

HUAWEI AR530 Series Industrial IoT Gateway Datasheet





The AR530 series industrial IoT gateways, named industrial switching routers, are designed to work in harsh environments of Internet of Things (IoT). They integrate routing, switching, security, and Advanced Metering Infrastructure (AMI) functions and provide various capabilities.

Overview

Compared with enterprise routers, industrial routers are more applicable to harsh industrial environments because their components are more strictly selected. The AR530 uses a wider temperature range and a fanless design and provides Ingress Protection 51 (IP51). With these key technologies, the AR530 is high- and low-temperature resistant, dustproof, waterproof, and can resist electro-magnetic interference. The AR530 uses a modular design and integrates various types of interfaces, such as FE, SFP, and RS485. It can connect to various types of meters and communicate with devices in neighboring sites, thereby meeting different scenario requirements.

The AR530 provides AMI centralized meter reading services. It can automatically collect meter and status data, analyze and store data in a centralized manner, and send data to the management system. The AR530 provides uplink, downlink, and local networking, to meet the requirements for the Internet of Things (IoT) in the energy industry.

The AR530 is available in the following models: AR531-2C-H and AR531-F2C-H.



AR531-2C-H

- Fixed interfaces: 6 x FE, 2 x FE combo, 2 x GE (SFP), 2 x RS485, 2 x DI
- IP51, dustproof, waterproof
- Fanless design, works at temperatures from -40°C to +70°C



AR531-F2C-H

- Fixed interfaces: 6 x FE (SFP), 2 x FE combo, 2 x GE (SFP), 2 x RS485, 2 x DI
- IP51, dustproof, waterproof
- Fanless design, works at temperatures from -40°C to +70°C

Key Features and Values

Applications Integrated in One Device, Reducing Total Cost of Operation

- Integrates the routing and data collection functions and provides various types of interfaces, such as FE, GE, and RS485.
- Supports switching and Smart Ethernet Protection (SEP), implementing millisecond-level protection switch-over.
- Has a built-in, zone-based firewall, ensuring production security.

Better Experience with Zero Service Interruption

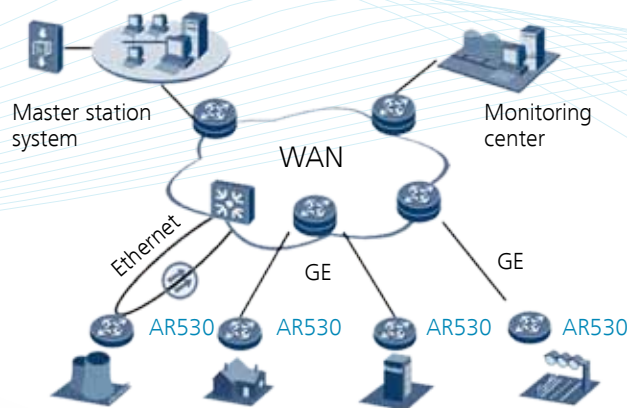
- Complies with substation environment standard IEC61850-3/IEEE1613.
- Provides IP51 and is dustproof and waterproof.
- Uses a fanless design and works in a wide temperature range.
- Works normally in environments that have strong electro-magnetic interference.

Open Interface to Improve IoT Applications Integration

- Open protocol standards: Complies with IEC 62056 (DLMS/COSEM), Modbus, and inter-operates easily with other devices.
- Flexible configuration and management: flexibility to configure data collection services of IoT terminals to meet customized user requirement.

