



OI-7440 Modbus Register Map

Register Address (Hexadecimal)	Register Address (Decimal)	Data Description	R/W	Length (In Bits)	Units	Valid Response
Radio Data						
1	1	Channel 1 Port Number	R	16	INTEGER	1
2	2	Channel 2 Port Number	R	16	INTEGER	2
3	3	Channel 3 Port Number	R	16	INTEGER	3
4	4	Channel 4 Port Number	R	16	INTEGER	4
5	5	Channel 1 Reading	R	32	FLOAT	Any valid sensor reading
7	7	Channel 2 Reading	R	32	FLOAT	Any valid sensor reading
9	9	Channel 3 Reading	R	32	FLOAT	Any valid sensor reading
B	11	Channel 4 Reading	R	32	FLOAT	Any valid sensor reading
D	13	Channel 1 Mode	R	16	ENUMERATION	0-1 . 0 is in normal mode, 1 is any other mode.
E	14	Channel 2 Mode	R	16	ENUMERATION	0-1 . 0 is in normal mode, 1 is any other mode.
F	15	Channel 3 Mode	R	16	ENUMERATION	0-1 . 0 is in normal mode, 1 is any other mode.
10	16	Channel 4 Mode	R	16	ENUMERATION	0-1 . 0 is in normal mode, 1 is any other mode.
11	17	Channel 1 Power	R	32	FLOAT	0. The 4-20 Sensors do not send the power reading.
13	19	Channel 2 Power	R	32	FLOAT	0. The 4-20 Sensors do not send the power reading.
15	21	Channel 3 Power	R	32	FLOAT	0. The 4-20 Sensors do not send the power reading.
17	23	Channel 4 Power	R	32	FLOAT	0. The 4-20 Sensors do not send the power reading.
19	25	Channel 1 Sensor Type	R	16	ENUMERATION	0. The 4-20 Sensors do not send the Sensor Type.
1A	26	Channel 2 Sensor Type	R	16	ENUMERATION	0. The 4-20 Sensors do not send the Sensor Type.
1B	27	Channel 3 Sensor Type	R	16	ENUMERATION	0. The 4-20 Sensors do not send the Sensor Type.
1C	28	Channel 4 Sensor Type	R	16	ENUMERATION	0. The 4-20 Sensors do not send the Sensor Type.
1D	29	Channel 1 Gas Type	R/W	16	ENUMERATION	0-127 See Gas Enumeration below
1E	30	Channel 2 Gas Type	R/W	16	ENUMERATION	0-127 See Gas Enumeration below
1F	31	Channel 3 Gas Type	R/W	16	ENUMERATION	0-127 See Gas Enumeration below
20	32	Channel 4 Gas Type	R/W	16	ENUMERATION	0-127 See Gas Enumeration below
21	33	Channel 1 Fault	R	16	ENUMERATION	0 or 13. The 4-20 Sensors do not send what type of Fault
22	34	Channel 2 Fault	R	16	ENUMERATION	0 or 13. The 4-20 Sensors do not send what type of Fault
23	35	Channel 3 Fault	R	16	ENUMERATION	0 or 13. The 4-20 Sensors do not send what type of Fault
24	36	Channel 4 Fault	R	16	ENUMERATION	0 or 13. The 4-20 Sensors do not send what type of Fault
25	37	Channel 1 On/Off	R/W	16	ENUMERATION	0 - 1, 0 means off, 1 means on
26	38	Channel 2 On/Off	R/W	16	ENUMERATION	0 - 1, 0 means off, 1 means on
27	39	Channel 3 On/Off	R/W	16	ENUMERATION	0 - 1, 0 means off, 1 means on
28	40	Channel 4 On/Off	R/W	16	ENUMERATION	0 - 1, 0 means off, 1 means on
29	41	Channel 1 Relay 1 On/Off	R/W	16	ENUMERATION	0 - 1, 0 means off, 1 means on
2A	42	Channel 2 Relay 1 On/Off	R/W	16	ENUMERATION	0 - 1, 0 means off, 1 means on
2B	43	Channel 3 Relay 1 On/Off	R/W	16	ENUMERATION	0 - 1, 0 means off, 1 means on
2C	44	Channel 4 Relay 1 On/Off	R/W	16	ENUMERATION	0 - 1, 0 means off, 1 means on
2D	45	Channel 1 Relay 1 High/Low	R/W	16	ENUMERATION	0 - 1, 0 means low, 1 means high
2E	46	Channel 2 Relay 1 High/Low	R/W	16	ENUMERATION	0 - 1, 0 means low, 1 means high
2F	47	Channel 3 Relay 1 High/Low	R/W	16	ENUMERATION	0 - 1, 0 means low, 1 means high

