

# DATA BAR<sup>®</sup>

INTELLIGENT DATA HALL BUSWAY SYSTEM



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## About Anord Mardix

Anord Mardix is a leading provider of power distribution and protection equipment to the global market. We are a vendor of choice to many of the world's leading data center and cloud computing industries. We produce the most comprehensive product range in the market - from power, control, and monitoring solutions to our unique service capability. Our ability to customize and produce on a large scale delivers the most reliable end-to-end power systems to all our customers, from independent providers to hyper-scale leaders.

[www.anordmardix.com](http://www.anordmardix.com)



## Intelligent Data Hall Busway

The Databar busway system is a unique open channel modular busway system designed for mission critical rack power distribution in data centers. The system has been developed to be extremely compact and features patent pending design innovations in the integral plug-n-play coupling system. This allows for simpler and faster installation and tap-off actuator mechanisms that put safety at the forefront.

Data center operators can rest assured that they not only have the ability to add tap-offs as needed, but also easily extend or re-configure the busway system over their evolving white space.

Databar benefits from over fifty years of design and engineering expertise and its seamless integration with IBAR busbar trunking systems and power management systems delivers a complete package solution.

### Safety in Simplicity

Safe and simple were at the heart of Databar's development which is why there is one size for 250A - 630A and the same low profile housing accommodates both 4 and 5 pole systems while still maintaining the smallest possible footprint design.

Installing or extending the busway requires no separate joint pack. Fully factory tested busway assemblies feature custom integrated connectors that provide true plug-n-play functionality.

### Easy Installation

Tap-off fitting is carried out in two simple steps. First, the tap-off box is installed on the busway using our fast fit system. Second, the power contacts are engaged via a unique connection actuation system which not only controls the tap-off contacts, but also interlocks with the switching device to ensure that no load is connected during the engage operation.

### Compact Design

Databar's market leading range of tap-offs are extremely compact and, thanks to the small form factor busway design and actuation system, only require 1.2" of mounting clearance - the smallest in the industry!

Databar's combination of compact tap-off design and plug-n-play open-channel busway delivers a highly flexible solution to meet the needs of high density, mission critical, over-rack power distribution. The compact design goes a long way towards optimizing over rack space utilization where low ceiling head height and IT / fiber conduits compete.

### Testing & Certification

The Databar product has undergone extensive testing which has been independently certified by Intertek to ASTA standards and in accordance with IEC / BS EN 61439.