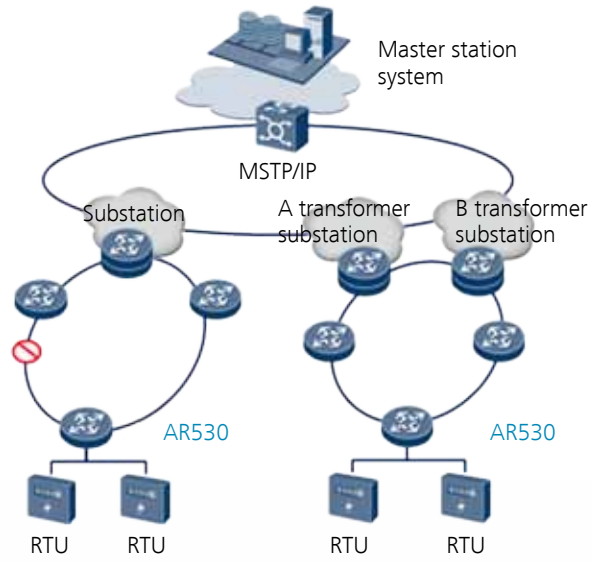
Typical Applications

AR530s as Industrial Routers



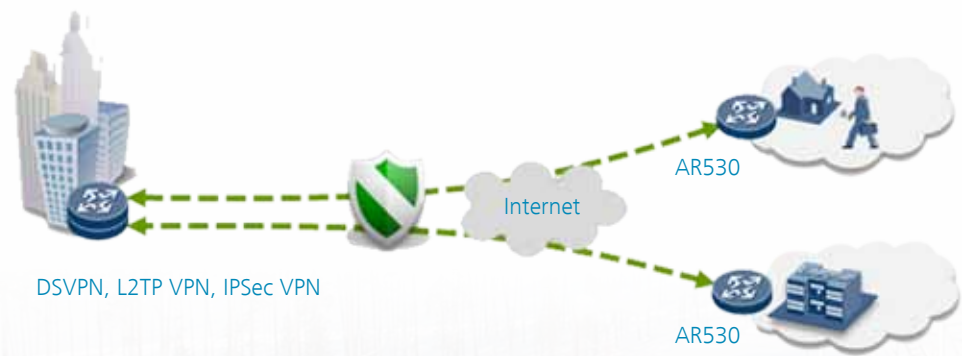
The AR530 industrial IoT gateways function as industrial routers and provide flexible WAN access modes for remote network connections. A single AR530 can provide FE, GE, and RS485 interfaces to meet networking requirements in different industries. This helps save deployment and maintenance costs and maximizes customers' ROI.

AR530s as Industrial Switches



The AR530 supports SEP and can be rapidly and easily deployed on a complex network. STP, RSTP, and MSTP can run the network simultaneously. The AR530 has a convergence time of less than 50 ms, and when a fault occurs, it is easy to locate. The AR530 provides a reliable system running environment, which improves network maintainability.

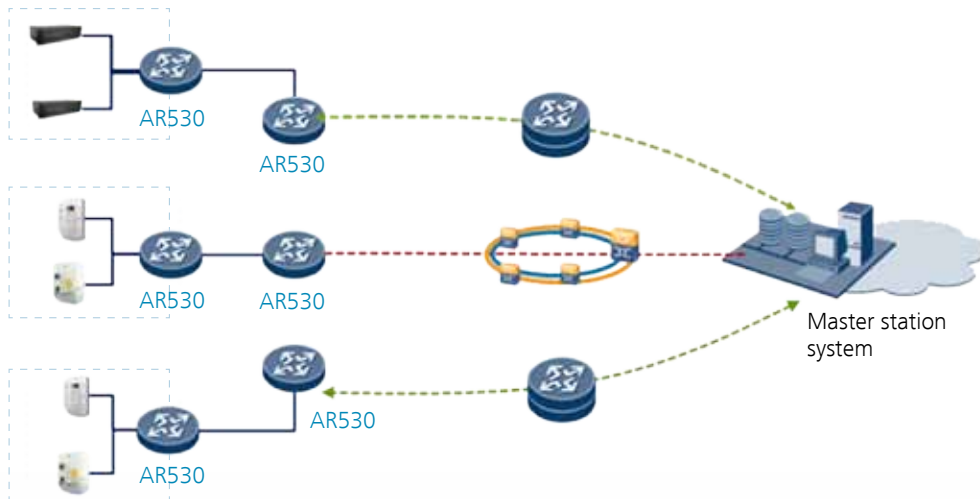
AR530s as Industrial VPN Routers



The AR530 supports various secure access functions to secure data transmission between terminals and master stations. Secure tunnels such as GRE VPN, IPsec VPN, DSVPN, and L2TP VPN are established between AR530s and master stations to implement secure data access and transmission.

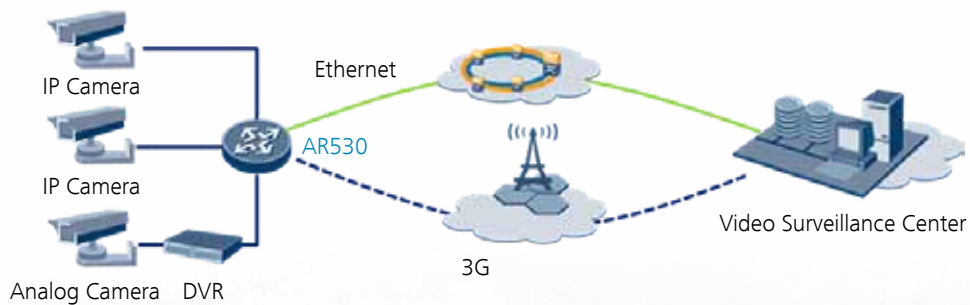


AR530s as Gateways for Internet of Things



As industrial gateways, AR530s integrate the functionality of both data concentrators and routers. AR530s can be used extensively throughout the electricity AMI solution, energy efficiency management solution, and Supervisory Control and Data Acquisition (SCADA) solution, thereby facilitating installation and commissioning, and reducing investments. For example, in the electricity AMI solution, AR530s connect to terminals through standard Ethernet interfaces and RS485 industrial interfaces. AR530s collect and store meter data and upload data to the management platform.

