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## Industrial Ethernet

# Cybersecure operation of PV systems

## Ensuring network efficiency and consistently limiting risks

Modern PV systems have evolved into fully digital energy infrastructures. Secure and reliable communication has therefore become a key factor for efficiency, availability, and protection against external threats. This is also reflected in the Europeans recent proposal under the Cybersecurity Act, which aims at increasing the cybersecurity level of PV installations. High-performance network components form the stable backbone of this infrastructure – they manage data flows, separate critical system areas, and always keep installations secure and efficient.

Weidmüller provides dedicated solutions for the reliable operation of networked PV systems. Robust surge protection and connectivity components safeguard the DC side, while intelligent routers and switches establish a stable and clearly segmented communication architecture. Combined with secure remote access and monitoring technologies, these elements create an end-to-end system that effectively protects inverters, infrastructure, and data – ensuring continuous and trouble-free plant operation.

### Your benefits:

- Development and production **Made in Germany**
- Packet filtering / firewalling
- Network segmentation
- Secure remote access

Weidmüller is certified according to IEC 62443-4-1 and ensures a secure product lifecycle.

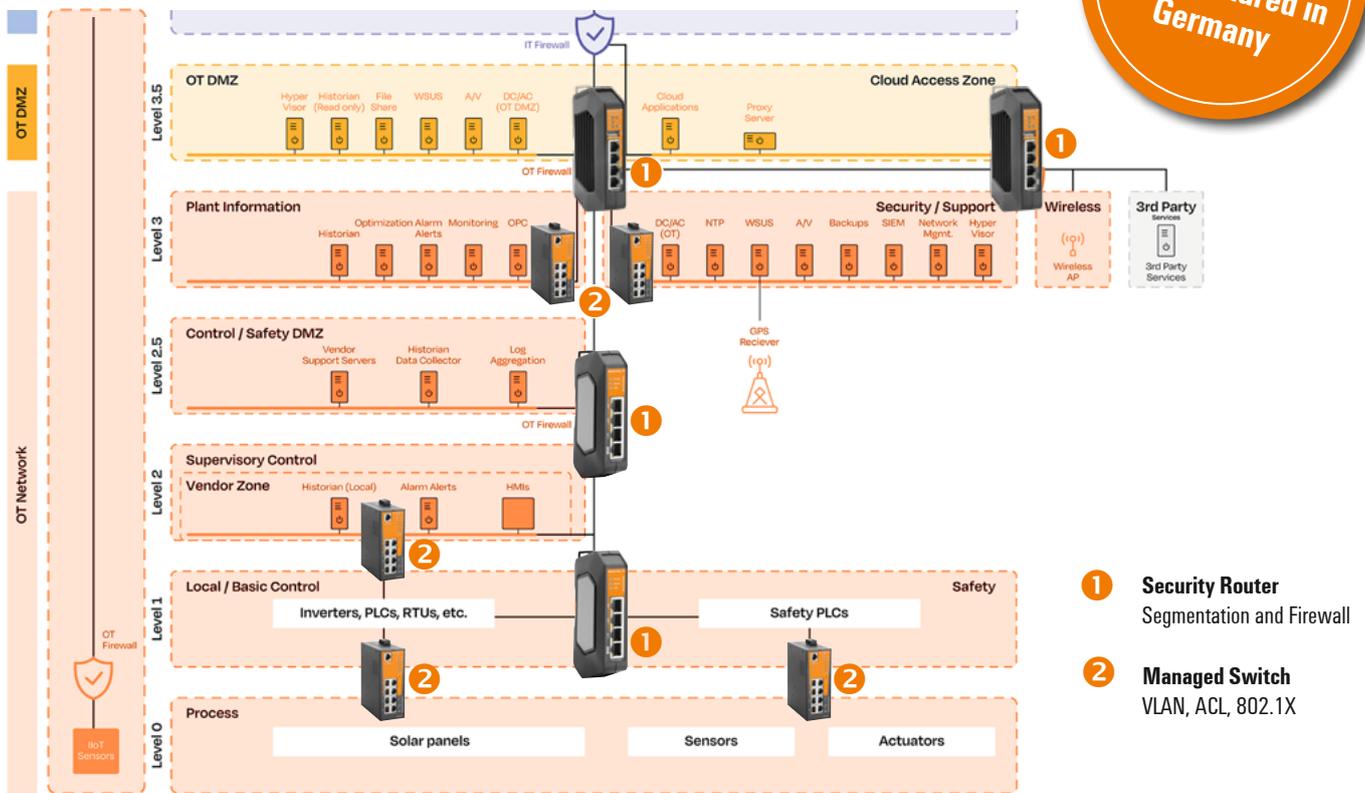


More information on our website:

[www.weidmueller.com/industrialsecurity](http://www.weidmueller.com/industrialsecurity)

# Security-optimised Network Topology

DNV and SolarPower Europe have published a topology recommendation for secure PV system designs. Weidmüller supports you with the appropriate devices to implement this secure topology.



- 1 Security Router**  
Segmentation and Firewall
- 2 Managed Switch**  
VLAN, ACL, 802.1X

Source: DNV

### IEC 62443

**Router (Security Router / Firewall)** act as the central communication and security boundary of the PV system. With clear network segmentation, intelligent packet filters, and integrated firewall functions, they protect inverters and monitoring systems from unauthorised access. They control data flows precisely and provide structured, protected access to all system components – forming the foundation of a cyber-secure PV system.

### IEC 62443

**Managed Switches** ensure structure, transparency, and control within the PV network. VLAN segmentation, port security, and SNMP-based monitoring enable a clear separation of critical areas and early detection of unusual activities. They stabilise the entire system communication and increase cyber-resilience – especially where many devices must be connected reliably and long-term.

### ISO 27001

**u-link** enables secure and controlled remote access to PV installations – anytime and anywhere. Encrypted connections, role-based access control, and a structured service concept ensure efficient maintenance operations without compromising network security. Operators maintain full control while technicians can securely access inverters, routers, or monitoring systems.

Type	Description	Features	Order No.
IE-SR-4TX	Security Router	L2/L3/L4 Firewall, segmentation, 2 subnets, syslog, SNMP, access management, secure remote access via u-link	2751270000
IE-SR-4GT	Security Router	L2/L3/L4 Firewall, segmentation, 4 subnets, syslog, SNMP, access management, secure remote access via u-link	2873910000
IE-SW-AL08M-8GT	Managed Switch	ACL, 802.1X, Port Lock, VLAN, Syslog, SNMP, access management	2682350000
IE-SW-AL12M-8GT-4GESFP	Managed Switch	ACL, 802.1X, Port Lock, VLAN, Syslog, SNMP, access management, IEC 62443-4-2 certification	2682340000
IE-SW-AL08M-8GTPOE	Managed Switch	ACL, 802.1X, Port Lock, VLAN, Syslog, SNMP, access management	2682420000
U-LINK-BASIC-EXTENSION-1Y	Remote Access Service License	VPN-based remote access, ISO 27001 certified development and operation, L3/L4 cloud firewall, access management	3024610000



More product information in the eShop:  
<https://eshop.weidmueller.com>