical interlocks and secure to the bar with an 'earth first, break last' safety feature.

TECHNICAL FEATURES

iMPB is constructed from either high density conductivity copper or high density 55% conductivity aluminium. The conductors are insulated with a custom IEC certified thermoplastic material with outstanding heat characteristics. The insulation has excellent dielectric strength and is impact resistant.

iMPB is constructed with an aluminium housing providing a durable structure which also acts as a ground path.

The iMPB range can be engineered with an over-rated neutral option for busbar systems with non-linear loads. The additional neutral capacity prevents overloading caused by zero sequence harmonic currents.

E+I Engineering offer a 100% fully isolated ground for systems where earth isolation is required e.g. systems with heavy microprocessors, based loads or large computer based installations.

Busbar Rating (Amps)	Housing Size (inches)	
	4 Pole	5 Pole
160A	175 x 44mm	210 x 44mm
250A	175 x 44mm	210 x 44mm
400A	175 x 44mm	210 x 44mm
630A	180 x 52mm	215 x 52mm

Phase Configurations

Configuration	Phases	Neutral	Earth
TP/N	100%	100%	Case
TP/ON	100%	170%	Case
TP/NE	100%	100%	100%
TP/ONE	100%	170%	100%

LENGTHS AND JOINTS

Distribution Lengths

Busway Joints

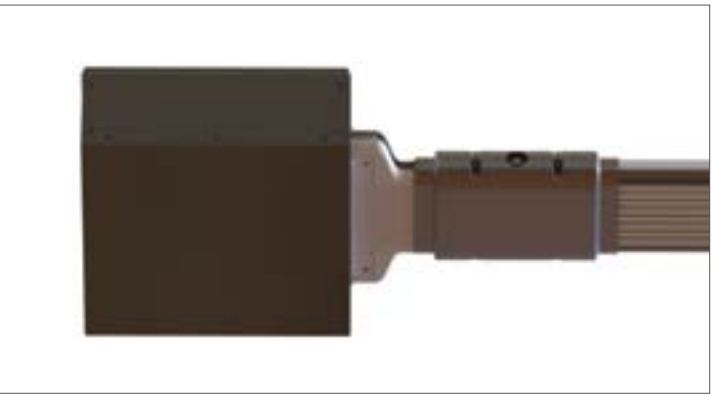
Distribution lengths

Distribution lengths are designed as an open track system; tap off units can be plugged in anywhere along the length of the busbar. The opening is finger safe meeting a rating of IP2X.

Straight lengths can be supplied at any length from 600mm - 4000mm.

The iMPB joint pack securely locks two feeder lengths together with a traditional busbar bolted joint. No special tooling is required and joints may be disassembled and reassembled easily.

iMPB uses custom designed thermally and electrically secure joint packs. Temperature monitoring of joints is available as an option.



Cable End Feed

End Feeds

E+I Engineering can provide standard cable end boxes with options for cable entry from various points. Centre feeds and load bank feeds can also be supplied to meet specific project requirements.