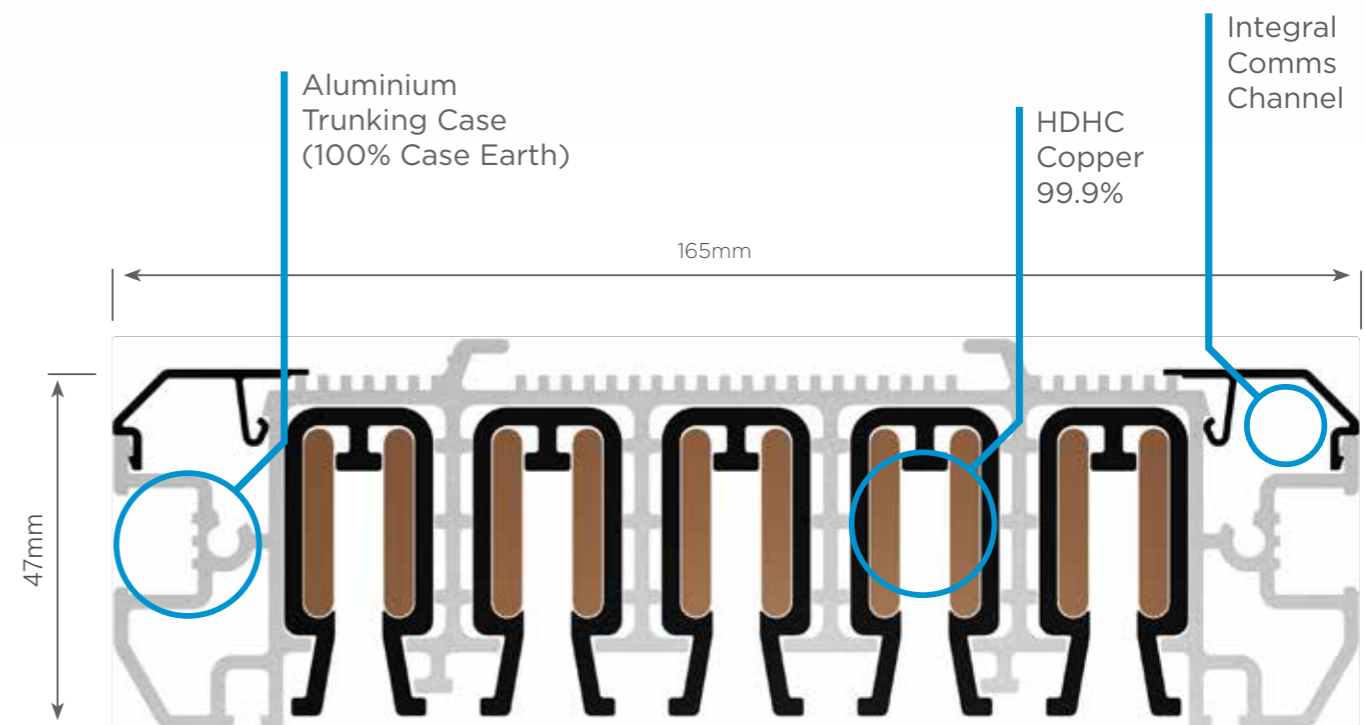
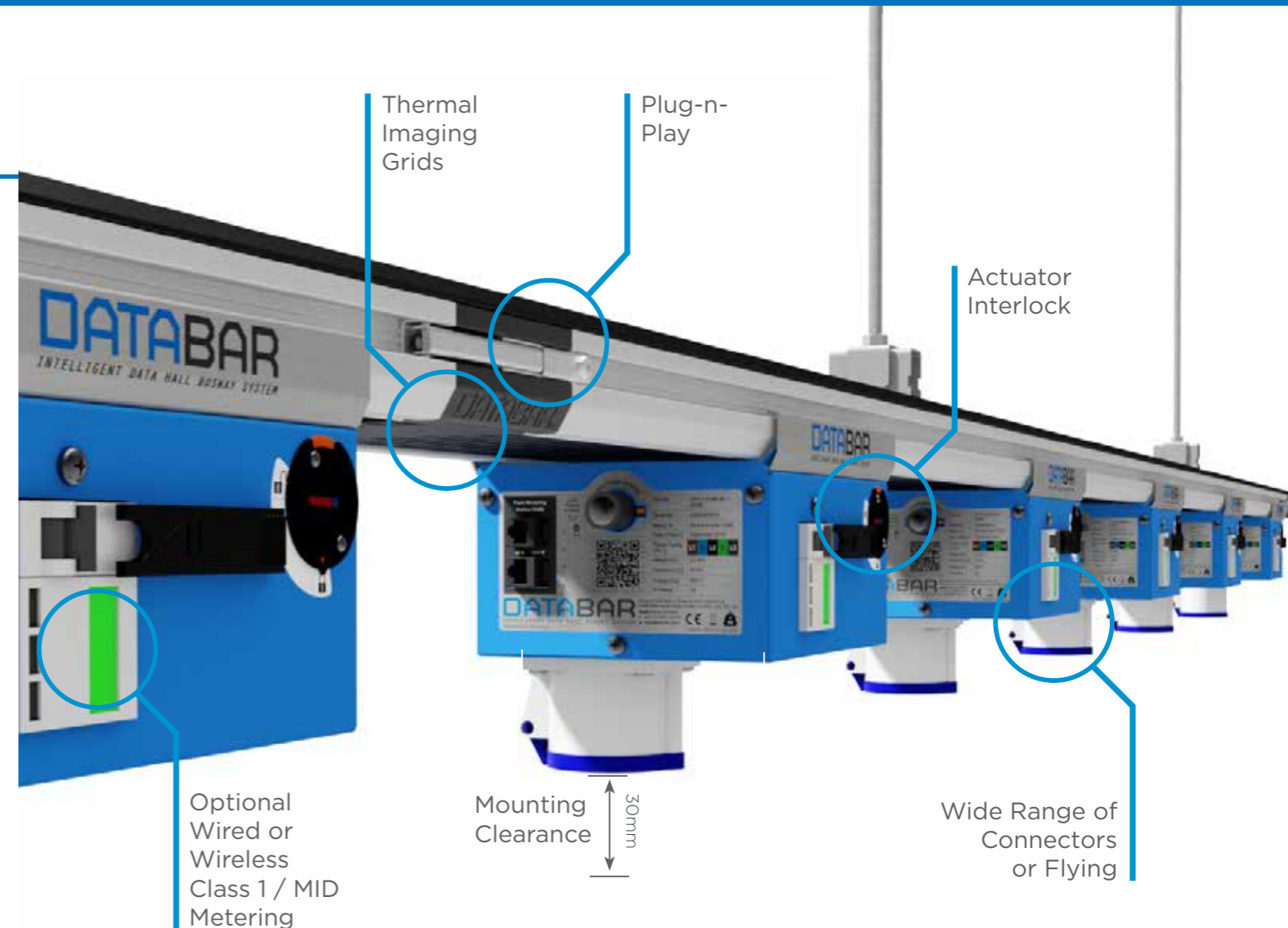
Additionally the busbar trunking system has been independently tested for resistance to Arc Flash in accordance with IEC / BS EN 61641 and major Seismic events (Richter magnitude 7.0-7.9).

