

"INDUSTRY 4.0 NEEDS INTELLIGENT CABLE"

Horst Messerer on the cable technology requirements for the smart factory of the future.

Mr. Messerer, can you escape from the hype around buzzwords such as Industry 4.0 and the Internet of Things?

MESSERER No, and I would not want to. Industry 4.0 is a clever move by the world's industrial sector, because what lies behind it is how we, in high-wage countries, survive long term in an increasingly competitive environment. We all seek to automate cleverly, optimise our processes in order to deliver the best quality products. We are right at the forefront of improvement: with ever-increasing speeds, minimal non-productive times and fault-free output, horizontally and vertically interconnected production structures, goods and tools with their own memory, human-machine communication and direct interaction between machines – a fascinating new world is opening up.

Is Industry 4.0 then actually bringing the predicted revolution in some places?

MESSERER I think the big word "revolution" is an exaggeration. If we keep our feet on the ground, a change is taking place, which will permanently alter production. However, there is nothing revolutionary happening to us; rather, we are exploiting opportunities that are made possible only by the technologies available today. The Internet of Things will definitely come though.

How can the development of the cable industry be secured?

MESSERER Let me cover that in three phases. Over three decades ago, we had low-capacitance control cables, which needed one cable for each function, i.e.

if you were addressing 20 sensors, you needed a 20-pair cable. For a good 25 years, BUS systems have been the norm – one cable can address multiple components and therefore, space was saved. Now, with Industry 4.0, Fieldbus is reaching its limits.

Has Fieldbus therefore come to an end?

MESSERER Not at all, it is merely being shown its limits. In the BUS world, we talk about data rates in the range of 1 to 20 Mbit and – at best – response times of 20 ms. However, real-time communication needs a more reactive medium with response times under 100 µs and data rates in the range of 100 Mbit and greater.

What is the answer to these high demands?

MESSERER It is based on the cable technology of Industrial Ethernet – Profinet, Ethernet/IP, EtherCAT, Powerlink or SERCOS – protocols already long-established in IT finding their way into the factory. Unfortunately, as in the Fieldbus war of the 1980s, no standard has yet emerged. Almost a dozen solutions are currently competing to be the industry standard.

And currently superseding Fieldbus?

MESSERER In some cases, yes, but not necessarily. Whenever a fast speed is needed, Industrial Ethernet has the advantage with its performance data. In a refinery with long-lasting processes though, who needs real-time communication with millisecond accuracy? In many cases, Fieldbus still has a future and various BUS systems still have further growth to achieve. Industrial Ethernet is also not completely new. If we look at market trends then we see that a damper was put on Fieldbus applications and Industrial

"Industrial Ethernet is the answer to the needs of real-time communication."

Horst Messerer has been an expert in cable technology for almost three decades: "Cables are my life."