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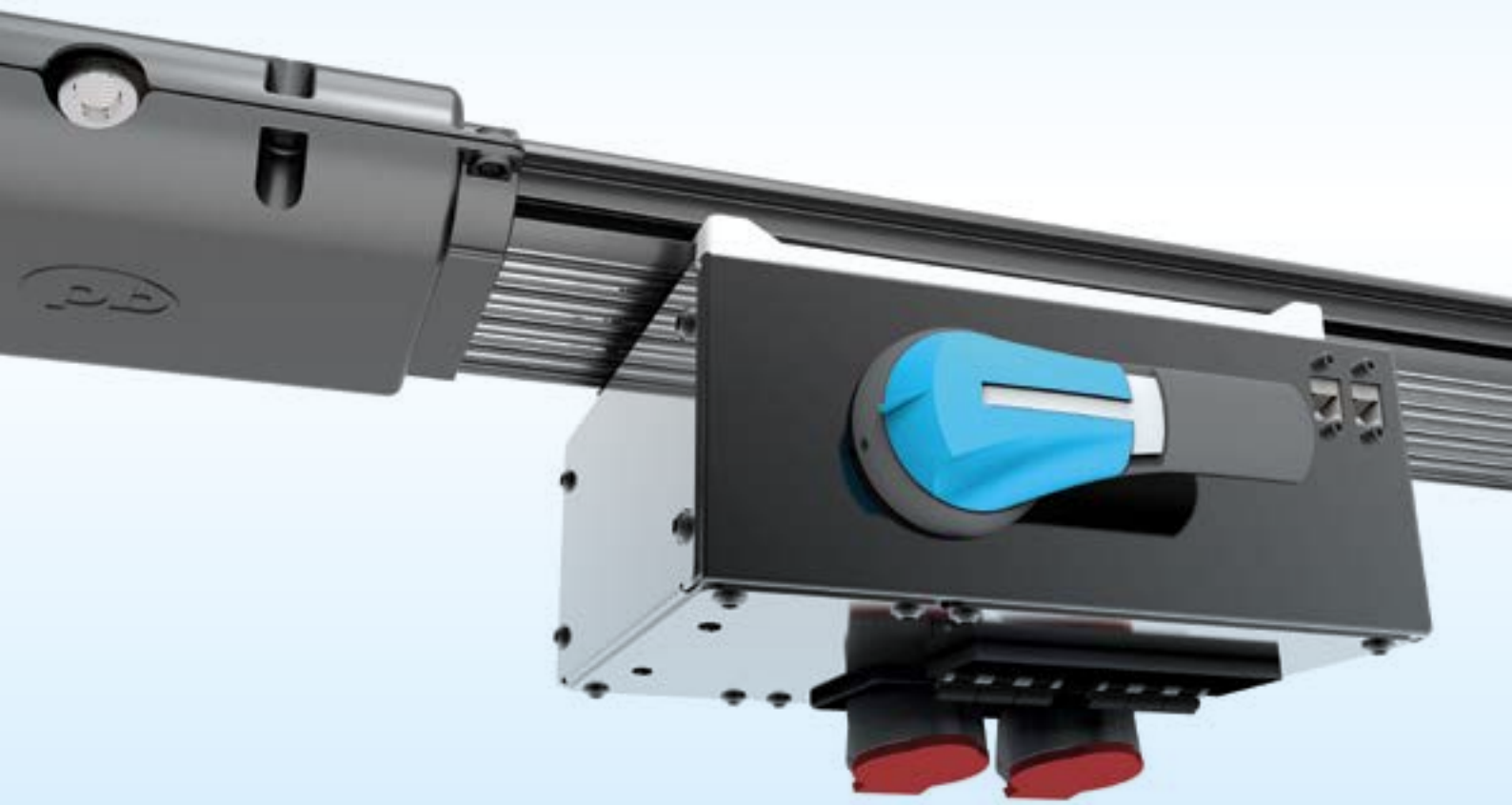
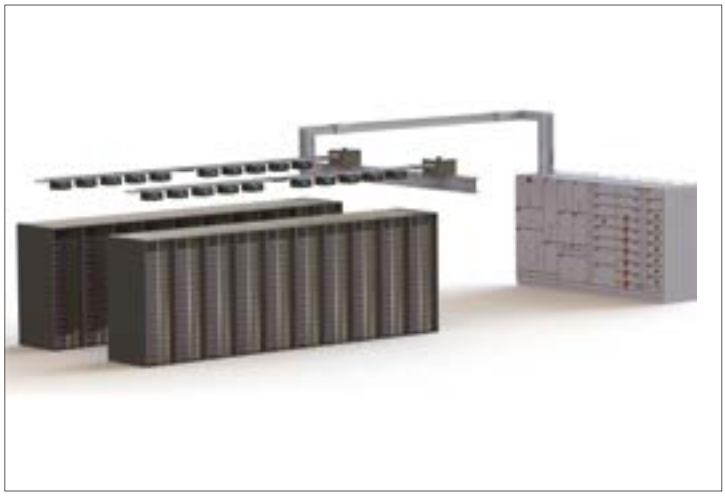


INSTALLATION

Typical Underfloor Arrangement

'Hot Aisle Cold Aisle' Arrangement



HPB to iMPB Connection

The modular design of iMPB allows it to be easily installed horizontally or vertically depending on specific project requirements.