## Features

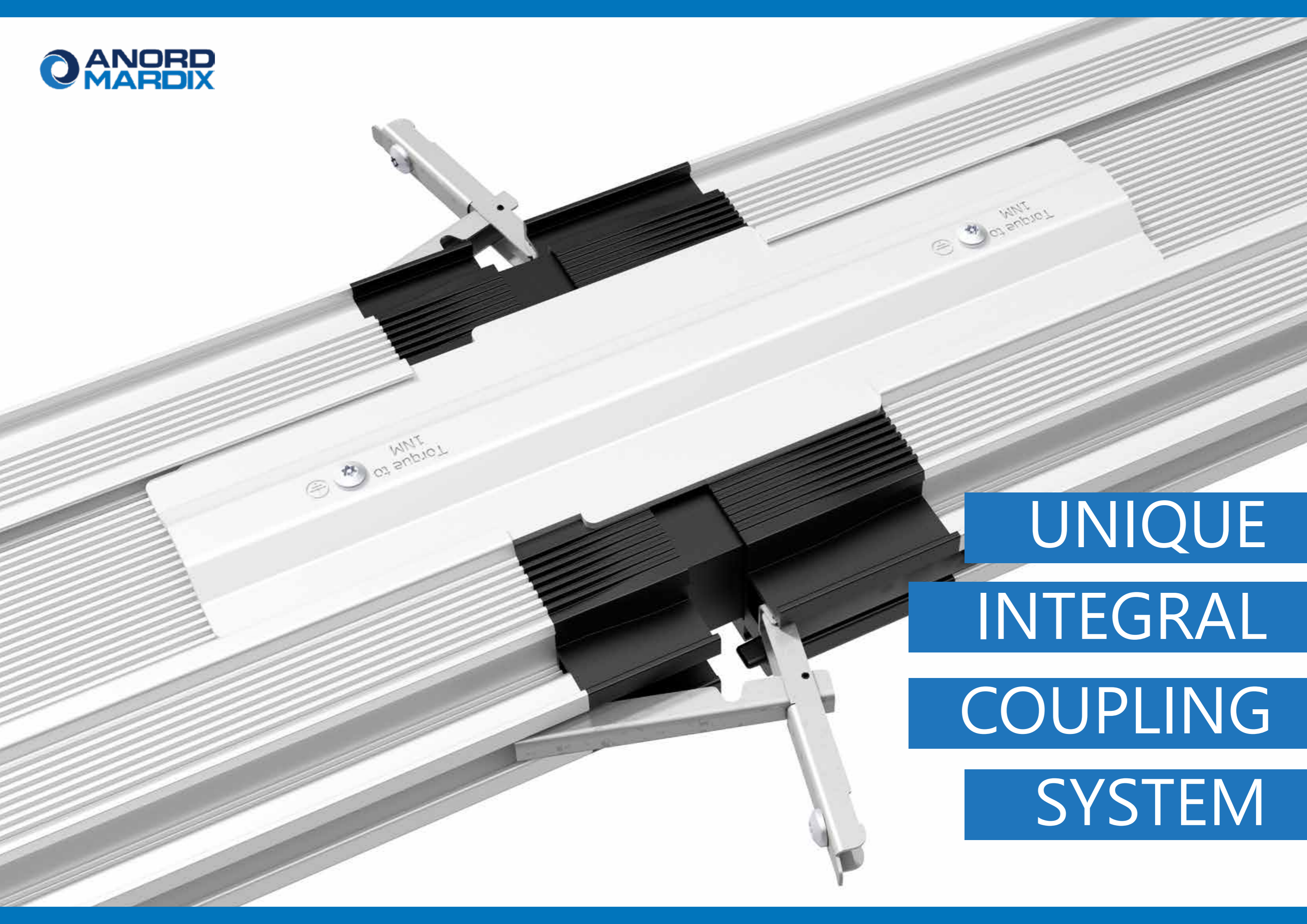
- Independently certified by ASTA to BS EN / IEC 61439
- 250, 400 or 630A systems with 4 or 5 poles in the same footprint design
- Continuous open channel permits tap-offs to be installed anywhere along the bar (IP2X)
- Ships in standard 3m lengths
- Integral plug-n-play jointing system with miniature busway joint zone
- Optional over-rated neutrals (see Technical Overview) or 100% integral earth conductor



**Intertek**



No need to scale, it's actual size.



**UNIQUE  
INTEGRAL  
COUPLING  
SYSTEM**

## Installation and Busway Accessories

### Installation

Busway is typically suspended on drop rods from supporting 'T-slot' ceilings or Uni-strut style support hardware. Three hangers are supplied with each length. Our team of installers can offer a one-stop-shop for install, testing (including load bank testing), commissioning, and power management systems integration. Alternative underfloor or server rack-top supports are also available to meet project specific requirements.



### Cable End Feeds

Busway is typically fed by cable from switchboards or high power busbar tap-offs. End feeds accommodate cable terminations and can be configured to left hand or right hand feed locations. Optional end-feed metering, indication or integral switch isolators are available to meet the specific project requirements. Other customization options include custom RAL colors and pre-punched glanding plates to suit specific cable requirements.



### End Caps

Each length of busway is terminated with an end cap. If there is a later requirement to extend or reduce the busway this end cap can be removed and re-fitted to the end of the run. Male and female end caps allow for left or right hand fed systems.



### Elbows

The vast majority of installations are straight runs, but, where there is a requirement to change direction, the system can employ elbows in left and right 90 degree angles as standard. Combinations of elbows can be used to circumnavigate building supports. Breaks in runs can also be engineered with cable connections between end feed units.



**Channel Closure Strip** is a clip in cover supplied in 10ft (3m) lengths, and is typically cut to length on-site and provides a blanking cover to the open channel busway. It can be fitted between tap-offs or across unutilized lengths.

**Comms Channel Cover** clips on to the housing to retain Ethernet cables in wired metering applications. Supplied in 10ft (3m) lengths with options to color code for different power streams.



