

# Product Flyer

## ABB Connectivity Products Water/Waste Water Market

### ACQ550 and ACS800 ULH

Connectivity and asset management can maximize the value of your equipment targeted for the Water and Waste Water market. The nature of many of the water and waste water applications can benefit from connectivity solutions, providing you and your customers with simplified control, commissioning and 24/7/365 access to your assets enabling better system management and productivity.

Platform Solution product portfolio for the Water/Waste Water Market supplies connectivity and asset management through fieldbus adapters as well as PC-software.



Fieldbus adapter modules are flexible plug-in adapters that provide fast and simple universal connectivity to all major controllers. Universal connectivity means ABB low voltage drives connect to virtually all controller brands and communication networks, allowing users to choose the best network to meet their needs. PC-Tools provide software connectivity solutions for commissioning, control, monitoring, asset utilization, energy management, parameter manipulation, file management, and the like, maximizing the value of your assets.

Network connectivity of products provides simplified interface for control and management of drives; improving quality, productivity, flexibility and scalability. Fieldbus networks also offer a reduction in wiring costs compared to traditional I/O connections. Combining these feature-rich adapter modules with ABB's drives offers a powerful drive solution to OEM's and system integrators focused on the water and waste water industry.

#### Advantages of Network Connectivity

- Decreases mechanical and electrical installation time
- Reduces down time
- More data is available at a lower cost
- Reduces time and cost of machine expansion or relocation
- Remote data access
- Diagnostics provide predictive failure warnings
- Open protocols, connectivity to any major PLC
- Reusability of system software
- Drive parameter setting

#### Advantages of ABB Network Connectivity

- Connectivity to virtually any automation architecture
- Fast & simple connectivity
- Products designed and tested to conform to protocol specifications
- Best in class support resources

#### End User Benefits

- Decrease in mechanical and electrical installation cost
- Decrease in down time
- Increase in productivity
- Diminished start-up cost
- Lower maintenance and diagnostic cost
- Increase Asset value and Management capability

# Fieldbus Adapters

**CANopen (RCAN-01):** CANopen is a higher layer protocol based on the CAN (Control Area Network) serial bus system and the CAL (CAN Application Layer). CANopen assumes that the hardware of the connected device has a CAN transceiver and a CAN controller as specified in ISO 11898. The CANopen Communication Profile, CiA DS 301, includes both cyclic and event-driven communication, which makes it possible to reduce the bus load to minimum while still maintaining extremely short reaction times. High communication performance can be achieved at relatively low baud rates, thus reducing EMC problems and cable costs. CANopen device profiles define both direct access to drive parameter and time critical process data communication. The RCAN-01 module fulfills CiA (CAN in Automation) standard DSP 402 (Drives and Motion Control).

**ControlNet™ (RCNA-01):** The ControlNet network uses an RG-6 quad shielded cable or fiber with support for media redundancy. The RCNA-01 Adapter module supports only RG-6 quad shielded cable (coax) for the bus connection. ControlNet is flexible in topology options (bus, tree, star) to meet various application needs. The fieldbus speed is 5 Mbits/s. The RCNA-01 ControlNet Adapter module cannot originate connections on its own, but a scanner node can open a connection towards it. The ControlNet protocol is implemented according to the ControlNet International specification for a communication adapter.

**DeviceNet™ (RDNA-01):** The DeviceNet network uses a linear bus topology. Terminating resistors are required on each end of the trunk line. Drop lines as long as 6 meters (20 feet) each is permitted, allowing one or more nodes to be attached. DeviceNet allows branching structures only on drop lines.

**EtherCAT® (RECA-01):** The adapter module supports the CANopen DSP 402 (Device Profile Drives and Motion Control) profile or the ABB Drives profile. The RECA-01 implements the EtherCAT state machine, four sync manager channels to control the access of the application memory, two watch dogs and specified EtherCAT services, addressing modes and FMMUs.

**EtherNet/IP™ (RETA-01):** The RETA-01 Adapter module supports the Modbus/TCP and EtherNet/IP network protocols. The RETA-01 module supports eight simultaneous IP connections. Ethernet/IP is based on the Common Industrial Protocol (CIP), which is also the framework for both the ControlNet and DeviceNet networks. Ethernet/IP uses standard Ethernet and TCP/IP technology to transport CIP communication packets. The RETA-01 module fulfills all requirements for certification as an Ethernet/IP device.