Hanger brackets are supplied per length. These can be easily attached to drop rods for a seamless installation process.

iMPB can be connected directly to E+I Engineering's High Powerbar (HPB) to provide a full power solution.

TAP OFF UNITS

iMPB tap off units are engineered with the safety of the installer and user as the key criteria.

All tap off units have an 'earth first, break last' safety feature and can be safely installed using Powerbar's SafeWork Technology.

1. The units interlock onto the busway with a ground strip. This ensures that the ground is the first point of contact with the busbar system during installation.

2. The mechanical interlock secures the unit to the bar using high tensile strength lockable hardware which cannot be fitted incorrectly.

3. Once fitted to the bar, the engager handle can be turned. This lifts the contacts into the busway and has a positive lock once fully rotated.

Key features:

- SafeWork Technology
- Individual tap-off units rated up to 125A
- Interlock feature ensures polarities do not mismatch
- Tap-off units can be fitted with IEC 309 receptacles, NEMA receptacles or whip cords as required

Tap off units

METERING

iMPB offers advanced metering which allows the user to monitor, integrate and display data centre power information via RJ45 Ethernet plug-in connections.

Daisy Chaining Meters

Final circuit monitoring is integrated into the busway to measure the total load of the busbar and tap off units. Power calculations of total input power for each busway run can also be provided.

Options:

- Voltage for all three phases
- Current - phase, ground and neutral
- kW, KVa, kVAR, power factor, kWH

Advanced options:

- Voltage total harmonic distortion
- Overvoltage/ undervoltage alarm threshold
- Minimum and maximum current
- Demand and percentage load current
- Crest factor
- Warning and alarm threshold

It is also possible to monitor closed and trip status for each MCB. The status signals are fed back to the end feed using the integrated Ethernet cabling. The modules run in a daisy chain from meter to meter utilising the side channel in the housing for cabling.

TECHNICAL DATA

Technical Data				
Rated Current (A)	**160**	**250**	**400**	**630**
Rated Operational Voltage (V)	600	600	600	600
Rated Insulation Voltage (V)	1000	1000	1000	1000
Short Circuit				
1 Second (kA rms)	25	25	30	36
Peak Value (kA)	52.5	52.5	63	75.6
Short Circuit Conditional	70	70	100	70
Phase Conductor				
Cross Sectional Area (mm^2)	113.5	113.5	193.2	290
Neutral Conductor				
Cross Sectional Area (mm^2)	113.5	113.5	193.2	290
Isolated Earth Conductor				
100% Earth Cross Sectional Area (mm^2)	113.5	113.5	193.2	290
Housing Earth Path				
Cross Sectional Area - 4 Bar (mm^2)	1014	1014	1014	1073
Cross Sectional Area - 5 Bar (mm^2)	1151	1151	1151	1210
Overall Dimensions				
Height x Width of 4 Bar System (mm)	50 x 173	50 x 173	50 x 173	59 x 177
Height x Width of 5 Bar System (mm)	50 x 205	50 x 205	50 x 205	59 x 209
Weight				
Weight of 4 Bar System (kg/m)	9.7	9.7	13.4	17.5
Weight of 5 Bar System (kg/m)	12.1	12.1	15.7	20.8
Resistance (R)				
Resistance (mΩ/m) at 20°C	0.186	0.186	0.107	0.084
Reactance (X)				
Reactance (mΩ/m) at 50 Hz	0.110	0.120	0.095	0.086
Reactance (mΩ/m) at 60 Hz	0.132	0.144	0.114	0.103
Impedance (Z)				
Impedance (mΩ/m) at 50 Hz at 20°C	0.215	0.222	0.143	0.120
Impedance (mΩ/m) at 60 Hz at 20°C	0.227	0.235	0.156	0.133
Voltage Drop at Full Load 50Hz				
Power Factor = 0.7 (V/m)	0.062	0.103	0.110	0.147
Power Factor = 0.8 (V/m)	0.064	0.106	0.112	0.148
Power Factor = 0.9 (V/m)	0.065	0.107	0.110	0.144
Power Factor = 1.0 (V/m)	0.057	0.094	0.090	0.115
Voltage Drop at Full Load 60Hz				
Power Factor = 0.7 (V/m)	0.066	0.110	0.119	0.160
Power Factor = 0.8 (V/m)	0.068	0.113	0.119	0.159
Power Factor = 0.9 (V/m)	0.067	0.112	0.115	0.152
Power Factor = 1.0 (V/m)	0.057	0.094	0.090	0.115