## Technical Overview

Rated current	In [A]	250A, 400A, 630A
Rated operating voltage	Ue [V]	600
Rated insulation voltage	Ui [V]	1000
Frequency	f [Hz]	50/60
Degree of protection	IP	2X
Casing material		Aluminium
Conductor material		Cu (99.9%) BS EN 13601
Case dimensions (4 or 5 pole systems)	W x H mm	165 x 47
Phase, Neutral or Isolated Earth conductor CSA	CSA [mm <sup>2</sup> ]	194
Case Earth (PE) CSA	CSA [mm <sup>2</sup> ]	1457
Weight (4 pole systems)	p [kg/m]	12.9
Weight (5 pole systems)	p [kg/m]	14.5
Rated short-time current for three phase fault	Icw [kA] rms	30
Allowable peak current for three phase fault	Ipk [kA]	64.2
Rated conditional protection for three phase fault	Icc [kA]	50
Conditional protection peak current rating	Ipk [kA]	106
Impact Resistance	IK	IK08

Rating In [A]	Phase Configurations	Total No. Poles	Neutral % / No. Poles	Isolated Earth % / No. Poles
250	TP&N	4	100% / 1	
	TP&1.5N	4	150% / 1	
	TP&2N	4	200% / 1	
	TP&N&E	5	100% / 1	100% / 1
	TP&1.5N&E	5	150% / 1	100% / 1
	TP&2N&E	5	200% / 1	100% / 1
400	TP&N	4	100% / 1	
	TP&1.5N	4	150% / 1	
	TP&2N	5	200% / 2	
	TP&N&E	5	100% / 1	100% / 1
	TP&1.5N&E	5	150% / 1	100% / 1
630	TP&N	4	100% / 1	
	TP&1.5N	5	150% / 2	
	TP&2N	5	200% / 2	
	TP&N&E	5	100% / 1	100% / 1

## Tap-offs

Databar tap-offs have been designed for simple and safe installation. The range includes unique features which have been developed to vastly improve speed and ease of installation.

Tap-off units can be installed on the busway in just a few seconds using the fast fit system - a unique tool free mounting mechanism.

The units are available with a range of devices including MCBs and MCCBs. The standard range employs MCBs and these are typically available in 15, 36 and 50kA variants in ratings of 16, 32 and 63A and in Single Pole (SP), Double Pole (DP) and Triple Pole (TP); either with or without metering.

Outlet connector options include:

- Panel mounted straight or angled IEC 60309 receptacles
- Locking IEC 60320 appliance couplers (C19/C21 - 16A)
- Locking NEMA receptacles
- Drop cords / flying leads terminated with the required coupler

### Tap-off Installation Overview

The tap-off actuator cannot be operated without the tap-off first being mounted on the busway. This feature works in combination with the switching device interlock which is fitted as standard. The interlock prevents the switching device(s) from being turned on before installation / actuation.

Both the tap-off and busway have mechanical features which control orientation to ensure that the tap-off cannot be mounted incorrectly. The tap-off conductor connection springs are fully shrouded throughout the mounting operation which also provides for the make first, break last of the case ground.

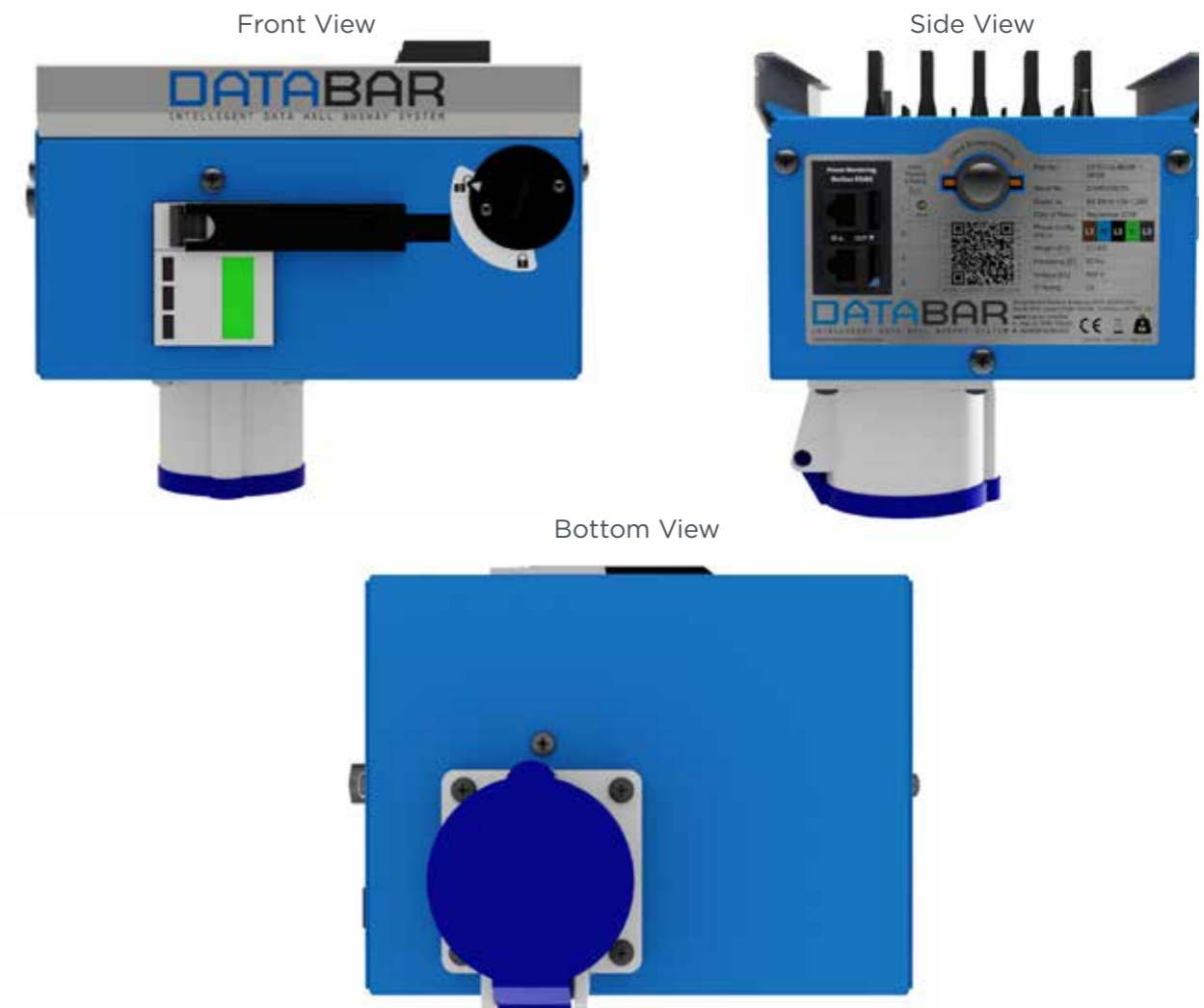
Once installed on the busway the patent applied for actuator can then be operated with the supplied actuator key. With the actuator turned ON the interlock is released and can be retracted to allow the switching device to be turned ON.

