Remote control for the Easygen and LS-5 via Modbus

Application Note 313

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The *proconX* ESENET gateway offers a fast and reliable solution to remote control Woodward's Easygen and LS-5 devices via Ethernet and Modbus/TCP.

This document explains how to access the *500* range remote control words and bits of the Woodward devices using Modbus registers.

> The remote control words must be accessed using a single register Modbus command. This can be accomplished either by using *Write single register* function code 06 or the *Write multiple registers* function code 16 with a register count of 1. A Modbus exception will be returned if this is not followed.

Easygen-3000 Remote Control Modbus Registers

Address block	Register address	Easygen-3000 manual designator	Parameter ID	Encoding	Function
4	504	Remote Control Word 1	503	Bit 0: Remote start Bit 1: Remote stop Bit 2: write always 0 Bit 3: write always 0 Bit 4: Alarm acknowledgment Bit 5-15: internal use	Easygen remote start/stop/alarm acknowledge
4	505	Remote Control Word 2	504	Bit 0-3: internal use Bit 4: Remote V setpoint [04.37] Bit 5: Remote F setpoint [04.38] Bit 6: Remote PF setpoint [04.39] Bit 7: Remote P setpoint [04.40] Bit 8-15: internal use	Easygen activate remote setpoints 2
4	506	Remote Control Word 3	505		Freely configurable in Logics Manager [a]
4	508	Remote Active Power Setpoint	507	kW × 10	Easygen Analog Manager data source [05.06]
4	509	Remote Power Factor Setpoint	508	$\cos \varphi \times 1000$	Easygen Analog Manager data source [05.12]
4	510	Remote Frequency Setpoint	509	Hz × 100	Easygen Analog Manager data source [05.03]
4	511	Remote Voltage Setpoint	510	V × 1	Easygen Analog Manager data source [05.09]
4	523	Remote Reset Alarm	522	Parameter ID of alarm	Resetting specific alarms
4	542	Remote Control Bit 16	541	0=off, 1=on	Logics Manager command variable [04.59]
4	543	Remote Control Bit 15	542	0=off, 1=on	Logics Manager command variable [04.58]

Address block	Register address	Easygen-3000 manual designator	Parameter ID	Encoding	Function
4	544	Remote Control Bit 14	543	0=off, 1=on	Logics Manager command variable [04.57]
4	545	Remote Control Bit 13	544	0=off, 1=on	Logics Manager command variable [04.56]
4	546	Remote Control Bit 12	545	0=off, 1=on	Logics Manager command variable [04.55]
4	547	Remote Control Bit 11	546	0=off, 1=on	Logics Manager command variable [04.54]
4	548	Remote Control Bit 10	547	0=off, 1=on	Logics Manager command variable [04.53]
4	549	Remote Control Bit 9	548	0=off, 1=on	Logics Manager command variable [04.52]
4	550	Remote Control Bit 8	549	0=off, 1=on	Logics Manager command variable [04.51]
4	551	Remote Control Bit 7	550	0=off, 1=on	Logics Manager command variable [04.50]
4	552	Remote Control Bit 6	551	0=off, 1=on	Logics Manager command variable [04.49]
4	553	Remote Control Bit 5	552	0=off, 1=on	Logics Manager command variable [04.48]
4	554	Remote Control Bit 4	553	0=off, 1=on	Logics Manager command variable [04.47]
4	555	Remote Control Bit 3	554	0=off, 1=on	Logics Manager command variable [04.46]
4	556	Remote Control Bit 2	555	0=off, 1=on	Logics Manager command variable [04.45]
4	557	Remote Control Bit 1	556	0=off, 1=on	Logics Manager command variable [04.44]

[a]The bits of this control word can alternatively be written individually using Paremeter ID 541 - 556

Table 1: Modbus register addresses for Easygen-3000 series remote control registers

LS-5 Remote Control Modbus Registers

Address block	Register address	LS-5 manual designator	Parameter ID	Encoding	Function
4	506	Remote Control Word 3	505		Freely configurable in Logics Manager [a]
4	523	Remote Reset Alarm	522	Parameter ID of alarm	Resetting specific alarms
4	542	Remote Control Bit 16	541	0=off, 1=on	Logics Manager command variable [04.59]
4	543	Remote Control Bit 15	542	0=off, 1=on	Logics Manager command variable [04.58]
4	544	Remote Control Bit 14	543	0=off, 1=on	Logics Manager command variable [04.57]
4	545	Remote Control Bit 13	544	0=off, 1=on	Logics Manager command variable [04.56]
4	546	Remote Control Bit 12	545	0=off, 1=on	Logics Manager command variable [04.55]
4	547	Remote Control Bit 11	546	0=off, 1=on	Logics Manager command variable [04.54]
4	548	Remote Control Bit 10	547	0=off, 1=on	Logics Manager command variable [04.53]
4	549	Remote Control Bit 9	548	0=off, 1=on	Logics Manager command variable [04.52]
4	550	Remote Control Bit 8	549	0=off, 1=on	Logics Manager command variable [04.51]
4	551	Remote Control Bit 7	550	0=off, 1=on	Logics Manager command variable [04.50]
4	552	Remote Control Bit 6	551	0=off, 1=on	Logics Manager command variable [04.49]
4	553	Remote Control Bit 5	552	0=off, 1=on	Logics Manager command variable [04.48]
4	554	Remote Control Bit 4	553	0=off, 1=on	Logics Manager command variable [04.47]
4	555	Remote Control Bit 3	554	0=off, 1=on	Logics Manager command variable [04.46]
4	556	Remote Control Bit 2	555	0=off, 1=on	Logics Manager command variable [04.45]
4	557	Remote Control Bit 1	556	0=off, 1=on	Logics Manager command variable [04.44]

[a]The bits of this control word can alternatively be written individually using Paremeter ID 541 - 556

Table 2: Modbus register addresses for LS-5 series remote control registers

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