

Questions Frequently asked about Smartlinx and communications

Q - What is SmartLinx?

A - SmartLinx is a family of small daughterboard modules which may be plugged into a SmartLinx Ready device (AiRanger *PL series, EnviroRanger ERS-500, Accumass BW-500). They are developed and manufactured by HMS Fieldbus System, AB, of Sweden (except for the SmartLinx Modem which was developed by Milltronics).

Q - Does a customer need a BIC-II to support SmartLinx?

A - No, but a BIC-II may still be connected as before, if required (there isn't a compelling reason to use both a BIC-II and SmartLinx, however).

Q - Can I connect an AO-10 and SAM-20 to SmartLinx?

A - No, they use a proprietary Milltronics protocol over a bipolar current loop.

Q - What products support SmartLinx?

A - Currently the AiRanger SPL, DPL+, XPL+, InterRanger DPS-300, EnviroRanger ERS-500 and Accumass BW-500 are Smartlinx compatible. As new products based on a 32-bit micro-controller are released, they will incorporate support for SmartLinx.

Q - What is a protocol?

A - A protocol is the "language" spoken over a connection between two or more devices. All connected devices must speak the same protocol at the same speed for communications to work.

Q - What protocols are supported?

A - Each SmartLinx module supports a different protocol. Currently, we support Allen-Bradley Remote I/O, Profibus-DP, DeviceNet, and Modbus RTU.

Q - Which protocol should my customer choose?

A - In general, if the customer is using Allen-Bradley PLCs, then they would be using either a Remote I/O or DeviceNet module (DeviceNet is a newer one). If the customer is using Siemens PLC's, then, they would probably prefer using Profibus-DP. Modbus RTU is still the most widely supported protocol.

Q - What if the customer doesn't know what protocol his PLC or DCS speaks?

A - The customer should check with the manufacturer of his controller. He may have to buy a communications adapter and/or software. Unfortunately, there is no default protocol which works with everything.

Q - What if my customer hasn't selected a PLC or DCS yet?

A - In this case, you can't give much communications advice. If the primary purpose of the PLC or DCS is only to interface to Milltronics' products, he may want to compare Allen-Bradley, Siemens, and Hitachi, the most popular PLCs in North America, Europe and the Far East, respectively.

Q - Do we support connecting to Allen-Bradley PLCs?

A - Yes. All Allen-Bradley PLCs can communicate using the Remote I/O protocol or DeviceNet, but not all Allen-Bradley PLCs have one of these built-in and ready-to-go. If you are asked to advise on what hardware to use, please direct your customer to a Allen-Bradley representative. Hardware specifications change and so does firmware. It is best to let the experts deal with their own equipment.

Q - Can I use Allen-Bradley Data Highway or Data Highway+?

A - No, these are different protocols. There are currently no plans to support these protocols.

Q - Is Allen-Bradley FlexIO a protocol?

A - No, FlexIO is a product family of I/O blocks, which accept plug-in modules similar to SmartLinx. Each module supports a different protocol; the 1794-ASB module supports Allen-Bradley Remote I/O, and the 1794-ADN module supports DeviceNet.

Q - Do we support Allen-Bradley FlexIO?

A - Yes. If the customer installs a compatible adapter in his FlexIO modules (such as a Allen-Bradley Remote I/O adapter or DeviceNet adapter), then we can have one of our devices on the same network as the FlexIO. Note, however, that we can not talk to the FlexIO because all our cards are slave only.

Q - Do we support connection to Siemens PLCs?

A – Yes, if they support Profibus-DP. Ask the customer if his PLC supports Profibus-DP or L2-DP (note that L2 is different from L2-DP, and we're only compatible with Profibus-DP or L2-DP, but not L2). L2-DP is an enhanced version of L2, and is not backward compatible. Most S7 PLCs support Profibus-DP directly. Some S5 PLCs support Profibus-DP directly; other require a plug-in card called an IM-308c module.

Q - Can we talk to a DCS directly, such as Foxboro, Honeywell, Bailey, et. al.?

A – Ask the customer if his DCS supports one of the SmartLinx protocols. If the DCS supports one of the SmartLinx protocols, it should work. Modbus RTU is the most likely solution for this need.

Q - What Level data is available to the host or master?

A – A host can read or write any parameter. All level readings (up to 10 in the case of the XPL+), as well as some status bits and healthy/failed bits are always available. Other parameters may be read 10 at once, and written one at a time. Simply, the interface works very similar to the keypad: the host (e.g. a PLC) writes the parameter number and point number of the desired parameter, then writes the new parameter value.

Q - What Smartlinx cards can be used with which Milltronics products?

A – Below is a matrix giving the part numbers for the SmartLinx cards that are currently released.

It should be noted that there are now several differences between cards. A card designed for the AiRanger series can not be used on an ERS-500 and a card made for the ERS-500 can not be used on a BW-500 or any combination thereof.

The major differences are:

1. Cards for AiRanger series have a 32 pin header
2. Cards for ERS-500 and BW-500 have a 34 pin header (except for AB RIO which has a 32 pin header).
3. Cards for ERS-500 rack and panel mount has a second header where the terminal strip is normally.
4. Cards for the BW-500 and ERS-500 wall mount have the terminal strip rotated 90 degrees from the way it is on the AiRanger series cards.

Warning: Plugging in a card that was designed for a different product could damage both the card and the device to which you are plugging it into.

	AB-Remote I/O	Profibus	Modbus RTU	DeviceNet	Modem
AiRanger SPL/DPL+, InterRanger DPS-300	51033345	51033346	51033986	51034000	N/A
XPL+ (Canada/US)	51033345	51033346	51033986	51034000	51034208
XPL+ (Europe)	51033345	51033346	51033986	51034000	51034207
EnviroRanger Rack & Panel	51034079	51033796	on board	51033999	N/A
BW-500 & EnviroRanger wall mount	51033794	51033854	on board	51034080	N/A

Please Note: that the **SmartLinx Modem is only available for the XPL+** at this time.

Q - What countries have approved the use of the Smartlinx modem?

A – The following countries have approved the Smartlinx modem;

- Austria
- Belgium
- Canada
- Denmark
- Finland
- France
- Germany
- Greece
- Eire
- Italy
- Luxembourg
- Netherlands
- Portugal
- Spain
- Sweden
- United Kingdom
- United States of America