30	48	Channel 4 Relay 1 High/Low	R/W	16	ENUMERATION	0 - 1 ,0 means low, 1 means high
31	49	Channel 1 Relay 1 Set Point	R/W	32	FLOAT	Float < 2000.When writing it needs to be less than the scale.
33	51	Channel 2 Relay 1 Set Point	R/W	32	FLOAT	Float < 2000.When writing it needs to be less than the scale.
35	53	Channel 3 Relay 1 Set Point	R/W	32	FLOAT	Float < 2000.When writing it needs to be less than the scale.
37	55	Channel 4 Relay 1 Set Point	R/W	32	FLOAT	Float < 2000.When writing it needs to be less than the scale.
39	57	Channel 1 Relay 1 Latch/Unlatch	R/W	16	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3A	58	Channel 2 Relay 1 Latch/Unlatch	R/W	16	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3B	59	Channel 3 Relay 1 Latch/Unlatch	R/W	16	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3C	60	Channel 4 Relay 1 Latch/Unlatch	R/W	16	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3D	61	Channel 1 Relay 2 On/Off	R/W	16	ENUMERATION	0 - 1 ,0 means off, 1 means on
3E	62	Channel 2 Relay 2 On/Off	R/W	16	ENUMERATION	0 - 1 ,0 means off, 1 means on
3F	63	Channel 3 Relay 2 On/Off	R/W	16	ENUMERATION	0 - 1 ,0 means off, 1 means on
40	64	Channel 4 Relay 2 On/Off	R/W	16	ENUMERATION	0 - 1 ,0 means off, 1 means on
41	65	Channel 1 Relay 2 High/Low	R/W	16	ENUMERATION	0 - 1 ,0 means low, 1 means high
42	66	Channel 2 Relay 2 High/Low	R/W	16	ENUMERATION	0 - 1 ,0 means low, 1 means high
43	67	Channel 3 Relay 2 High/Low	R/W	16	ENUMERATION	0 - 1 ,0 means low, 1 means high
44	68	Channel 4 Relay 2 High/Low	R/W	16	ENUMERATION	0 - 1 ,0 means low, 1 means high
45	69	Channel 1 Relay 2 Set Point	R/W	32	FLOAT	Float < 2000.When writing it needs to be less than the scale.
47	71	Channel 2 Relay 2 Set Point	R/W	32	FLOAT	Float < 2000.When writing it needs to be less than the scale.
49	73	Channel 3 Relay 2 Set Point	R/W	32	FLOAT	Float < 2000.When writing it needs to be less than the scale.
4B	75	Channel 4 Relay 2 Set Point	R/W	32	FLOAT	Float < 2000.When writing it needs to be less than the scale.
4D	77	Channel 1 Relay 2 Latch/Unlatch	R/W	16	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
4E	78	Channel 2 Relay 2 Latch/Unlatch	R/W	16	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
4F	79	Channel 3 Relay 2 Latch/Unlatch	R/W	16	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
50	80	Channel 4 Relay 2 Latch/Unlatch	R/W	16	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
51	81	Channel 1 Relay 3 On/Off	R/W	16	ENUMERATION	0 - 1 ,0 means off, 1 means on
52	82	Channel 2 Relay 3 On/Off	R/W	16	ENUMERATION	0 - 1 ,0 means off, 1 means on
53	83	Channel 3 Relay 3 On/Off	R/W	16	ENUMERATION	0 - 1 ,0 means off, 1 means on
54	84	Channel 4 Relay 3 On/Off	R/W	16	ENUMERATION	0 - 1 ,0 means off, 1 means on
55	85	Channel 1 Relay 3 High/Low	R/W	16	ENUMERATION	0 - 1 ,0 means low, 1 means high
56	86	Channel 2 Relay 3 High/Low	R/W	16	ENUMERATION	0 - 1 ,0 means low, 1 means high
57	87	Channel 3 Relay 3 High/Low	R/W	16	ENUMERATION	0 - 1 ,0 means low, 1 means high
58	88	Channel 4 Relay 3 High/Low	R/W	16	ENUMERATION	0 - 1 ,0 means low, 1 means high
59	89	Channel 1 Relay 3 Set Point	R/W	32	FLOAT	Float < 2000.When writing it needs to be less than the scale.
5B	91	Channel 2 Relay 3 Set Point	R/W	32	FLOAT	Float < 2000.When writing it needs to be less than the scale.
5D	93	Channel 3 Relay 3 Set Point	R/W	32	FLOAT	Float < 2000.When writing it needs to be less than the scale.
5F	95	Channel 4 Relay 3 Set Point	R/W	32	FLOAT	Float < 2000.When writing it needs to be less than the scale.
61	97	Channel 1 Relay 3 Latch/Unlatch	R/W	16	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
62	98	Channel 2 Relay 3 Latch/Unlatch	R/W	16	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
63	99	Channel 3 Relay 3 Latch/Unlatch	R/W	16	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
64	100	Channel 4 Relay 3 Latch/Unlatch	R/W	16	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
65	101	Channel 1 Relay 4 On/Off	R/W	16	ENUMERATION	0 - 1 ,0 means off, 1 means on
66	102	Channel 2 Relay 4 On/Off	R/W	16	ENUMERATION	0 - 1 ,0 means off, 1 means on
67	103	Channel 3 Relay 4 On/Off	R/W	16	ENUMERATION	0 - 1 ,0 means off, 1 means on
68	104	Channel 4 Relay 4 On/Off	R/W	16	ENUMERATION	0 - 1 ,0 means off, 1 means on
69	105	Channel 1 Relay 4 High/Low	R/W	16	ENUMERATION	0 - 1 ,0 means low, 1 means high
2 6A	106	Channel 2 Relay 4 High/Low	R/W	16	ENUMERATION	0 - 1 ,0 means low, 1 means high

