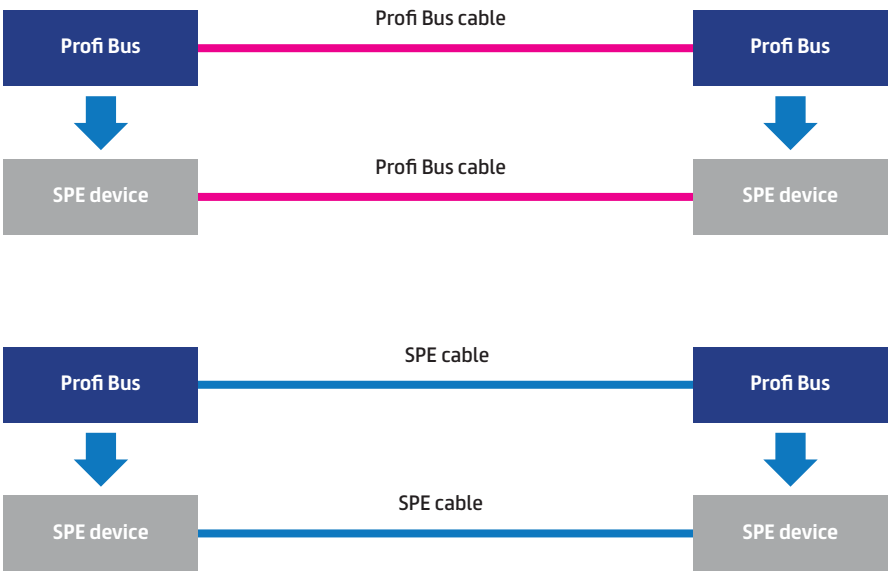


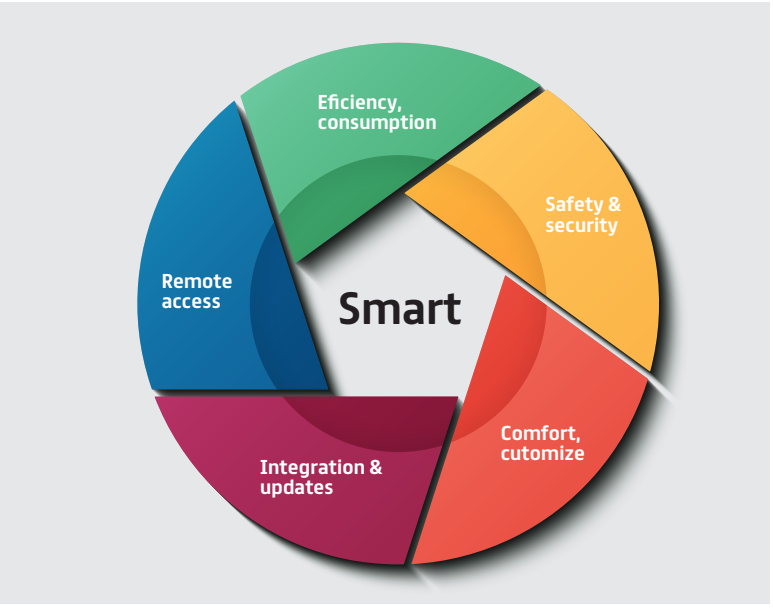
Retrofit is risky. As we already saw, the legacy bus cables cannot provide the bandwidth needed for SPE.

Digitalization is wise you use SPE cable as media, and just update the devices. This allows you to benefit from cable since today, and be easy to next generation.



