MODBUS PROTOCOL — akYtec PR Controllers

MODBUS MASTER	1st generation (PR200 / PR100 / PR102 / SMI200)	2nd generation (PR225 / PR205 / PR103)
Supported protocols	Modbus RTU, Modbus ASCII (user-selectable)	Modbus RTU, Modbus ASCII (user-selectable), Modbus TCP
Max. number of slave devices	16 for each interface	32 across all interfaces
Max. number of requests	255 variables per device. One variable can correspond (depending on settings) to a read request, a write request, or a combined read/write request.	192 variables per device starting with akYtec ALP 2.7.349 and firmware versions: PR205: 1.5.0, PR103: 1.7.0. 64 variables in earlier software versions. One variable can correspond either to a read request or a write request.
Support for group requests	Supported starting from akYtec ALP 2.11 and firmware versions: PR100: 3.08, PR100 [M02]: 2.70, PR102: 2.70, PR200: 2.73, SMI200: 2.73. Number of registers per request: up to 48 (configurable).	Supported starting from akYtec ALP 2.10 and firmware versions: PR225: 1.9.0, PR205: 1.9.0, PR103: 1.11.0. Number of registers per request: up to 16 (configurable).
Supported Modbus functions	0x01, 0x02, 0x03, 0x04, 0x05, 0x06, 0x0F, 0x10	0x01, 0x02, 0x03, 0x04, 0x06, 0x0F, 0x10
Supported data types	Bool, Uint16, Uint32, Float	Bool, Uint16, Uint32, Float
Support for byte/register order	Supported; affects only variables of type Float and Uint32	Supported; affects only variables of type Float and Uint32
Support for broadcast request	Not supported	Not supported
Support for polling templates	Supported	Supported starting from akYtec ALP 2.10
Polling control support	Device level: poll / do not poll (parameter Polling). Request level: triggering by rising edge of a boolean variable (parameters Read start / Write start) + option Write on change.	Same logic: device level (Polling parameter) and request level (Read start / Write start) + Write on change option.
Control of desired polling period	Device level	Request level
Diagnostics support	Device level: communication present / absent (parameter Status). Request level: Modbus error code (parameter Status).	Device level: communication present / absent (parameter Status).
Modbus TCP support	Not supported	Supported. Polling of all slave devices occurs sequentially (only one client connection is active at a time). Requests are sent sequentially within the connection. Valid range for Unit ID: 1…247.

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MODBUS PROTOCOL — akYtec PR Controllers

MODBUS SLAVE	1st generation (PR200 / PR100 / PR102 / SMI200)	2nd generation (PR225 / PR205 / PR103)
Supported protocols	Modbus RTU, Modbus ASCII (automatic detection — the response is sent in the same format as the request)	Modbus RTU, Modbus ASCII (automatic detection — the response is sent in the same format as the request), Modbus TCP
Memory area model	Unified memory space with overlapping Input and Holding registers	Unified memory space with overlapping Input and Holding registers
Memory size	64 registers (128 bytes)	1020 registers (2040 bytes)
Support for group requests	Supported without artificial limitations	Supported without artificial limitations
Supported Modbus functions	0x01, 0x02, 0x03, 0x04, 0x05, 0x06, 0x0F, 0x10	0x03, 0x04, 0x06, 0x0F, 0x10, 0x14, 0x15
Bit mask handling	Bit mask parameters can be read using either function 0x03 or 0x01. When using 0x01, the register number	Bit mask parameters can be read only using function 0x03.
Supported data types	Uint16, Float	Uint16, Float
Support for byte/register order	Supported, but affects only system variables of type Float and Uint32.	Not supported. When polling variables occupying two or more registers, the following settings must be used: • Byte order — most significant byte first • Register order — least significant register first
Support for broadcast request	Supported	Supported
Modbus TCP support	Not supported	Supported, up to 4 simultaneous client connections (a fifth connection is independent and reserved for akYtec Cloud). The Unit ID in requests is not validated.
RETAIN support	All network variables are always non-volatile.	Starting from akYtec ALP 2.9, non-volatility can be configured individually for each network variable. In earlier versions, all network variables are always non-volatile.
Register map export support	Export to akYtec Cloud, and CSV file is supported.	Device level: communication present / absent (parameter Status).

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