6B	107	Channel 3 Relay 4 High/Low	R/W	16	ENUMERATION	0 - 1 ,0 means low, 1 means high
6C	108	Channel 4 Relay 4 High/Low	R/W	16	ENUMERATION	0 - 1 ,0 means low, 1 means high
6D	109	Channel 1 Relay 4 Set Point	R/W	32	FLOAT	Float < 2000.When writing it needs to be less than the scale.
6F	111	Channel 2 Relay 4 Set Point	R/W	32	FLOAT	Float < 2000.When writing it needs to be less than the scale.
71	113	Channel 3 Relay 4 Set Point	R/W	32	FLOAT	Float < 2000.When writing it needs to be less than the scale.
73	115	Channel 4 Relay 4 Set Point	R/W	32	FLOAT	Float < 2000.When writing it needs to be less than the scale.
75	117	Channel 1 Relay 4 Latch/Unlatch	R/W	16	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
76	118	Channel 2 Relay 4 Latch/Unlatch	R/W	16	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
77	119	Channel 3 Relay 4 Latch/Unlatch	R/W	16	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
78	120	Channel 4 Relay 4 Latch/Unlatch	R/W	16	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
79	121	Channel 1 Max Scale	R/W	16	INTEGER	0-2000. This is the scale of the sensor on this channel.
7A	122	Channel 2 Max Scale	R/W	16	INTEGER	0-2000. This is the scale of the sensor on this channel.
7B	123	Channel 3 Max Scale	R/W	16	INTEGER	0-2000. This is the scale of the sensor on this channel.
7C	124	Channel 4 Max Scale	R/W	16	INTEGER	0-2000. This is the scale of the sensor on this channel.
7D	125	Channel 1 Min Scale	R/W	16	INTEGER	-70-0. This is the bottom of the scale.
7E	126	Channel 2 Min Scale	R/W	16	INTEGER	-70-0. This is the bottom of the scale.
7F	127	Channel 3 Min Scale	R/W	16	INTEGER	-70-0. This is the bottom of the scale.
80	128	Channel 4 Min Scale	R/W	16	INTEGER	-70-0. This is the bottom of the scale.
Modbus and Build Data						
1771	6001	Modbus Address	R/W	16	INTEGER	1 – 247
1772	6002	Modbus Baud Rate	R/W	16	INTEGER	Valid Baud Rate. See below.
1773	6003	Month	R	16	INTEGER	1 – 12
1774	6004	Day	R	16	INTEGER	1 – 31
1775	6005	Year	R	16	INTEGER	2009 –
1776	6006	Serial Number Character	R	16	ENUMERATION	6 This is for the Letter “F” in the serial number.
1777	6007	Serial Number	R	32	LONG INT	1 – 99999
Settings in Startup Menu						
177C	6012	Relay 4 as Fault Relay	R	16	ENUMERATION	0 – 1, 0 means normal relay, 1 means Fault Relay
177D	6013	Relay 1 Fail Safe	R	16	ENUMERATION	0 – 1, 0 means not Fail Safe, 1 means Fail Safe
177E	6014	Relay 2 Fail Safe	R	16	ENUMERATION	0 – 1, 0 means not Fail Safe, 1 means Fail Safe
177F	6015	Relay 3 Fail Safe	R	16	ENUMERATION	0 – 1, 0 means not Fail Safe, 1 means Fail Safe
1780	6016	Relay 4 Fail Safe	R	16	ENUMERATION	0 – 1, 0 means not Fail Safe, 1 means Fail Safe
1781	6017	Fault Terminal Fail Safe	R	16	ENUMERATION	0 – 1, 0 means not Fail Safe, 1 means Fail Safe
Diagnostics Data						
2704	9988	Reset	R/W	16	INTEGER	0, 1. If user sets to 1, resets the unit.
2705	9989	Serial Receive Good Count	R	16	UINT	0 – 65535
2706	9990	Serial Receive Error Count	R	16	UINT	0 – 65535
2707	9991	Serial Transmit Good Count	R	16	UINT	0 – 65535
2708	9992	Serial Transmit Error Count	R	16	UINT	0 – 65535
2709	9993	Radio Receive Good Count	R	16	UINT	0 – 65535
270A	9994	Radio Receive Error Count	R	16	UINT	0 – 65535
270B	9995	Radio Transmit Good Count	R	16	UINT	0 – 65535
270C	9996	Radio Transmit Error Count	R	16	UINT	0 – 65535
270D	9997	Uptime Days	R	16	UINT	0 – 65535
270E	9998	Uptime Hours	R	16	UINT	0 – 65535
270F	9999	Uptime Minutes	R	16	UINT	0 – 65535