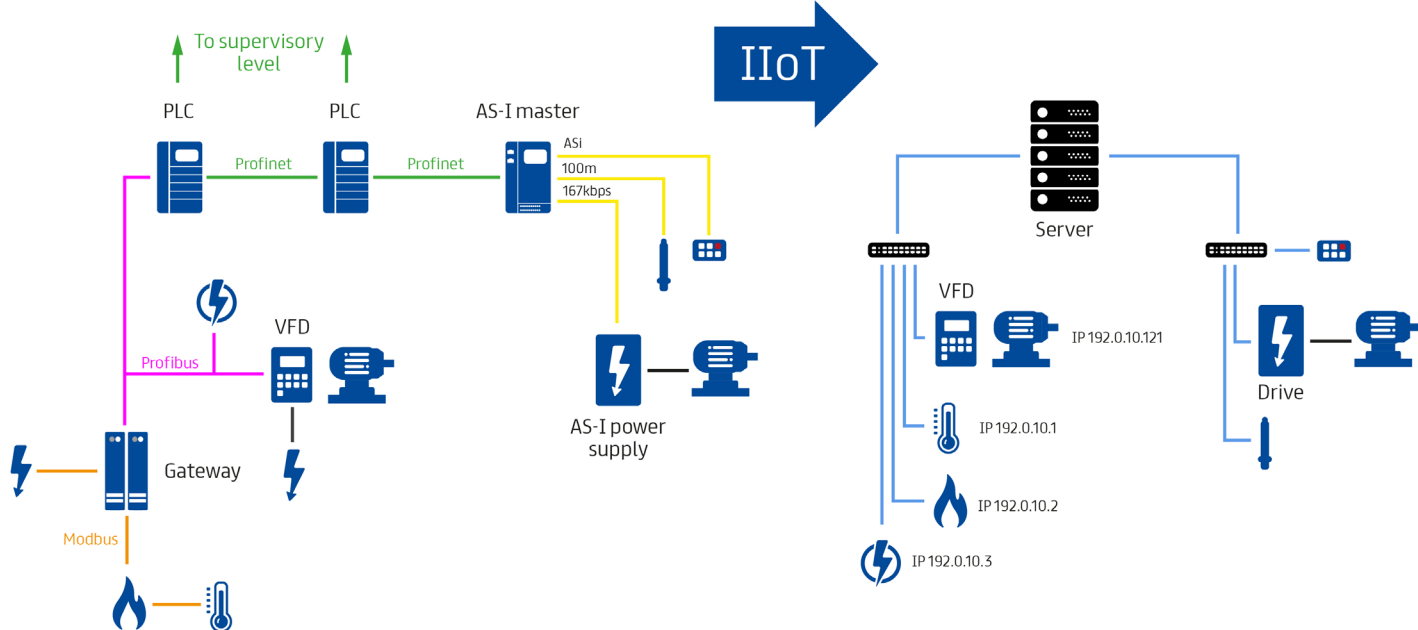
DRAKA S1NGLE

Single Pair Ethernet (SPE) – Smarter with less



The buildings and factories are moving to be smarter, the devices contain more features and connectivity, creating an Internet of Things (IoT). But the infrastructure today is not good enough.

Why?
Because the legacy buses and protocols cannot provide the connection speed and the integration that IoT needs. They operate in parallel with different vendors, protocols and need active devices to **speak to each other**. If field devices “can speak” same Ethernet language, all levels from office to factory floor sensors could see each other natively. And this is Single Pair Ethernet about: an All-IP automation for buildings and industries.



Member of
Single Pair Ethernet
System Alliance

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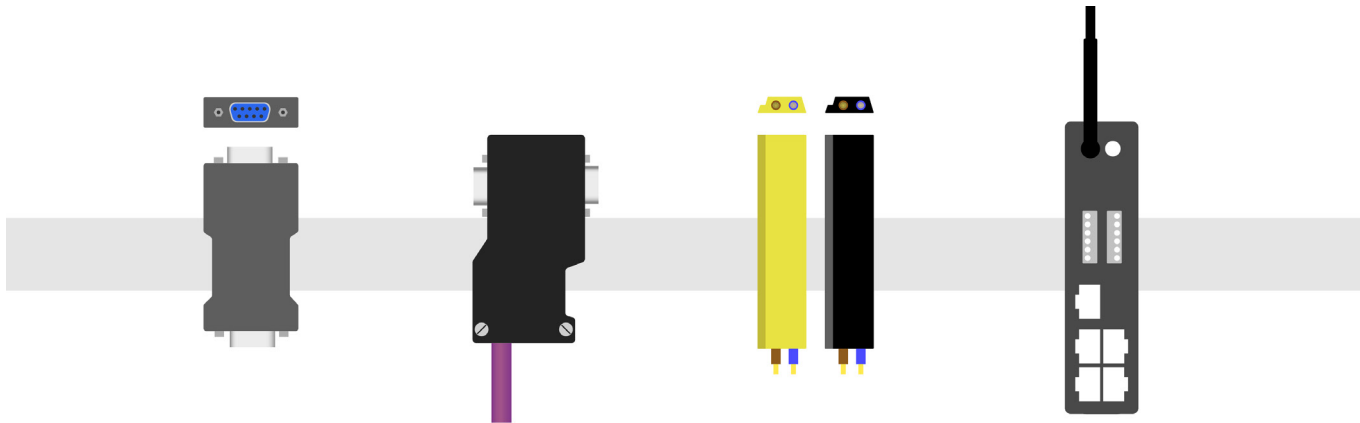
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Draka Specials