**Modbus®-RTU (Built-In ACQ550):** Modbus is a serial, asynchronous protocol. Featuring a single master controlling one or more slaves. RS232 can be used for the point-to-point communication between a single master and a single slave. The most common implementation features a multi-drop RS485 network with a single master controlling multiple slaves. The ACQ550 features the RS485 for it is built-In Modbus physical interface.

**Modbus-TCP (RETA-01):** Modbus/TCP is a variant of the Modbus family of simple, vendor-neutral communication protocols intended for supervision and control of automation equipment. The implementation of the Modbus/TCP server in the RETA-01 module is done according to the Modbus/TCP Specification 1.0. The Modbus/TCP protocol allows the RETA-01 module to be used as an Ethernet bridge to control the drive.

**Profibus®-DP (RPBA-01):** PROFIBUS is an open serial communication standard that enables data exchange between all kinds of automation components. The physical transmission medium of the bus is a twisted pair cable (according to the RS-485 standard). The maximum length of the bus cable is 100 to 1200 meters, depending on the selected transmission rate. Up to 31 stations can be connected to the same PROFIBUS system without the use of repeaters.

**ProfiNet® I/O (RETA-02) :** The RETA-02 module supports both Modbus/ TCP and PROFINET IO network protocols. PROFINET IO is an open standard for industrial Ethernet, intended for configuration, supervision and control of automation equipment. The RETA-02 supports 10/100 Mbps transfer rate with network connections made with CAT 5 wiring and RJ-45 connectors. Both star and bus topology options are supported.

Fieldbus	Maximum Devices	Baud Rate	ACQ550	ACS800
Embedded	-	-	Modbus RTU	-
CANopen	127	50 kbit/s - 1 Mbit/s	RCAN-01	RCAN-01
ControlNet	99	5 Mbit/s	RCNA-01	RCNA-01
DeviceNet	64	125 kbit/s - 500 kbit/s	RDNA-01	RDNA-01
EtherCAT	65,535	100 Mbit/s	RECA-01	RECA-01
EtherNet/IP	Nearly Unlimited	10 / 100 Mbit/s	RETA-01	RETA-01
Modbus-RTU	247	600 bit/s - 115.2 kbit/s	Built-in	RMBA-01
Modbus-TCP	Nearly Unlimited	10 / 100 Mbit/s	RETA-01	RETA-01
PROFIBUS DP	32/segment, 126 total	9.6 kbit/s - 12 Mbit/s	RPBA-01	RPBA-01
ProfiNet I/O	Nearly Unlimited	10 / 100MB Full/Half Duplex	RETA-02	RETA-02

# PC-Tool Software

**DriveWindow:** Is software designed for online ACS800 drive commissioning and maintenance purposes. Connection to the drive is through a USB card and high speed fiber optic cable. The drive requires an RDCO-0x adapter to support the fiber optic connection. It is possible to adjust parameters, read the actual values, trend and graph actual values.

**DriveWindow Light:** Is software designed for ACQ550 and ACS800 online drive commissioning and maintenance purposes. Connection to the drive is through an RS-232 connection to the panel port. Requires additional hardware for panel port connections. It is possible to adjust parameters, read the actual values, trend and graph actual values.

**DriveAP:** Is a software programming package for utilizing the 15 PLC-like programmable blocks included with ACS800 standard drive firmware. This is a graphical programming tool for the adaptive programming feature.

**DriveBrowser:** Software is designed for online drive commissioning and maintenance purposes. DriveBrowser uses a computer's standard Ethernet port to an EtherNet/IP or Modbus-TCP drive network. The drives require configuration and connection to an EtherNet/IP or Modbus-TCP network.



PC-Tool Software	Connection	ACQ550	ACS800
DriveWindow	DDCS	-	X
DriveWindow Light	RS232/485	X	X**
DriveAP *	DDCS	-	X
DriveBrowser	EIP/MBTCP	X	X**

Notes:

\* Supports all drive firmware other than Multiblock and System control programs

\*\* Supports only standard drive firmware

# Contact Us

## **ABB Inc**

Discrete Automation & Motion

Drives and Controls

16250 W. Glendale Drive

New Berlin, WI 53151

Ph: (800) 752-0696

Web: [www.abb.us/drives](http://www.abb.us/drives)

LVD-PHPB09U-EN REV B Effective: 09/15/2015 Subject to change without notice.