



User's Guide

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iR2 Communication Manual



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It is the policy of OMEGA to comply with all worldwide safety and EMC/EMI regulations that apply. OMEGA is constantly pursuing certification of its products to the European New Approach Directives. OMEGA will add the CE mark to every appropriate device upon certification.

The information contained in this document is believed to be correct, but OMEGA Engineering, Inc. accepts no liability for any errors it contains, and reserves the right to alter specifications without notice.

WARNING: These products are not designed for use in, and should not be used for, patient-connected applications.

 This device is marked with the international caution symbol. It is important to read the Setup Guide before installing or commissioning this device as the guide contains important information relating to safety and EMC.

iR2 Serial Communication Register List

Command	Command Index	Function	Command Bytes	# Of Characters	Default value (ex: with Analog Output option)
RW	01	SP1	3	6	1003E8
RW	02	SP2	3	6	1003E8
GPRW	03	RDGOFF	3	6	A00000
RW	04	ANLOFF	3	6	C001F4
RW	05	ID	2	4	0000
-	06	N/A	-	-	-
RW	07	INPUT	1	2	02
GPRW	08	RDGCNF	1	2	41
RW	09	AL1CNFG	1	2	81
RW	0A	AL2CNFG	1	2	00
RW	0B	LOOP BREAK TIME	2	4	003B
RW	0C	OUT1CNF	1	2	00
RW	0D	OUT2CNF	1	2	62
RW	0E	RAMPTIME	2	4	0000
RW	0F	ANLSCL	3	6	9186A0
RW	10	COMM.PARAMETERS	1	2	0D
RW	11	COLOR	1	2	09
RW	12	AL1LO	3	6	A003E8
RW	13	AL1HI	3	6	200FA0
GPRW	14	RDGSCL	3	6	100001
RW	15	AL2LO	3	6	A003E8
RW	16	AL2HI	3	6	200FA0
GPRW	17	PB1/DEAD BAND	2	4	00C8
GPRW	18	RESET 1	2	4	00B4
GPRW	19	RATE 1	2	4	0
GPRW	1A	CYCLE 1	1	2	7
-	1B	N/A	-	-	-
GPRW	1C	PB2/DEAD BAND	2	4	00C8
GPRW	1D	CYCLE 2	1	2	7
RW	1E	SOAK TIME	2	4	0
RW	1F	BUS FORMAT	1	2	14
GPRW	20	DATA FORMAT	1	2	2
RW	21	ADDRESS	1	2	1
RW	22	Transit Time Interval	2	4	10
R(W?)	23	?	3	6	814585
RW	24	Miscellaneous	1	2	0
RW	25	C.J. OFFSET ADJ.	3	6	200000

RW	26	Recognition Character	1	2	2A
RW	27	%LOW	1	2	0
RW	28	%HI	1	2	63
RW	30	EMISSIVITY Value	2	4	03E8
RW	31	SLOP Value	2	4	03E8
RW	44	VOLT OFFSET (ANLG. CAL.)	2	4	0000
RW	45	VOLT SCALE (ANLG. CAL.)	2	4	8000
RW	46	CURR. OFFSET (ANLG. CAL.)	2	4	0000
RW	47	CURR.SCALE (ANLG. CAL.)	2	4	8000
D	01	DISABLE ALARM 1	0	0	-
D	02	DISABLE ALARM 2	0	0	-
D	03	STANDBY	0	0	-
D	04	DISABLE SELF	0	0	-
E	01	ENABLE ALARM 1	0	0	-
E	02	ENABLE ALARM 2	0	0	-
E	03	DISABLE STANDBY	0	0	-
E	04	ENABLE SELF	0	0	-
X	01	SEND READING(SGLE.COLR)	0	0	-
X	02	SEND PEAK READING	0	0	-
X	03	SEND VALLEY READING	0	0	-
X	04	SEND READING(DUAL COLR)	0	0	
X	05	CALIBRATION (DATA STRING)	0	0	
U	01	SEND ALARM STATUS	0	0	-
U	03	SEND SW VERSION	0	0	(Dec. #)
V	01	SEND DATA STRING	0	0	-
Z	02	HARD RESET	0	0	-