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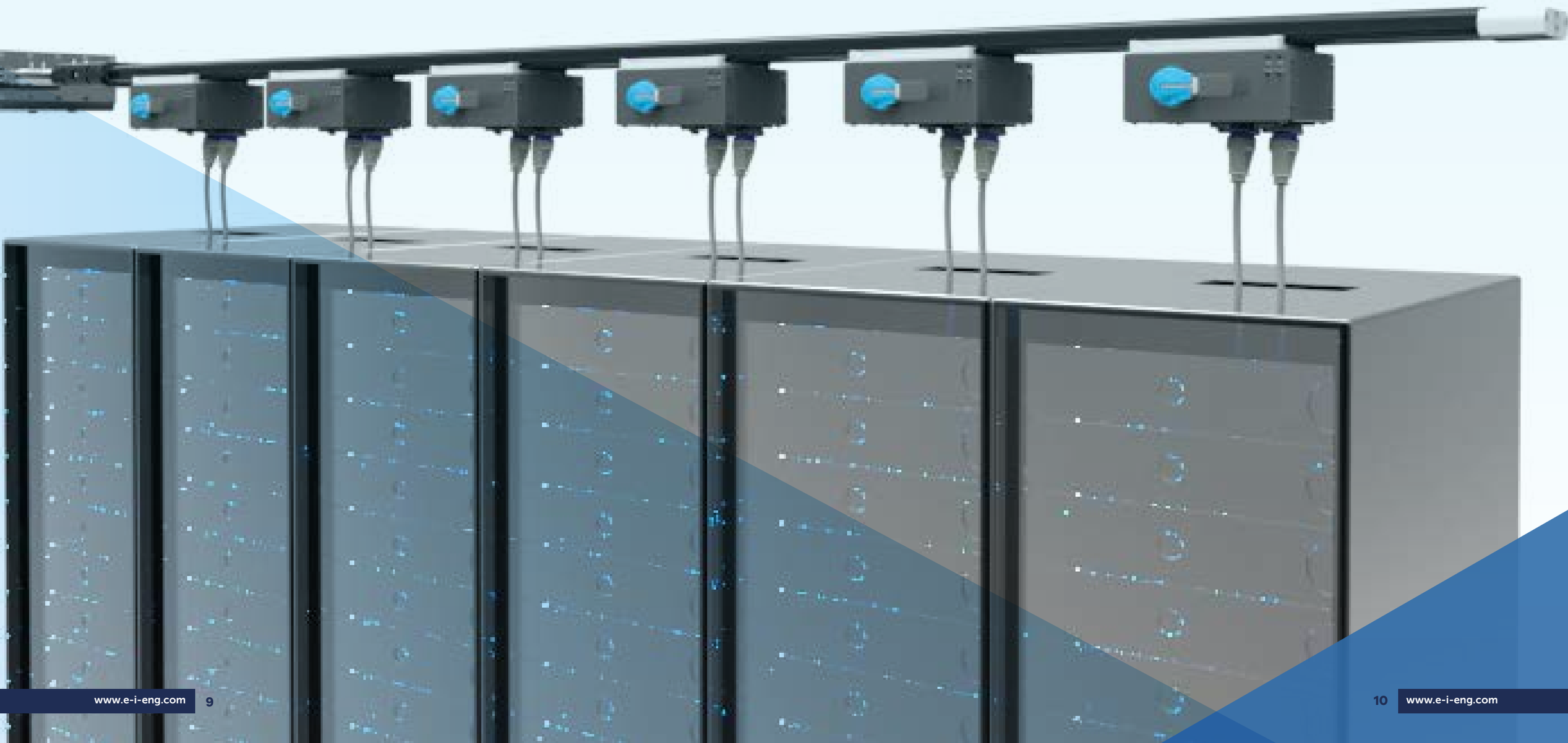

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iMPB/IEC/JUN23
PBG-STD-Q098