

Intelligent Distribution for Sub-distribution Boards in Passenger Station



With over 70 years' experience and global presence in more than 100 countries, ABB helps to keep the world moving with new, innovative and sustainable solutions targeted on creating a low-carbon rail industry able to operate with maximum efficiency, reliability and safety.

What is intelligent distribution?

Intelligent distribution means leveraging on new digital technologies to transform traditional electrical installations into smart connected architecture for 24/7 comprehensive monitoring, insights and analysis. The aim is to improve energy consumption and asset performance targeted on sustainability, energy efficiency, cost savings and continuous operation.

Why you need intelligent distribution

Reliability is a major concern in the rail industry. Last year, reliability issues increased by 64% causing delays amounting to 8612 hours in the UK alone. And as the demand is growing for rail as a sustainable form of transportation, ABB intelligent distribution applications offer solutions able to ensure safe, smooth rail operation, maximize energy efficiency, reduce carbon footprint, minimize running costs and downtime while ensuring 24/7 continuous service.

Main benefits

Energy Efficiency

Maximizes energy efficiency up to 30%, reduces carbon footprint and complies with LEED & ISO 50001 certification requirements.



Reliability

Maximizes reliability and avoids downtime thanks to 24/7 real time monitoring, smart analytics, predictive maintenance and instantaneous alerts.



Flexibility

Modular, scalable solutions that can be applied to both greenfield and brownfield installations.



Integrable

Ready for complex integration, also when several systems are involved; BMS, SCADA or facility management with 3rd party integration.