AR530s as Video Surveillance Backhaul Access



AR530s offer rich interfaces and 100M/1,000M link for flexible video surveillance backhaul access and high bandwidth requirements. In addition, they are also designed to work in harsh environments that are suitable for video surveillance applications in various industries.

Product Specifications

The following table lists the specifications of the AR530.

Specifications	AR531-2C-H	AR531-F2C-H
Hardware Specifications		
L2 Switching Capacity	5.6Gbps	5.6Gbps
Service forwarding performance (IMIX)	150 Mbps	150 Mbps
Fixed Ethernet interface	2 x GE (SFP) + 6 x FE + 2 x FE combo	2 x GE (SFP) + 6 x FE (SFP) + 2 x FE combo
RS485 interface	2-channel	2-channel
DI interface	2-channel	2-channel
USB2.0	1	1
Serial console interface	1	1
Memory	512 MB	512 MB
Flash memory	512 MB	512 MB
Maximum power	44.5 W	44.5 W
Power supply	AC: 100 V to 240 V (single-phase); 173 V to 415 V (three-phase)	AC: 100 V to 240 V (single-phase); 173 V to 415 V (three-phase)
Power frequency	50/60 Hz	50/60 Hz
Weight	5 kg	5 kg
Dimensions (H x W x D)	88 mm x 220 mm x 250 mm	88mm x 220 mm x 250 mm
Storage temperature	-40°C to +80°C	-40°C to +80°C
Installation method	Wall-mounted, DIN rail mount	Wall-mounted, DIN rail mount
Operating temperature	-40°C to +70°C	-40°C to +70°C
Relative humidity	5% RH to 95% RH (non-condensing)	5% RH to 95% RH (non-condensing)
Protection level	IP51	IP51

Specifications	AR531-2C-H	AR531-F2C-H
Software Specifications		
Industrial Communications protocol	IEC62056, Modbus	
Basic features	DHCP server/client/relay, PPPoE server/client, NAT, sub-interface management	
LAN	IEEE 802.1p, IEEE 802.1q, IEEE 802.3, VLAN management, MAC address management	
Ring network protocols	SEP, STP, RSTP, MSTP	
IPv4 unicast routing	Routing policies, static routes, RIP, OSPF, IS-IS, BGP	
IPv6 unicast routing	Routing policies, static routes, RIPng, OSPFv3, IS-ISv6, BGP4+	
Multicast	IGMP v1/v2/v3, PIM SM, PIM DM, MSDP	
VPN	IPSec VPN, GRE VPN, DSVPN, L2TP VPN	
QoS	Differentiated service model, priority mapping, traffic policing (CAR), traffic shaping, congestion avoidance (IP-precedence/DSCP-based WRED), congestion management (LAN interfaces: SP/WRR/SP+WRR; WAN interfaces: PQ/CBWFQ), MQC (traffic classifier, traffic behavior, and traffic policy), HQoS, Smart Application Control (SAC)	
Security	Access Control List (ACL), firewall, 802.1x authentication, AAA authentication, RADIUS authentication, HWTACACS authentication, broadcast storm suppression, ARP security, ICMP attack defense, Unicast Reverse Path Forwarding (URPF), CPCAR, blacklist, Public Key Infrastructure (PKI)	
Management and maintenance	Upgrade management, SNMP (v1/v2c/v3), RMON, NTP, USB-based deployment, network configuration, CLI	

Device Selection

To choose an AR530, determine the host model and then software configurations.

Host

Choose a host model based on the interface type and service requirements.

Software

Install basic software and Value-Added Router Package software on an AR530. The basic software includes Layer 2 switching, device management, and static routes. The Value-Added Router Package includes advanced IP features such as Layer 3 routing, security firewall, and VPN.

Order Information

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Host

AR531-2C-H: 6 x FE (RJ45) + 2 x FE combo + 2 x GE (SFP) + 2 x RS485 + 2 x DI; AC power supply

AR531-F2C-H: 6 x FE (SFP) + 2 x FE combo + 2 x GE (SFP) + 2 x RS485 + 2 x DI; AC power supply

Software

Value-Added Router Package for advanced IP features such as Layer 3 routing, security firewall, and VPN

Accessories

Storage device USB flash drive (4 GB, USB2.0)

Optical module eSFP (FE, single mode, 1310 nm, 15 km, LC)

Optical module eSFP (GE, single mode, 1310 nm, 10 km, LC)

Optical module eSFP (GE, single mode, 1310 nm, 40 km, LC)



Optical module eSFP (GE, multi- mode, 850nm, 0.55km, LC)

For more information, visit <http://enterprise.huawei.com/en/> or contact your local Huawei sales office.

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HUAWEI TECHNOLOGIES CO.,LTD.
Huawei Industrial Base
Bantian Longgang
Shenzhen 518129,P.R.China
Tel: +86 755 28780808

www.huawei.com