## Features

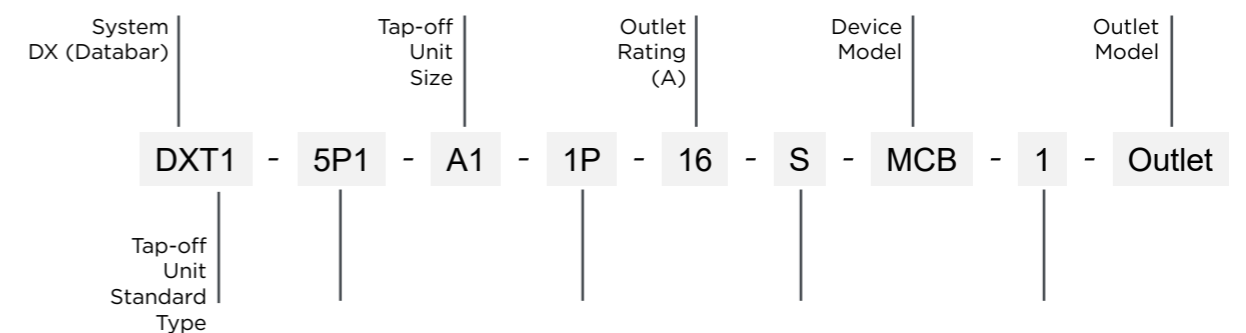
- Mechanically and electrically interlocked with the busway
- Case ground - make first, break last
- Vendor neutral 15, 20, 30, 50 and 60A SP/DP/TP MCBs or MCCBs
- Fast fit; takes only seconds to install on busway
- Requires only 1.2" mounting clearance
- Same Tap Offs fit all Databar ratings from 160A - 800A
- A wide range of options can be added including LED supply available / phase indication and breaker status monitoring