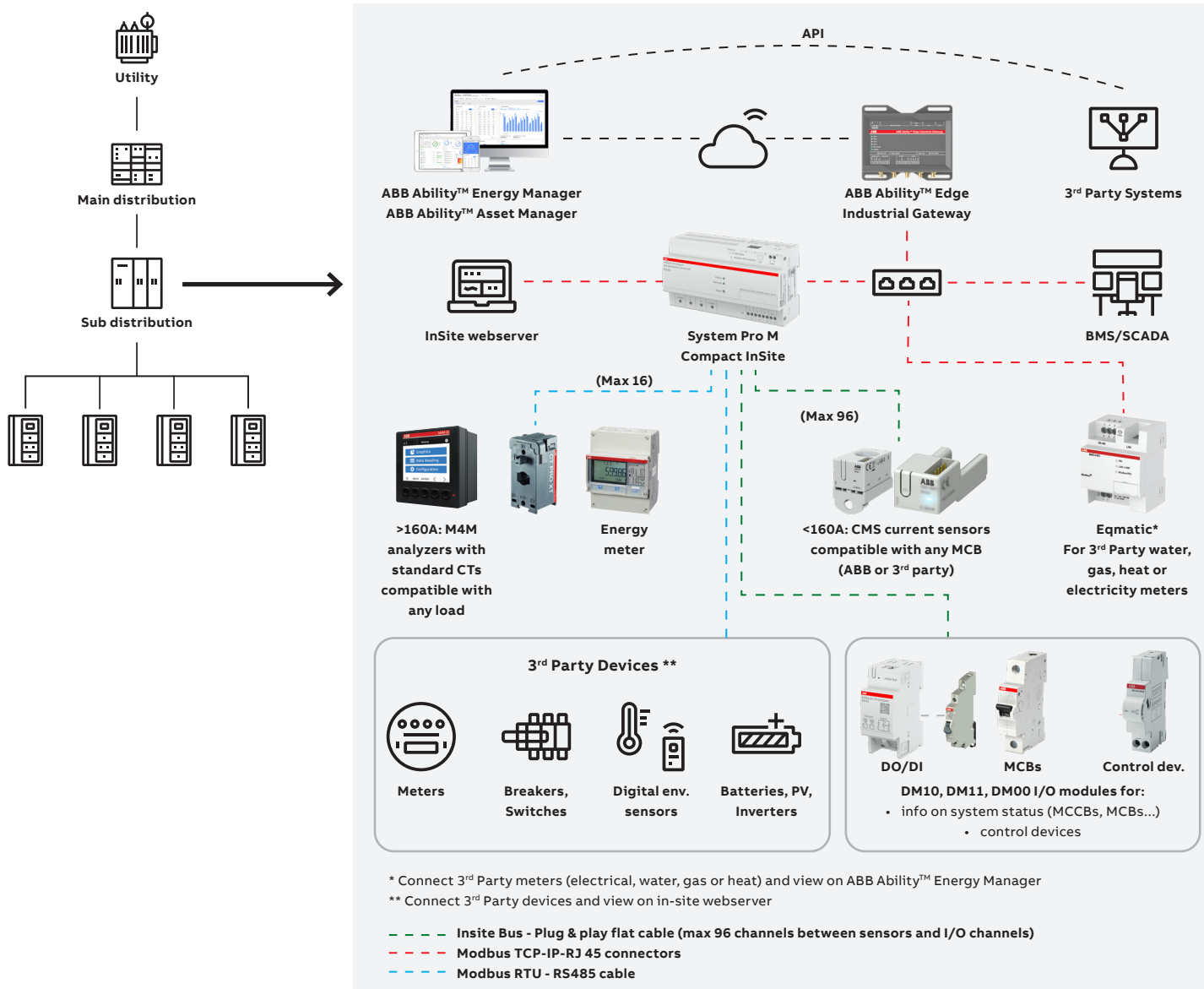


Sub-distribution Boards

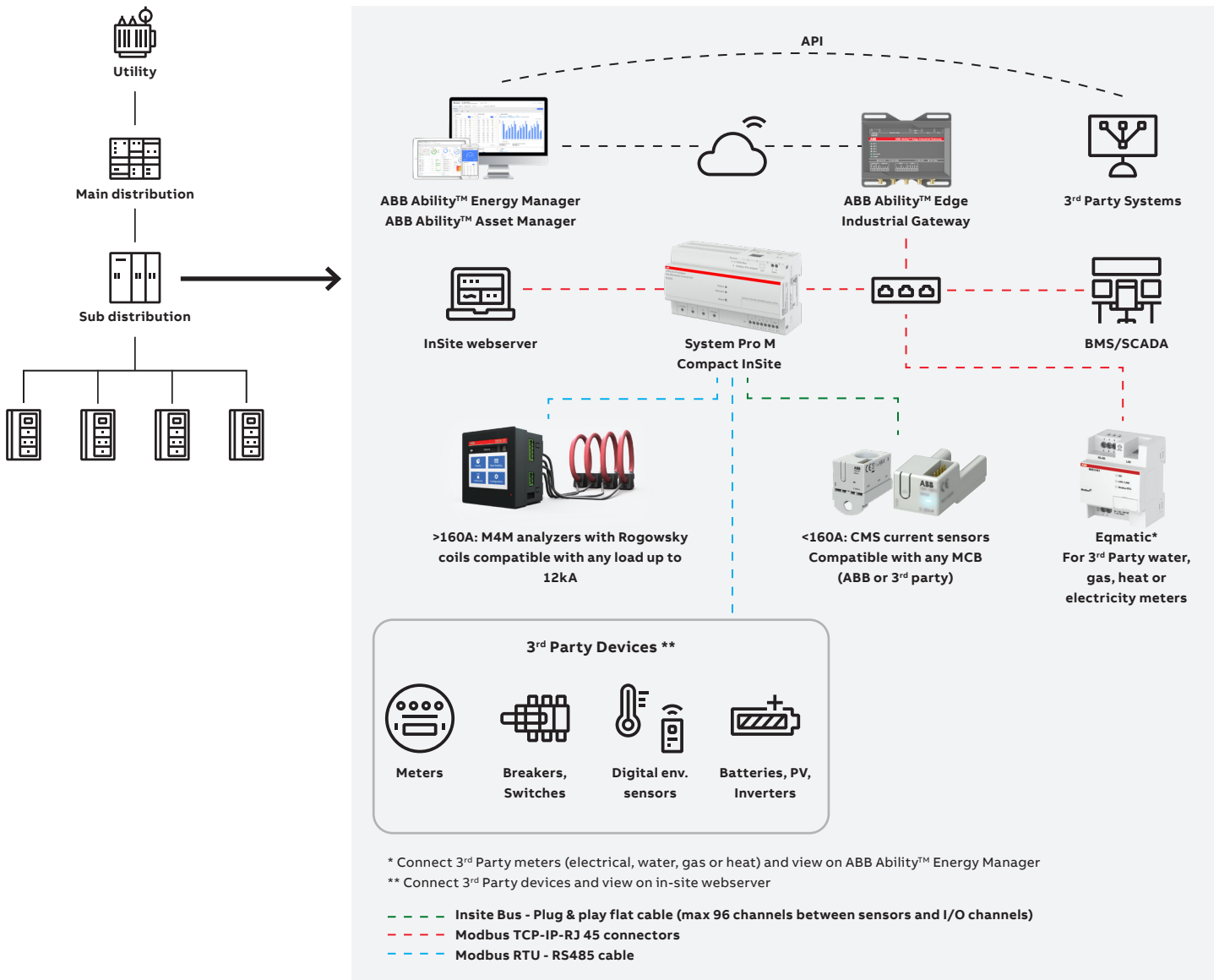
ABB intelligent distribution provides further insights for a clear understanding of energy consumption and other, non-electrical parameters (e.g. water, gas, temperature) not only at main distribution level but down to sub-distribution and load level as well. Acquire more insights and start monitoring energy flows in sub-distribution boards with System pro M Compact® InSite. This range of connected devices has been specifically developed to support energy and asset management requirements by collecting data from various devices, such as energy and power meters, network