iR2 Modbus Comm. Register Description List

FUNCTION CODE	REGISTER	FUNCTION	NUMBER of BYTE	Default value (ex: with Analog Output option)
03/04, 06	01	SP1 : SETPOINT 1 VALUE	2	03E8
03/04, 06	02	SP2 : SETPOINT 2 VALUE	2	03E8
(N/A)	03	(N/A)	x	X
(N/A)	04	(N/A)	x	X
03/04, 06	05	ID : Security ID code	2	0000
(N/A)	06	(N/A)	X	X
03/04, 06	07	IR : INPUT CONFIGURATION (*)	1	02
03/04, 06	08	RdG.CNF : READING CONFIG (**)	2	41
03/04, 06	09	AL1/ANLG.OUTPUT CNFG	1	81
03/04, 06	0A	AL2/ANLG.OUTPUT CNFG	1	0000
03/04, 06	0B	LOOP BREAK TIME VALUE	2	003B
03/04, 06	0C	OUTPUT 1 CONFIGURATION	1	00
03/04, 06	0D	OUTPUT 2 CONFIGURATION	1	62
03/04, 06	0E	RAMP TIME VALUE	2	0000
(N/A)	0F	(N/A)	X	X
03/04, 06	10	COMM. PARAMETERS	1	0D
(N/A)	11	(N/A)	1	X
03/04, 06	12	ALARM1 LOW VALUE	2	03E8
03/04, 06	13	ALARM1 HIGH VALUE	2	05DC
(N/A)	14	(N/A)	X	X
03/04, 06	15	ALARM2 LOW VALUE	2	0320
03/04, 06	16	ALARM2 HIGH VALUE	2	03E8
03/04, 06	17	PB1/DEAD BAND1 VALUE	2	00C8
03/04, 06	18	RESET1 VALUE(Time in Sec.)	2	00B4
03/04, 06	19	RATE 1 VALUE(Time in Sec.)	2	0000
03/04, 06	1A	CYCLE 1 VALUE(Time in Sec.)	1	07
(N/A)	1B	(N/A)	X	X
03/04, 06	1C	PB2/DEAD BAND2 VALUE	2	00C8
03/04, 06	1D	CYCLE 2 VALUE(Time in Sec.)	1	07
03/04, 06	1E	SOAK TIME	2	0000
03/04, 06	1F	BUS FORMAT	1	14
03/04, 06	20	DATA FORMAT	1	02
03/04, 06	21	ADDRESS	1	01
03/04, 06	22	TRANSIT TIME	2	0010
(N/A)	23	(N/A)	X	X
(N/A)	24	(N/A)	X	X
(N/A)	25	(N/A)	X	X
03/04, 06	26	RECOGNITION CHARACTER	1	2A
03/04	27	PROCESS VALUE	2	(Main Reading)
03/04	28	PEAK VALUE	2	
03/04	29	VALLEY VALUE	2	
03/04	2A	SOFTWARE VERSION	1	

(*) Format description of Register Location 07:

BIT POSITION								<i>I R</i> (INPUT CONFIGURATION) FORMAT REGISTER = 07			
7	6	5	4	3	2	1	0			Value to be read or written:	
							0	Laser Off			
							1	Laser On			
						0		Dual Color			
						1		Single Color			
0	0	0	0	0	0	0	0	Dual Color	Laser Off	00	
0	0	0	0	0	0	0	1	Dual Color	Laser ON	01	
0	0	0	0	0	0	1	0	Single Color	Laser Off	<u>02</u>	
0	0	0	0	0	0	1	1	Single Color	Laser ON	03	

(**) Format description of Register Location 08:

BIT POSITION								<i>RdG</i> (READING CONFIGURATION) FORMAT REGISTER = 08		
7	6	5	4	3	2	1	0			
				0	0	0	1	°C		
				1	0	0	1	°F		
0	0	0						<i>FLtR</i> (FILTER TIME CONSTANT) = 0001		
0	0	1						<i>FLtR</i> (FILTER TIME CONSTANT) = 0002		
0	1	0						<i>FLtR</i> (FILTER TIME CONSTANT) = <u>0004</u>		
0	1	1						<i>FLtR</i> (FILTER TIME CONSTANT) = 0008		
1	0	0						<i>FLtR</i> (FILTER TIME CONSTANT) = 0016		
1	0	1						<i>FLtR</i> (FILTER TIME CONSTANT) = 0032		
1	1	0						<i>FLtR</i> (FILTER TIME CONSTANT) = 0064		
1	1	1						<i>FLtR</i> (FILTER TIME CONSTANT) = 0128		



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