Example Tap-off - Metered Single Pole 32A MCB with Straight IEC 309 Receptacle

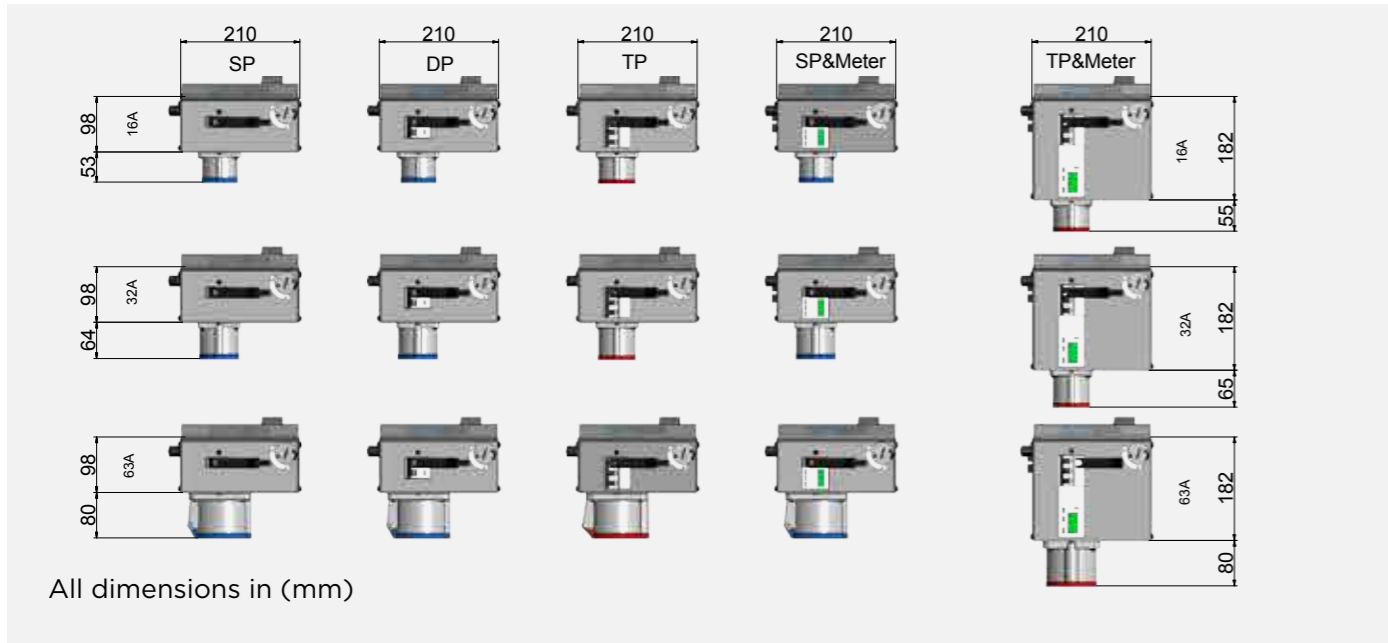


### Part Numbering Overview



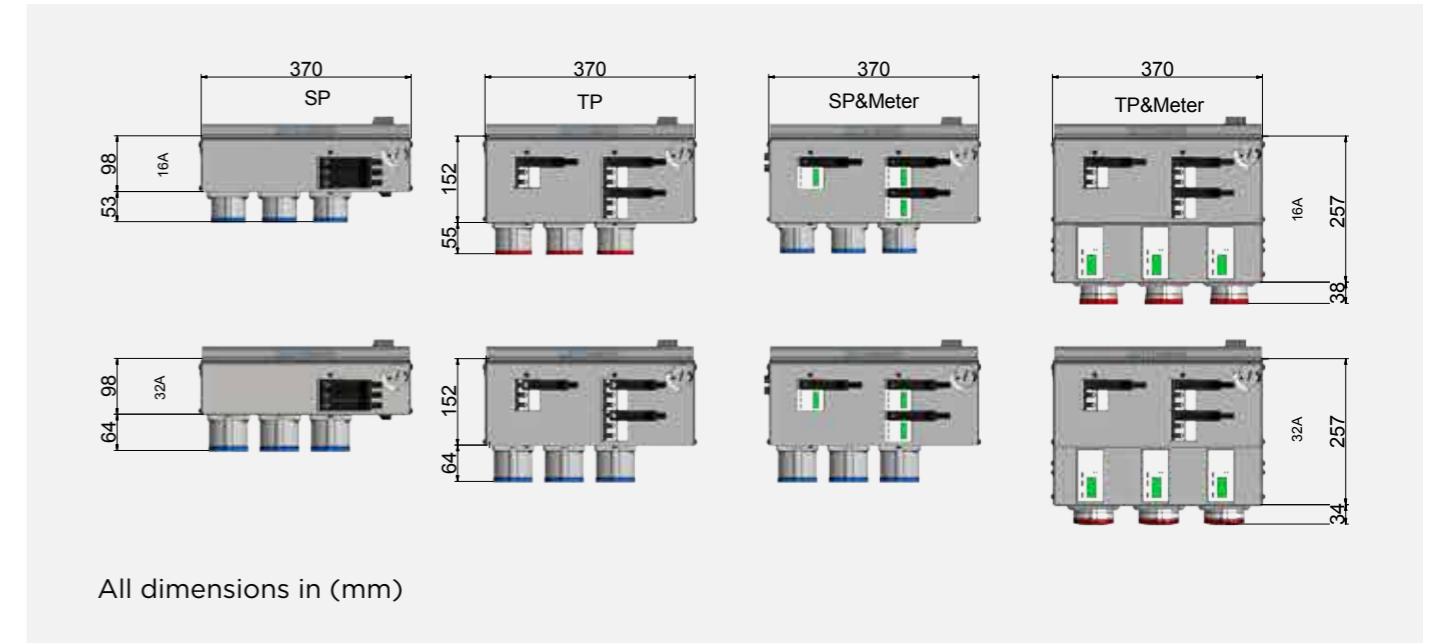
**MCB Tap-offs**

Single Outlet Tap-offs

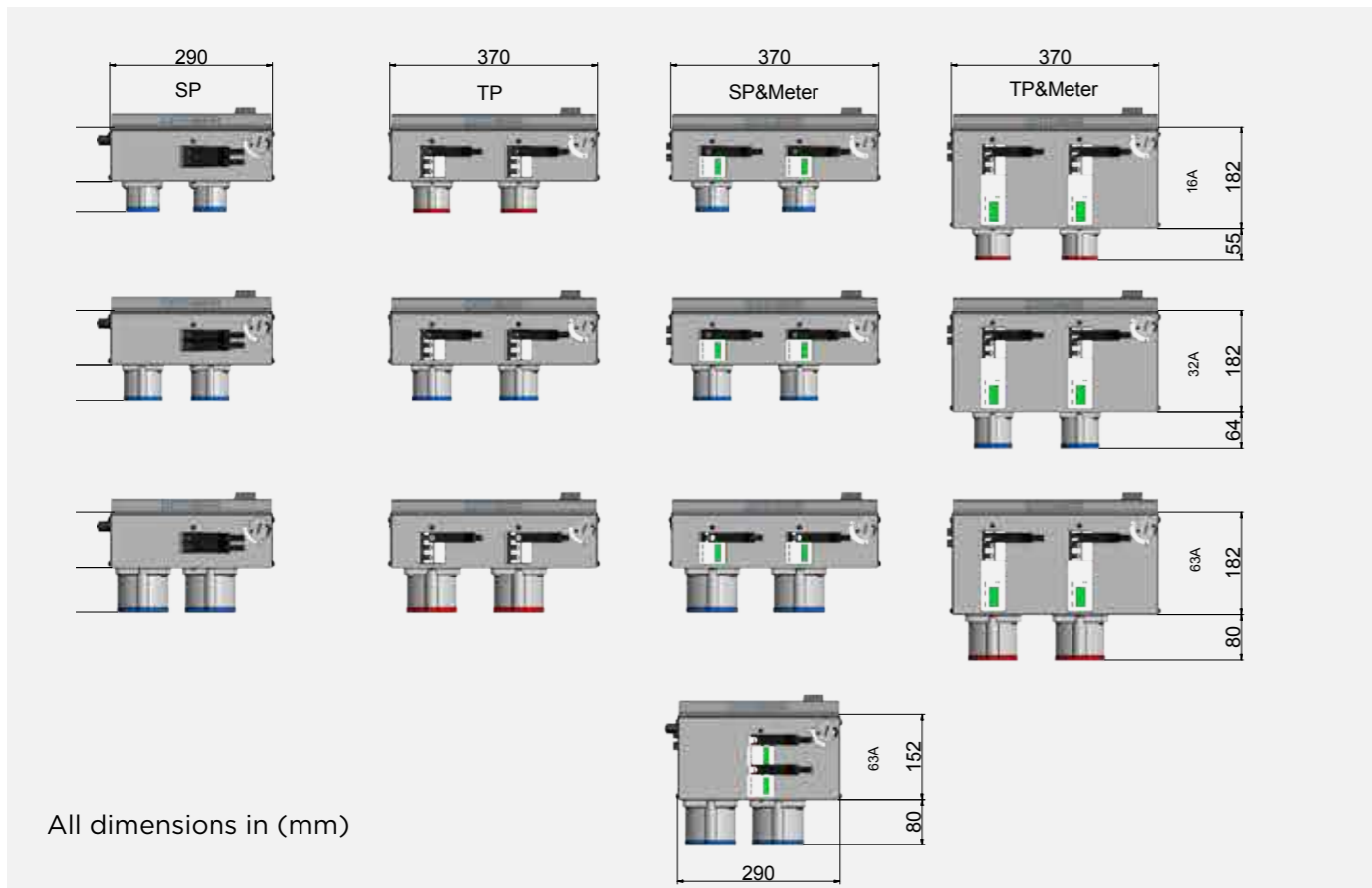


**MCB Tap-offs**

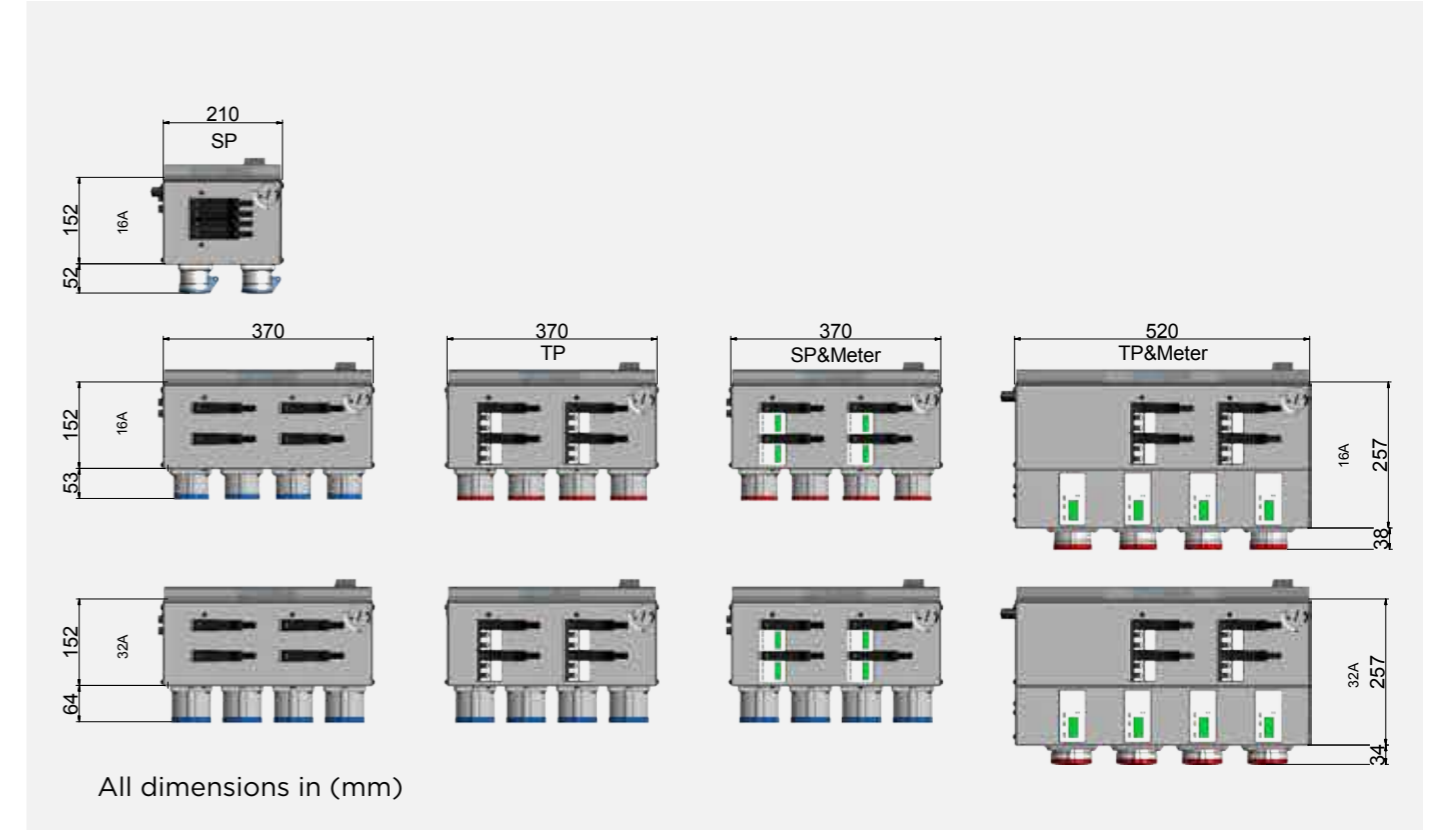
Triple Outlet Tap-offs



Double Outlet Tap-offs



Quad Outlet Tap-offs





FLEXIBLE

INTELLIGENT

RACKPOWER

DISTRIBUTION

## Power and Environmental Monitoring

The Databar product offers a fully vendor neutral approach to provide the very latest technologies in full power branch circuit metering. Fully integrated systems which include tap-off circuit and end-feed power monitoring or circuit breaker status' are available alongside a range of environmental monitoring solutions.

Databar power metering allows for multi-tariff sub-billing at Class 1 accuracy.

Communication protocols include Modbus RTU, Ethernet and SNMP.

Power measurements include:

- Active and reactive power
- Active and reactive energy
- Voltage per phase
- Current per phase