analyzers, EQmatic for independent meter integration (electricity, gas, water or heat) in addition to protection devices like MCBs and RCDs equipped with current sensors and integrated additional digital input and output modules. Not to mention everything that can be monitored via ABB Ability™ Energy Manager & ABB Ability™ Asset Manager, BMS or SCADA systems or even 3rd party systems via API. Typical examples of sub-distribution board components and architecture for greenfield and existing installations (brownfield) are given below.

Greenfield Application



Brownfield Application



Main Components



[System Pro M Compact® InSite](#)



[S200 Miniature Circuit Breaker](#)



[M4M Network Analyzer](#)



[ABB Energy Meter](#)



[ABB EQmatic Energy Analyzer](#)



[ABB Ability™ Edge Industrial Gateway](#)



[ABB Ability™ Energy Manager](#)



[ABB Ability™ Asset Manager](#)



Bill of Materials

Considered Parameters	
Standard	IEC
Application Area	Retail shopping area sub-distribution
Monitoring System	ABB Ability™ Energy Manager
Communication Protocol	Modbus TCP - Modbus RTU
Measuring Points	8 connected devices, 27 current sensors for outgoing (3x3P and 18x1P MCBs)
Network switch	Ethernet 8 Ports Switch requires 110 - 240V AC power supply
IoT Gateway	ABB Ability™ Edge industrial gateway requires power supply with nominal input 12 or 24 V DC and maximum current 2 A (15 W maximum consumption)

Product	Part Number	Quantity	Description
Tmax XT MCCB 4P	1SDA068294R1	1	Incoming for retail shopping area (XT4N 160 breaking part)
	1SDA100328R1	1	Ekip Touch Measuring LSIG In=160A
	1SDA105177R1	1	Ekip Com Modbus TCP communication module
S200 MCB 3P 63 A	2CDS273001R0634	3	For 3 phase loads (1 per each distribution board)
F200 RCCB 4P 25 A 30 mA	2CSF204101R1250	6	Residual Current Circuit Breaker for each outgoing
S200 MCB 1P 16 A C	2CDS251001R0164	18	Outgoings for (lighting, sockets, HVAC etc..) distributed equally for each phase
System Pro M Compact® InSite	2CCG000242R0001	1	SCU100 Sub-distribution Control Unit
	2CCG000243R0001	2	INS105 Flat Cable 5 m
	2CCG000244R0001	1	INS135 Connector set (35pcs)
	2CCG000245R0001	4	DM11 Digital Input Module
	2CCA880221R0001	27	CMS-121CA Current Sensor (10-40 A)
Energy Meter	2CMA105931R1000	1	ABB Energy Meter (Silver) B23 312-500
EQmatic Energy Analyzer	2CDG110228R0011	1	For 1 gas, 1 water and 1 heat 3rd party meters with Modbus RTU communication
ABB Ability™	1SDA116751R1	1	Edge Industrial Gateway (Cloud view)
	2CDG120082R0011	1	8 Ports Fast Ethernet Switch
	ABB Ability Marketplace™	1	Energy Manager (Watching Edition - 5 Devices - 1 Year)
		3	1 Extra Device For ABB Ability
		1	Multi-utility metering add on (1 Year subscription)

Note : [ABB Ability Marketplace™](#) one-stop online portal for ABB Ability™ solutions subscriptions and services.
For Tmax XT MCCB with communication modules, it should be supplied by means of a galvanically isolated 24V DC auxiliary voltage with the following characteristics (tolerance ±10% , maximum wave ±5%, maximum surge current 10A for 5ms and maximum rated power 4W @24V).

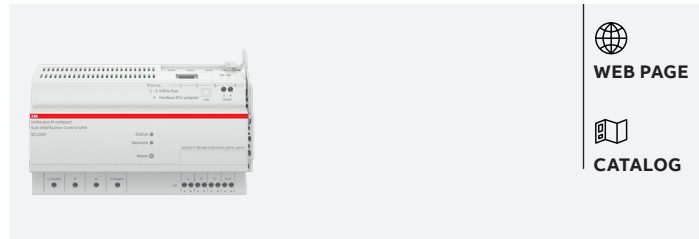
APPLICATION FINDER

We've made it simpler for you to set up your project!
Click here to find the reference architecture that best fits your needs and download the Bill of Materials.

