



UDC 2500 Application Note

Communications Group

Introduction

The Communications group lets you configure the controller to be connected to a host computer via Modbus® or Ethernet TCP/IP protocol. . Two parameters in this Group, Communications Station Address and TX Delay, are also used for IR communications. No other parameters affect IR communications.

Introduction

A controller with a communications option looks for messages from the host computer. If these messages are not received within the configured shed time, the controller will SHED from the communications link and return to stand-alone operation. You can also set the SHED output mode and setpoint recall, and communication units.

Up to 99 addresses can be configured over this link. The number of units that can be configured depends on the link length, with 31 being the maximum for short link lengths and 15 drops being the maximum at the maximum link length.

Function Prompts

Table Error! No text of specified style in document.-1 Communications Group (Numeric Code 1000) Function Prompts

Function Prompt Lower Display		Selection or Range of Setting Upper Display		Parameter Definition
English	Numeri c Code	English	Numeri c Code	
ComADR	1001	1 to 99		COMMUNICATIONS STATION ADDRESS —This is a number that is assigned to a controller that is to be used with the communications option. This number will be its address. This parameter is also used for the IR communications link.
COMSTA	1002	DIS MODB	0 1	COMMUNICATIONS SELECTION DISABLE —Disables the communications option. MODBUS —Allows Modbus RTU communication prompts.
IRENAB	1003	DIS ENAB	0 1	INFRARED COMMUNICATIONS – Enables/ Disables the IR Port.
BAUD	1004	4800 9600 19200 38400	0 1 2 3	BAUD RATE is the transmission speed in bits per second. 4800 BAUD 9600 BAUD 19200 BAUD 38400 BAUD



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English	Numeri c Code	English	Numeri c Code																													
TX_DLY	1005	1 to 500 milliseconds		TX DELAY —Configurable response-delay timer allows you to force the UDC to delay its response for a time period of from 1 to 500 milliseconds compatible with the host system hardware/software. This parameter is also used for the IR communications link.																												
WS_FLT	1006			<p>Defines word/byte order of floating point data for communications. Byte values:</p> <table style="margin-left: 40px;"> <tr> <td style="text-align: center;">0</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> </tr> <tr> <td style="text-align: center;">s e e e e e e e</td> <td style="text-align: center;">e m m m m m m m</td> <td style="text-align: center;">m m m m m m m m</td> <td style="text-align: center;">m m m m m m m m</td> </tr> </table> <p>Where: s = sign, e = exponent, m = mantissa bit</p> <table style="margin-left: 40px;"> <tr> <td style="text-align: center;">0</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> </tr> <tr> <td style="text-align: center;">0</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> </tr> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">0</td> <td style="text-align: center;">3</td> <td style="text-align: center;">2</td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">2</td> <td style="text-align: center;">1</td> <td style="text-align: center;">0</td> </tr> <tr> <td style="text-align: center;">3</td> <td style="text-align: center;">3</td> <td style="text-align: center;">0</td> <td style="text-align: center;">1</td> </tr> </table>	0	1	2	3	s e e e e e e e	e m m m m m m m	m m m m m m m m	m m m m m m m m	0	1	2	3	0	1	2	3	1	0	3	2	2	2	1	0	3	3	0	1
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SDENAB	1007	DIS ENAB	0 1	SHED ENABLE —Disables/enables shed functionality. <i>You must set this to ENAB if control algorithm is TPSC.</i>																												
SHDTIM	1008	0 to 255 Sample Periods		<p>SHED TIME—The number that represents how many sample periods there will be before the controller sheds from communications. Each period equals 1/3 seconds; 0 equals No shed.</p> <p>Note: If ComSTA is set to MODBUS and if SHEDENAB is set to DISABL, Shed Time will not be configurable.</p>																												
SDMODE	1009			<p>SHED CONTROLLER MODE AND OUTPUT LEVEL—Determines the mode of local control you want when the controller is shed from the communications link.</p> <p>LAST—SAME MODE AND OUTPUT—The controller will return to the same mode (manual or automatic) at the same output level that it had before shed.</p> <p>TO MAN—MANUAL MODE, SAME OUTPUT—The controller will return to manual mode at the same output level that it had before shed.</p> <p>FSAFE—MANUAL MODE, FAILSAFE OUTPUT—The controller will return to manual mode at the output value selected at Control prompt FAILSAFE.</p>																												



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Function Prompt Lower Display		Selection or Range of Setting Upper Display		Parameter Definition
English	Numeri c Code	English	Numeri c Code	
		AUTO	3	TO AUTO —AUTOMATIC MODE, LAST SP—The controller will return to the automatic mode and the last setpoint used before shed.
SHD_SP	1010	LSP CSP	0 1	SHED SETPOINT RECALL Note: If SHEDENAB=DISABLE, this prompt will not be configurable. TO LSP —Controller will use last local or remote setpoint used. TO CSP —When in “slave” mode, the controller will store the last host computer setpoint and use it at the Local setpoint. When in “monitor” mode, the controller will shed to the last UDC Local or Remote setpoint used, and the LSP is unchanged.
UNITS	1011	PCT EGR	0 1	PERCENT ENGINEERING UNITS
CSRATIO	1012	-20.0 to 20.0		COMPUTER SETPOINT RATIO —Computer setpoint ratio.
CSP_BI	1013	-999 to 9999		COMPUTER SETPOINT RATIO —Computer setpoint ratio in Engineering Units.
LOOPBK	1014	DIS ENAB	0 1	LOCAL LOOPBACK tests the communications hardware. DISABLE —Disables the Loopback test. ENABLE —Allows loopback test. The UDC goes into Loopback mode in which it sends and receives its own message. The UDC displays PASS or FAIL status in the upper display and LOOPBACK in the lower display while the test is running. The UDC will go into manual mode when LOOPBACK is enabled with the output at the Failsafe value. The test will run until the operator disables it here, or until power is turned off and on. ATTENTION The instrument does not have to be connected to the external communications link in order to perform this test. If it is connected, only one instrument should run the loopback test at a time. The host computer should not be transmitting on the link while the loopback test is active.