

# A Fieldbus Power Supply Compatible with Process Industry Applications

Minimal power dissipation and a  
space-saving installation concept

## The Application

In process industries, FOUNDATION Fieldbus H1 connects a large installed base of field devices to the control system. Fieldbus enables digital data communication between the plant and the control system while also supplying the field devices with power.

The fieldbus power supply installed in control cabinets form the backbone of the communication system. Control cabinets require special consideration when new plants or parts of existing plants are constructed, and also when old or defective modules are replaced.

Optimal utilization of cabinet space, compatibility, installation effort, and power dissipation are key aspects for new plants as well as modernization projects. Adding air conditioning in control cabinets requires considerable extra work and maintenance, as well as being expensive and more complex. The power dissipation inside a switch cabinet determines how many segments can be supplied.





### The Goal

When constructing new plants, wiring and testing work should be kept to a minimum when the modules are installed. The power supply must take up as little space as possible and generate as little heat as possible. During revamps it is particularly important to leave the existing wiring in place and reuse it.

#### Primary goals:

- Minimal wiring and testing work
- Low power dissipation
- One-to-one device replacements
- Re-use of existing connection cables
- Optimal use of the installation space without reconfiguring the control cabinet

### The Solution

Pepperl+Fuchs develops and manufactures FieldConnex® Power Hubs with low space requirements, which feature connectors suitable for the respective process control system. The Power Hubs are suitable for both new installations as well as revamps. A “reversed” version enables mirror-image wiring arrangement in the control cabinet, separating field and control system cables, thus preventing crosstalk and enhancing the reliability and quality of communication. With redundant configuration of the pluggable modules replacement is possible during system operation without any down time.

### The Benefits

During revamps, the compatibility and the compact design allow for simple and efficient replacement. The conversion work required when replacing a power supply is minimal since the wiring and connections stay in place and can be reused. The Power Hub’s power dissipation is up to 75 percent lower than that of comparable modules. This allows a large number of segments to be installed per control cabinet, the space required in the control room can be reduced or air conditioning can be reduced or eliminated. The low power dissipation is the main cause for a very long service life of the Power Hubs.

Using industrially manufactured cables further reduces the amount of wiring required, and eliminates checkout procedures. All of these benefits add up to reduced installation effort and down time leading to low total cost of ownership.

#### At a Glance

- Drop-in replacement process
- Increased plant availability
- Minimal power dissipation; cooling equipment reduced or eliminated
- Compatible with all control systems
- Space-saving installation concept
- Reversed version available