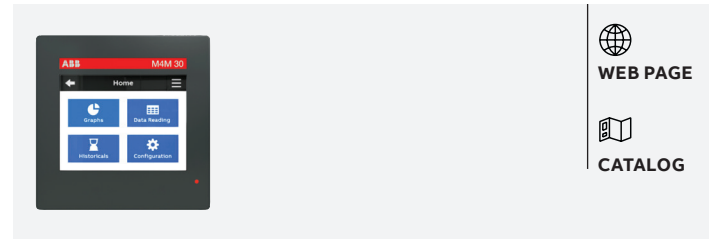


Product offering

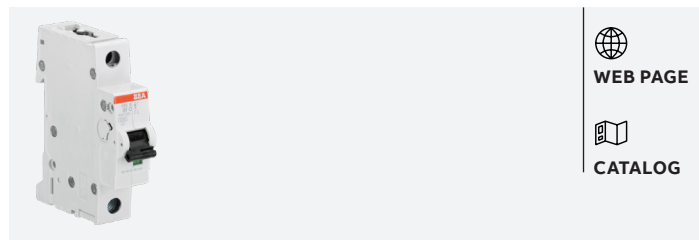
System Pro M Compact® InSite:



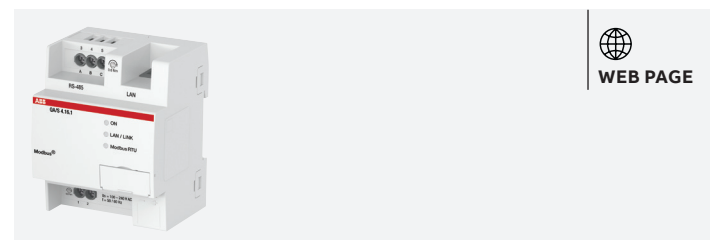
M4M Network Analyzer:



S200 MCB:



EQmatic:



Energy Meter:

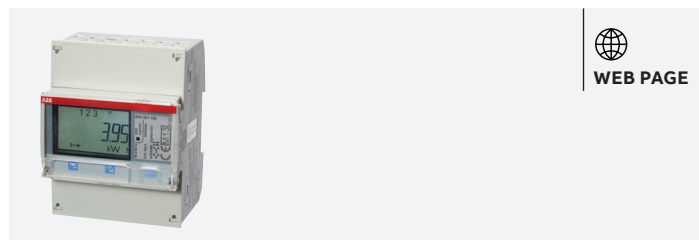


ABB Ability™ Edge Industrial Gateway:

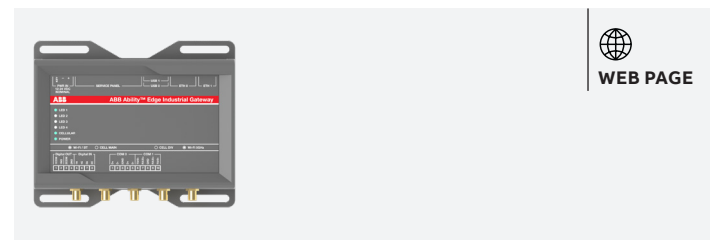


ABB Ability™ Energy Manager:

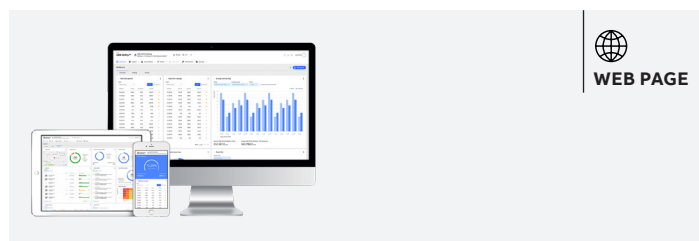
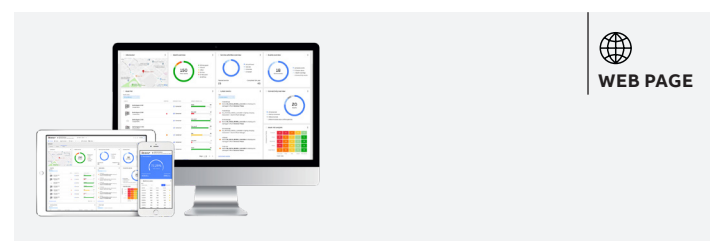


ABB Ability™ Asset Manager:



To discover more

APPLICATION FINDER



Find the reference architecture tailored to your needs and speed up your project thanks to our new Application Finder Tool!



CONTACT US



Do you have a similar project and are you searching for the right Application configuration? Contact us and talk to our experts!



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