SENSOR	MODE
0	NORMAL
1	NULL
2	CALIBRATION
3	RELAY
4	Radio ADD
5	Diagnostic/Batt
6	Advanced Menu
7	Admin Menu

Valid Baud Rates
4800
9600
19200

Serial Number Char	Char
1	A
2	B
3	C
4	D
5	E
6	F
7	G
8	H
9	I
10	J
11	K
12	L
13	M
14	N
15	O
16	P
17	Q
18	R
19	S
20	T
21	U
22	V
23	W
24	X
25	Y
26	Z
27	AA
28	AB
29	AC
30	AD
31	AE
32	AF
33	AG
34	AH
35	AI
36	AJ

FAULT	FAULT
0	NONE
1	N/A
2	Future Error
3	N/A
4	N/A
5	N/A
6	N/A
7	Future Error
8	N/A
9	N/A
10	When Sensor is wired, it means no sensor is connected
11	N/A
12	Future Error
13	Unspecified Error on sensor unit. Shown only on Monitor
14	N/A
15	Monitor Fault

SENSOR TYPE NUM	SENSOR
0	EC
1	IR
2	CB
3	MOS
4	PID
5	TANK
6	4-20
7	SWITCH
8	Unknown
30	WF190
31	None Selected

GAS TYPE NUM	GAS
0	H2S
1	SO2
2	O2
3	CO
4	CL2
5	CO2
6	LEL
7	VOC
8	FEET
9	HCI

37	AK
38	AL
39	AM
40	AN
41	AO
42	AP
43	AQ
44	AR
45	AS
46	AT
47	AU
48	AV
49	AW
50	AX
51	AY
52	AZ

10	NH3
11	H2
12	ClO2
13	HCN
14	F2
15	HF
16	CH2O
17	NO2
18	O3
19	INCHES
20	4-20
21	Not Specified
22	C°
23	F°
24	% Vol CH4
25	NO
26	PH3
27..N	Future Gases