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MODBUS RTU Functions and Addressing Modes

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MODBUS RTU Function Codes

MODBUS Function Codes Supported

The following MODBUS RTU functions are supported by the T1K–MODBUS base controller.

MODBUS RTU Function Code	Function
01	Read Output Table
02	Read Input Table
03	Read Holding Registers (when addressing mode is 584/984, this function is used to access analog output registers)
04	Read Input Registers (when addressing mode is 584/984, this function is used to access analog input registers)
05	Force Single Output
06	Preset Single Registers
07	Read Exception Status
08	Loop back / Maintenance
09 – 14	–
15	Force Multiple Outputs
16	Preset Multiple Registers
17	Report Device Type
18 – 64	–
65	not supported
66	not supported
68–70	not supported
72	not supported
73 – 127	–

*Direct*Logic Addressing Mode

Using the T1K–MODBUS with a *Direct*Logic PLC Modbus Master

The ***Direct***Logic Addressing mode is set by placing **Dip Switch 7 in the ON position**. The following memory locations are supported by the T1K–MODBUS base controller in the ***Direct***Logic Addressing Mode.

- X0 – X1777 Discrete Inputs
- Y0 – Y1777 Discrete Outputs
- V0 – V177 Analog Inputs
- V1400 – V1577 Analog Outputs

T1K–Modbus Memory Type	QTY. (Dec.)	PLC Range (Octal)	V Memory Range
For Discrete Data Type			
Inputs (X)	1024	X0 – X1777	V40400 – V40477
Outputs (Y)	1024	Y0 – Y1777	V40500 – V40577
For Word (16–bit) Data Types			
Analog Input Data Register (V)	128	V0 – V177	
Analog Output Data Registers (V)	128	V1400 – V1577	

584/984 Addressing Mode

Note: ModScan32 is a Windows based application program that can be used as a MODBUS master to access and change data points in a connected slave device (T1K–MODBUS). The utility is ideally suited for quick and easy testing of MODBUS network slave devices. Visit www.win–tech.com to download a free ModScan32 trial demo and for more information on ModScan32.

Using the T1K–MODBUS with a 584 / 984 MODBUS Master

The 584 / 984 Addressing mode is set by placing **Dip Switch 7 in the OFF position**. The following decimal memory locations are supported by the T1K–MODBUS base controller in the 584 / 984 Addressing Mode.

- 1 – 1024 Discrete Outputs
- 10001 – 11024 Discrete Inputs
- 30001 – 30128 Analog Input Registers
- 30201 – 30264 Bit Input Registers
- 40001 – 40128 Analog Output Registers
- 40201 – 40264 Bit Output Registers

Modbus Data Type		**T1K–MODBUS**			
		Range (Decimal)	**Points**		**Memory Type**
Coil		**1 – 1024**	1024		**Discrete Output**
		1025 – 9999	–		not supported
Input		**10001 – 11024**	1024		**Discrete Input**
		11025 – 19999	–		not supported
Modbus Data Type		**V Memory Range**			
		Range (Decimal)	**Words (16– bit)**	**Channel (32– bit)**	**Memory Type**
Input Register	**Analog Input**	**30001 – 30128**	128	64	Analog Input Register
	Input Register	30129 – 38999	–	–	not supported
	Bit Input Register	**30201 – 30264**	64	–	Discrete Input Bit Register
	Input Register	39129 – 39999	–	–	not supported
Hold Register	**Analog output**	**40001 – 40128**	128	64	Analog Output Register
	Hold Register	40129 – 40200	–	–	not supported
	Bit Output Register	**40201 – 40264**	64		Discrete Output Bit Register
	Hold Register	40265 – 49000	–	–	not supported
	Hold Register	49001 – 49128	128	–	Special Register
	Hold Register	49129 – 49999	–	–	not supported