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Additionally, when we unify the automation under one protocol, the integration allows the simplification of spare parts, maintenance, fault identification and start-up. Instead of being prepared to dozens of different technologies, with SPE you can focus and excel in one.

How fast, how far

The Single Pair Ethernet (SPE for short) is conceived by IEEE as application of 10, 100 or 1000 Mbps over 1 pair. The channel distance varies according to the speed and the cable attenuation. The IEEE defines the application, and other standards like ISO/IEC defines the cabling around it. So there are some BASE-T1 types:


T1-S	15m	10 Mbps	RS485	1200m	93 kbps
T1-L	1000m	10 Mbps	FF	12900m	31 kbps
Type B	40m	1000 Mbps	CAN	40m	1Mbps

And those legacy protocols do not speak to Ethernet devices without active gateway.


New challenges, new cable

To provide the pathway for SPE, as Prysmian Group we bring you our new portfolio, the **DRAKA S1NGLE**, for industrial or premises application in IoT, each one with a set of protections and jackets as below.


Industrial – IIoT
UL 758 (AWM)




Horizontal Flame (FT2)




Rating: 80° C



300V




PVC and PUR


 For industry the **S1NGLE** cables have PVC or PUR jacket, both excellent against oil and UV. Cables follow UL 758 AWM Style.

For Building IoT, we have LSHF jackets, with good flame retardant properties, and CPR Dca tested.


Premises – BIoT
CPR rated




LHSF-FR (bundle)




Rating: 70° C



10-1000 Mbps



S1NGLE Shielded 20MHz IEC 61158-13,14	Industrial					Premises				
	Link	AWG	Jacket	PoDL	OD	Link	AWG	Jacket	PoDL	OD
	1000	18/7	PVC/PUR	10/13	7.2	Backwards compatible for T1-A channels 				
S1NGLE PLUS Shielded 600MHz IEC 61156-11, 12	400	22/7	PVC/PUR	10/13	5.8					
	40	22/7	PVC/PUR	6/8	5.8	40	22/7	PVC/PUR	6/8	5.8
S1NGLE Work Area Shielded 600MHz IEC 61156-11, 12	40	32/1	PVC/PUR	10/13	5.1	40	32/1	PVC/PUR	10/13	5.1
	15	26/7	PVC/PUR	9/15	3.9	15	26/7	LSHF-FR	9/15	3.9

You can see the complete **S1NGLE** range, including the **S1NGLE PLUS** – for channels from 100M to 1000Mbps. So the fixed cable (horizontal) is made with S1NGLE and S1NGLE PLUS, and the patchcords are made with S1NGLE 15 Work Area (which supports from 10 to 1000Mbps).



The cable is composed by bare copper conductors, with PE insulation, fillers and a screen of foil Al/PET tape + tinned copper braid. The jacket depends on the application.

Our S1NGLE is designed to be used acc to ISO/IEC 11801-9906, and ISO/IEC 11801-3 and -6.

There is no going back

We know that changing the factory automation paradigm can be hard and expensive. The SPE is coming fast, but legacy cables are still needed. But **you don't need to put your equipment on the cloud** today. Our **S1NGLE** cables are compatible with **legacy protocols**, allowing you to migrate first the cabling, then later the active devices.

	Found Fieldbus & PB PA	RS485, Backnet	M-BUS	PB DP	CANBUS
S1NGLE 1000	OK*	OK	OK	No	OK*
S1NGLE 400	OK*	OK	OK	No	OK*
S1NGLE PLUS AWG	Zo mismatch	OK	OK	No	OK*
S1NGLE 15	Zo mismatch	OK	OK	No	No