Circuit breaker status is also available via a range of auxiliaries which can then provide open / closed / tripped status.

Typical arrangements include Modbus chains for the tap-offs

returning to Ethernet gateways in the end feeds or application specific power / energy management outstations / HMI.

Power Management from Anord Mardix

Anord Mardix holds approvals as a Schneider Electric EcoXpert Critical Power MASTER for supply and system integration of Power Monitoring Expert, PowerSCADA Expert/ CitectSCADA solutions and also as a Janitza Approved System Integration Partner for GridVis solutions.



## Anord Mardix DCIM Modules

### Anord Mardix ims - Data Hall Rack Power Management and Billing

The ims system has been developed by Anord Mardix to sit above data harvesting applications such as EMS, BMS and other suitable databases.

ims provides users with a secure web based portal to manage customer or departmental billing through a wealth of standard or custom reporting tools and innovative graphic interfaces.

Employed by some of the world's largest data centers in private financial and colocation sectors, this powerful tool provides reporting and management of over 21 million points of data and annual billing of \$350 million.

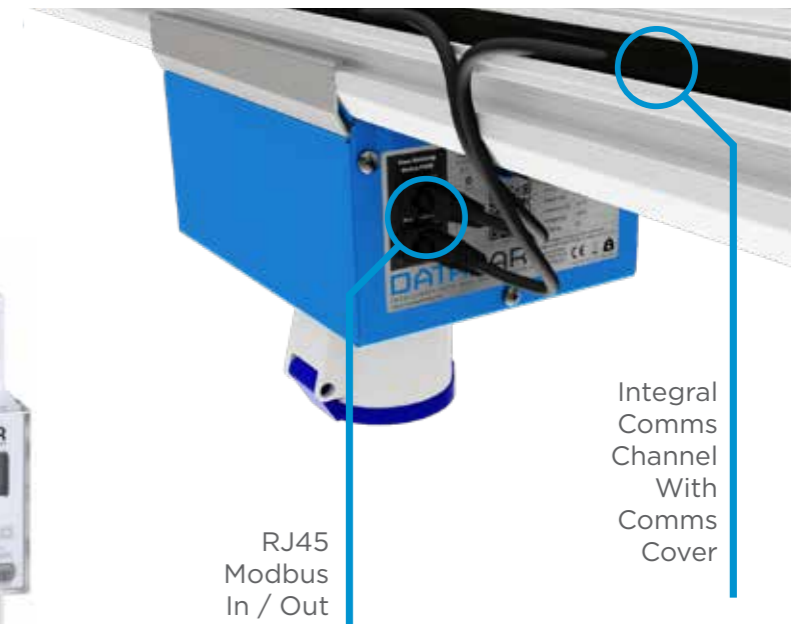


## Modbus Wired Metering

In wired metering solutions CAT5e/CAT6 cabling is employed to 'daisy chain' tap-offs back to Ethernet gateways.

The aluminium housing has dedicated cabling channels on both the front and back faces, each can carry up to four cables and a comms channel closure strip is provided for cable containment.

Metered tap-offs are supplied with RJ45 terminals for linking out the Modbus chain.



## Wireless that works

Databar offer Packet Power's market leading solution to provide a wireless power and environmental monitoring system that is simple and cost effective to install, configure and operate.

The system is proven to work in demanding data centre environments and provides unmatched security which is achieved through the use of a wireless networking protocol designed specifically for the needs of data centre environments.



Typical system architecture:

