



INSTRUCTION MANUAL



EN - FR - CN - RU



MODBUS TCP REGISTERS

WDC4V4CAI & WDC4V46CAI

WATCHDOG SUPER ELITE

REV120224

Watchdog Super Elite (WDC4) Modbus TCP Registers

Key	
Base Register	30000
Type	Read Only
Function Code	Read Input Registers (04)
Transmission Data Format	Big Endian
X	Do Not Care Byte (Ignore)
x	Do Not Care Bit (Ignore)

Section	Settings	Data Types	Byte Order	Total Reg	Starting Reg	Ending Reg	Reference
1 (Header)	Device Type	UINT16	(X:Device Type)	1	0	0	Table 1.0
	Protocol Version	UINT16	(X:Protocol Version)	1	1	1	Table 1.1
	Main Microcontroller Firmware Version	UINT16		1	2	2	Table 1.2
	Graphic Microcontroller Firmware Version	UINT16		1	3	3	Table 1.3
	Bottom Microcontroller Firmware Version	UINT16		1	4	4	Table 1.4
	Expansion Board 1 Firmware Version	UINT16		1	5	5	Table 1.5
	Expansion Board 2 Firmware Version	UINT16		1	6	6	Table 1.6
	Reserved Registers	UINT16		3	7	9	Reserved
2 (System Status)	State	UINT16	(X:State)	1	10	10	Table 2.0
	Sub State	UINT16	(X:SubState)	1	11	11	Table 2.1
	Spare (Reserved)	UINT16		1	12	12	Table 2.2
	Interlock & Relays	UINT16	(X:xxxx:Stop Rel:Alarm Rel: Interlock)	1	13	13	Table 2.3
	Time/Date: Year	UINT16		1	14	14	Table 2.4
	Time/Date: Month	UINT16		1	15	15	Table 2.5
	Time/Date: Day	UINT16		1	16	16	Table 2.6
	Time/Date: Hour	UINT16		1	17	17	Table 2.7
	Time/Date: Minute	UINT16		1	18	18	Table 2.8
	Time/Date: Seconds	UINT16		1	19	19	Table 2.9
	Machine Start Year	UINT16		1	20	20	Table 2.10
	Machine Start Month	UINT16		1	21	21	Table 2.11
	Machine Start Day	UINT16		1	22	22	Table 2.12
	Machine Start Hour	UINT16		1	23	23	Table 2.13
	Machine Start Minute	UINT16		1	24	24	Table 2.14
	Machine Start Seconds	UINT16		1	25	25	Table 2.15
	Machine Run Time Minutes	UINT32	(X:M3:M2:M1)	2	26	27	Table 2.16
	Selected Profile	UINT16		1	28	28	Table 2.17
	Pre-Notification Enabled/Disabled Flag	UINT16	(X:Pre-Notification Flag)	1	29	29	Table 2.18
Temperature Unit	UINT16	(X:xxxxxx:System Temperature Unit)	1	30	30	Table 2.19	

3 (System Alarm)	Alarm Source	UINT16		1	0	1	Table 3.0	
	Alarm Condition	UINT16		1	1	2	Table 3.1	
	Current Time To Shutdown	UINT16		1	2	3	Table 3.2	
	Total Number of Alarms	UINT16		1	3	4	Table 3.3	
	Current Alarm number	UINT16		1	4	5	Table 3.4	
	Reserved Registers	UINT16		4	5	9	Reserved	
4 (System Shutdown)	Shutdown Cause	UINT16		1	9	10	Table 4.0	
	Shutdown Condition	UINT16		1	10	11	Table 4.1	
	Reserved Registers	UINT16		6	11	17	Reserved	
5 (Speed)	Speed Monitoring Source	UINT16		1	17	18	Table 5.0	
	Speed Status	UINT16		1	18	19	Table 5.1	
	Calibrated Speed Value	UINT16		1	19	20	Table 5.2	
	Running Speed in PPM	UINT16		1	20	21	Table 5.3	
	% of calibrated speed	UINT16		1	21	22	Table 5.4	
	Scaling Factor * 100	UINT16		1	22	23	Table 5.5	
	Scaled Speed	UINT16		1	23	24	Table 5.6	
	Under-Speed % Alarm	UINT16		1	24	25	Table 5.7	
	Severe Under-Speed % Alarm	UINT16		1	25	26	Table 5.8	
	Over-Speed % Alarm	UINT16		1	26	27	Table 5.9	
	Severe Over-Speed % Alarm	UINT16		1	27	28	Table 5.10	
	Speed 2 (Differential)	UINT16		1	67	67	Table 5.11	
	Reserved Registers	UINT16		9	68	76	Reserved	
	6 (Alignment)	Head Monitoring Type	UINT16		1	77	77	Table 6.0
		Head Status (Left OR Right)	UINT16	(X:xx:R1:R0:L1:L0:P1:P0)	1	78	78	Table 6.1
Head Pair Value % difference		UINT16		1	79	79	Table 6.2	
Head Left Value		UINT16		1	80	80	Table 6.3	
Head Right Value		UINT16		1	81	81	Table 6.4	
Tail Monitoring Type		UINT16		1	82	82	Table 6.5	
Tail Status (Left OR Right)		UINT16	(X:xx:R1:R0:L1:L0:P1:P0)	1	83	83	Table 6.6	
Tail Pair Value % difference		UINT16		1	84	84	Table 6.7	
Tail Left Value		UINT16		1	85	85	Table 6.8	
Tail Right Value		UINT16		1	86	86	Table 6.9	
Reserved Registers		UINT16		5	87	91	Reserved	
7 (Rub Block)	Head Left Rub Block Status	INT16		1	92	92	Table 7.0	
	Head Left Rub Block Absolute Alarm Temperature	INT16		1	93	93	Table 7.1	
	Head Left Rub Block Temperature	INT16		1	94	94	Table 7.2	
	Head Right Rub Block Status	INT16		1	95	95	Table 7.3	
	Head Right Rub Block Absolute Alarm Temperature	INT16		1	96	96	Table 7.4	
	Head Right Rub Block Temperature	INT16		1	97	97	Table 7.5	
	Tail Left Rub Block Status	INT16		1	98	98	Table 7.6	
	Tail Left Rub Block Absolute Alarm Temperature	INT16		1	99	99	Table 7.7	
	Tail Left Rub Block Temperature	INT16		1	100	100	Table 7.8	
	Tail Right Rub Block Status	INT16		1	101	101	Table 7.9	
	Tail Right Rub Block Absolute Alarm Temperature	INT16		1	102	102	Table 7.10	
	Tail Right Rub Block Temperature	INT16		1	103	103	Table 7.11	

8 (Temperature)	HBS 1 Status	INT16		1	110	110	Table 8.0
	HBS 1 Absolute Alarm Value	INT16		1	111	111	Table 8.1
	HBS 1 Value	INT16		1	112	112	Table 8.2
	HBS 2 Status	INT16		1	113	113	Table 8.3
	HBS 2 Absolute Alarm Value	INT16		1	114	114	Table 8.4
	HBS 2 Value	INT16		1	115	115	Table 8.5
	HBS 3 Status	INT16		1	116	116	Table 8.6
	HBS 3 Absolute Alarm Value	INT16		1	117	117	Table 8.7
	HBS 3 Value	INT16		1	118	118	Table 8.8
	HBS 4 Status	INT16		1	119	119	Table 8.9
	HBS 4 Absolute Alarm Value	INT16		1	120	120	Table 8.10
	HBS 4 Value	INT16		1	121	121	Table 8.11
	HBS 5 Status	INT16		1	122	122	Table 8.12
	HBS 5 Absolute Alarm Value	INT16		1	123	123	Table 8.13
	HBS 5 Value	INT16		1	124	124	Table 8.14
	HBS 6 Status	INT16		1	125	125	Table 8.15
	HBS 6 Absolute Alarm Value	INT16		1	126	126	Table 8.16
	HBS 6 Value	INT16		1	127	127	Table 8.17
	AMB 1 Status	INT16		1	128	128	Table 8.18
	AMB 1 Absolute Alarm Value	INT16		1	129	129	Table 8.19
	AMB 1 Value	INT16		1	130	130	Table 8.20
	AMB 2 Status	INT16		1	131	131	Table 8.21
	AMB 2 Absolute Alarm Value	INT16		1	132	132	Table 8.22
	AMB 2 Value	INT16		1	133	133	Table 8.23
	Reserved Registers	UINT16		17	134	150	Reserved
9 (Auxiliary)	Plug Monitoring	UINT16	(X:xxxx:Alarm:Input:Alarm Condition:Enabled/Disable)	1	151	151	Table 9.0
	Pulley Monitoring	UINT16	(X:xxxx:Alarm:Input:Alarm Condition:Enabled/Disable)	1	152	152	Table 9.1
	Reserved Registers	UINT16		5	153	157	Reserved
10 (Test Mode)	Test State (ALIGN, HBS, US, OS, ALR)	UINT16	(X:xxx:ALIGN:HBS:US:OS:ALR)	1	158	158	Table 10.0
	Reserved Registers	UINT16		5	159	163	Reserved
11 (Ethernet)	DHCP Status	UINT16	(X:DHCP Status)	1	164	164	Table 11.0
	IP Address	UINT32	(OCTETS 4:3:2:1)	2	165	166	Table 11.1 a,b
	Subnet Mask	UINT32	(OCTETS 4:3:2:1)	2	167	168	Table 11.2 a,b
	Gateway	UINT32	(OCTETS 4:3:2:1)	2	169	170	Table 11.3 a,b
	DNS Server 1	UINT32	(OCTETS 4:3:2:1)	2	171	172	Table 11.4 a,b
	DNS Server 2	UINT32	(OCTETS 4:3:2:1)	2	173	174	Table 11.5 a,b
	MAC Address	UINT64	(OCTETS 6:5:4:3:2:1)	3	175	177	Table 11.6 a,b,c
	UDF ID	UINT32	(OCTETS 4:3:2:1)	2	178	179	Table 11.7 a,b
	Hazard Mon Status	UINT16		1	180	180	Table 11.8
	Reserved Registers	UINT16		11	181	191	Reserved
12 (SD card)	SD Card Status	UINT16	(CARD_PRESENT:ERROR)	1	192	192	Table 12.0
	Reserved Registers	UINT16		13	193	205	Reserved
13 (Add-On Cards)	Expansion 1 Connected Status	UINT16		1	206	206	Table 13.0
	Expansion 1 Expansion Type	UINT16		1	207	207	Table 13.1
	Expansion 1 Data	UINT16	See Following Sheets for Detailed Breakdown	100	208	307	See Following Sheets
	Expansion 2 Connected Status	UINT16		1	308	308	Table 13.2
	Expansion 2 Expansion Type	UINT16		1	309	309	Table 13.3
	Expansion 2 Data	UINT16	See Following Sheets for Detailed Breakdown	100	310	409	See Following Sheets
	Reserved Registers	UINT16		90	410	499	Reserved

Expansion 1 SSR Data	Data Type	Byte Order	Number of Regs	Start Reg	End Reg	Reference
Relay Speed Flag	UINT16		1	208	208	Table 14.0
Relay Alignment Flag	UINT16		1	209	209	Table 14.1
Relay Temperature Flag	UINT16		1	210	210	Table 14.2
Relay Plug/Pulley Flag	UINT16		1	211	211	Table 14.3
Reserved	UINT16		96	212	307	

Expansion 2 SSR Data	Data Type	Byte Order	Number of Regs	Start Reg	End Reg	Reference
Relay Speed Flag	UINT16		1	310	310	Table 14.0
Relay Alignment Flag	UINT16		1	311	311	Table 14.1
Relay Temperature Flag	UINT16		1	312	312	Table 14.2
Relay Plug/Pulley Flag	UINT16		1	313	313	Table 14.3
Reserved	UINT16		96	314	409	

Expansion 1 NTC Data	Data Type	Byte Order	Number of Regs	Start Reg	End Reg	Reference
HBS 7 Status	INT16		1	208	208	Table 15.0
HBS 7 Absolute Alarm Value	INT16		1	209	209	Table 15.1
HBS 7 Value	INT16		1	210	210	Table 15.2
HBS 8 Status	INT16		1	211	211	Table 15.3
HBS 8 Absolute Alarm Value	INT16		1	212	212	Table 15.4
HBS 8 Value	INT16		1	213	213	Table 15.5
HBS 9 Status	INT16		1	214	214	Table 15.6
HBS 9 Absolute Alarm Value	INT16		1	215	215	Table 15.7
HBS 9 Value	INT16		1	216	216	Table 15.8
HBS 10 Status	INT16		1	217	217	Table 15.9
HBS 10 Absolute Alarm Value	INT16		1	218	218	Table 15.10
HBS 10 Value	INT16		1	219	219	Table 15.11
HBS 11 Status	INT16		1	220	220	Table 15.12
HBS 11 Absolute Alarm Value	INT16		1	221	221	Table 15.13
HBS 11 Value	INT16		1	222	222	Table 15.14
HBS 12 Status	INT16		1	223	223	Table 15.15
HBS 12 Absolute Alarm Value	INT16		1	224	224	Table 15.16
HBS 12 Value	INT16		1	225	225	Table 15.17
Reserved	UINT16		82	226	307	

Expansion 2 NTC Data	Data Type	Byte Order	Number of Regs	Start Reg	End Reg	Reference
HBS 13 Status	INT16		1	310	310	Table 15.18
HBS 13 Absolute Alarm Value	INT16		1	311	311	Table 15.19
HBS 13 Value	INT16		1	312	312	Table 15.20
HBS 14 Status	INT16		1	313	313	Table 15.21
HBS 14 Absolute Alarm Value	INT16		1	314	314	Table 15.22
HBS 14 Value	INT16		1	315	315	Table 15.23
HBS 15 Status	INT16		1	316	316	Table 15.24
HBS 15 Absolute Alarm Value	INT16		1	317	317	Table 15.25
HBS 15 Value	INT16		1	318	318	Table 15.26
HBS 16 Status	INT16		1	319	319	Table 15.27
HBS 16 Absolute Alarm Value	INT16		1	320	320	Table 15.28
HBS 16 Value	INT16		1	321	321	Table 15.29
HBS 17 Status	INT16		1	322	322	Table 15.30
HBS 17 Absolute Alarm Value	INT16		1	323	323	Table 15.31
HBS 17 Value	INT16		1	324	324	Table 15.32
HBS 18 Status	INT16		1	325	325	Table 15.33
HBS 18 Absolute Alarm Value	INT16		1	326	326	Table 15.34
HBS 18 Value	INT16		1	327	327	Table 15.35
Reserved	UINT16		82	328	409	

Expansion 1 6AN or 2AN Data	Data Type	Byte Order	Number of Regs	Start Reg	End Reg	Reference
CLI1 Status	INT16		1	208	208	Table 16.0a
CLI1 Alarm Enable Flags	UINT16	(X:xxxx:ABS H:Pre-ABS H:Pre-ABS L:ABS L)	1	209	209	Table 16.0b
CLI1 Absolute High Alarm	INT16		1	210	210	Table 16.0c
CLI1 Pre-Absolute High Alarm	INT16		1	211	211	Table 16.0d
CLI1 Pre-Absolute Low Alarm	INT16		1	212	212	Table 16.0e
CLI1 Absolute Low Alarm	INT16		1	213	213	Table 16.0f
CLI1 Scaled Value	INT16		1	214	214	Table 16.0g
CLI1 Unit Characters	UINT16	(X:Char 1:X:Char 2:X:Char 3)	3	215	217	Table 16.0h
CLI1 Max Scaled Value	INT16		1	218	218	Table 16.0i
CLI1 Min Scaled Value	INT16		1	219	219	Table 16.0j
CLI1 Raw Value	UINT16		1	220	220	Table 16.0k
CLI1 Max Raw Value	UINT16		1	221	221	Table 16.0l
CLI1 Min Raw Value	UINT16		1	222	222	Table 16.0m
CLI2 Status	INT16		1	223	223	Table 16.1a
CLI2 Alarm Enable Flags	UINT16	(X:xxxx:ABS H:Pre-ABS H:Pre-ABS L:ABS L)	1	224	224	Table 16.1b
CLI2 Absolute High Alarm	INT16		1	225	225	Table 16.1c
CLI2 Pre-Absolute High Alarm	INT16		1	226	226	Table 16.1d
CLI2 Pre-Absolute Low Alarm	INT16		1	227	227	Table 16.1e
CLI2 Absolute Low Alarm	INT16		1	228	228	Table 16.1f
CLI2 Scaled Value	INT16		1	229	229	Table 16.1g
CLI2 Unit Characters	UINT16	(X:Char 1:X:Char 2:X:Char 3)	3	230	232	Table 16.1h
CLI2 Max Scaled Value	INT16		1	233	233	Table 16.1i
CLI2 Min Scaled Value	INT16		1	234	234	Table 16.1j
CLI2 Raw Value	UINT16		1	235	235	Table 16.1k
CLI2 Max Raw Value	UINT16		1	236	236	Table 16.1l
CLI2 Min Raw Value	UINT16		1	237	237	Table 16.1m
CLI3 Status	INT16		1	238	238	Table 16.2a
CLI3 Alarm Enable Flags	UINT16	(X:xxxx:ABS H:Pre-ABS H:Pre-ABS L:ABS L)	1	239	239	Table 16.2b
CLI3 Absolute High Alarm	INT16		1	240	240	Table 16.2c
CLI3 Pre-Absolute High Alarm	INT16		1	241	241	Table 16.2d

CLI3 Pre-Absolute Low Alarm	INT16		1	242	242	Table 16.2e
CLI3 Absolute Low Alarm	INT16		1	243	243	Table 16.2f
CLI3 Scaled Value	INT16		1	244	244	Table 16.2g
CLI3 Unit Characters	UINT16	(X:Char 1:X:Char 2:X:Char 3)	3	245	247	Table 16.2h
CLI3 Max Scaled Value	INT16		1	248	248	Table 16.2i
CLI3 Min Scaled Value	INT16		1	249	249	Table 16.2j
CLI3 Raw Value	UINT16		1	250	250	Table 16.2k
CLI3 Max Raw Value	UINT16		1	251	251	Table 16.2l
CLI3 Min Raw Value	UINT16		1	252	252	Table 16.2m
CLI4 Status	INT16		1	253	253	Table 16.3a
CLI4 Alarm Enable Flags	UINT16	(X:xxxx:ABS H:Pre-ABS H:Pre-ABS L:ABS L)	1	254	254	Table 16.3b
CLI4 Absolute High Alarm	INT16		1	255	255	Table 16.3c
CLI4 Pre-Absolute High Alarm	INT16		1	256	256	Table 16.3d
CLI4 Pre-Absolute Low Alarm	INT16		1	257	257	Table 16.3e
CLI4 Absolute Low Alarm	INT16		1	258	258	Table 16.3f
CLI4 Scaled Value	INT16		1	259	259	Table 16.3g
CLI4 Unit Characters	UINT16	(X:Char 1:X:Char 2:X:Char 3)	3	260	262	Table 16.3h
CLI4 Max Scaled Value	INT16		1	263	263	Table 16.3i
CLI4 Min Scaled Value	INT16		1	264	264	Table 16.3j
CLI4 Raw Value	UINT16		1	265	265	Table 16.3k
CLI4 Max Raw Value	UINT16		1	266	266	Table 16.3l
CLI4 Min Raw Value	UINT16		1	267	267	Table 16.3m
VIN1 Status	INT16		1	268	268	Table 16.4a
VIN1 Alarm Enable Flags	UINT16	(X:xxxx:ABS H:Pre-ABS H:Pre-ABS L:ABS L)	1	269	269	Table 16.4b
VIN1 Absolute High Alarm	INT16		1	270	270	Table 16.4c
VIN1 Pre-Absolute High Alarm	INT16		1	271	271	Table 16.4d
VIN1 Pre-Absolute Low Alarm	INT16		1	272	272	Table 16.4e
VIN1 Absolute Low Alarm	INT16		1	273	273	Table 16.4f
VIN1 Scaled Value	INT16		1	274	274	Table 16.4g
VIN1 Unit Characters	UINT16	(X:Char 1:X:Char 2:X:Char 3)	3	275	277	Table 16.4h
VIN1 Max Scaled Value	INT16		1	278	278	Table 16.4i
VIN1 Min Scaled Value	INT16		1	279	279	Table 16.4j

VIN1 Raw Value	UINT16		1	280	280	Table 16.4k
VIN1 Max Raw Value	UINT16		1	281	281	Table 16.4l
VIN1 Min Raw Value	UINT16		1	282	282	Table 16.4m
VIN2 Status	INT16		1	283	283	Table 16.5a
VIN2 Alarm Enable Flags	UINT16	(X:xxxx:ABS H:Pre-ABS H:Pre-ABS L:ABS L)	1	284	284	Table 16.5b
VIN2 Absolute High Alarm	INT16		1	285	285	Table 16.5c
VIN2 Pre-Absolute High Alarm	INT16		1	286	286	Table 16.5d
VIN2 Pre-Absolute Low Alarm	INT16		1	287	287	Table 16.5e
VIN2 Absolute Low Alarm	INT16		1	288	288	Table 16.5f
VIN2 Scaled Value	INT16		1	289	289	Table 16.5g
VIN2 Unit Characters	UINT16	(X:Char 1:X:Char 2:X:Char 3)	3	290	292	Table 16.5h
VIN2 Max Scaled Value	INT16		1	293	293	Table 16.5i
VIN2 Min Scaled Value	INT16		1	294	294	Table 16.5j
VIN2 Raw Value	UINT16		1	295	295	Table 16.5k
VIN2 Max Raw Value	UINT16		1	296	296	Table 16.5l
VIN2 Min Raw Value	UINT16		1	297	297	Table 16.5m
Reserved	UINT16		10	298	307	

Expansion 2 6AN or 2AN Data	Data Type	Byte Order	Number of Regs	Start Reg	End Reg	Reference
CLI5 Status	INT16		1	310	310	Table 16.6a
CLI5 Alarm Enable Flags	UINT16	(X:xxxx:ABS H:Pre-ABS H:Pre-ABS L:ABS L)	1	311	311	Table 16.6b
CLI5 Absolute High Alarm	INT16		1	312	312	Table 16.6c
CLI5 Pre-Absolute High Alarm	INT16		1	313	313	Table 16.6d
CLI5 Pre-Absolute Low Alarm	INT16		1	314	314	Table 16.6e
CLI5 Absolute Low Alarm	INT16		1	315	315	Table 16.6f
CLI5 Scaled Value	INT16		1	316	316	Table 16.6g
CLI5 Unit Characters	UINT16	(X:Char 1:X:Char 2:X:Char 3)	3	317	319	Table 16.6h
CLI5 Max Scaled Value	INT16		1	320	320	Table 16.6i
CLI5 Min Scaled Value	INT16		1	321	321	Table 16.6j
CLI5 Raw Value	UINT16		1	322	322	Table 16.6k
CLI5 Max Raw Value	UINT16		1	323	323	Table 16.6l
CLI5 Min Raw Value	UINT16		1	324	324	Table

						16.6m
CLI6 Status	INT16		1	325	325	Table 16.7a
CLI6 Alarm Enable Flags	UINT16	(X:xxxx:ABS H:Pre-ABS H:Pre-ABS L:ABS L)	1	326	326	Table 16.7b
CLI6 Absolute High Alarm	INT16		1	327	327	Table 16.7c
CLI6 Pre-Absolute High Alarm	INT16		1	328	328	Table 16.7d
CLI6 Pre-Absolute Low Alarm	INT16		1	329	329	Table 16.7e
CLI6 Absolute Low Alarm	INT16		1	330	330	Table 16.7f
CLI6 Scaled Value	INT16		1	331	331	Table 16.7g
CLI6 Unit Characters	UINT16	(X:Char 1:X:Char 2:X:Char 3)	3	332	334	Table 16.7h
CLI6 Max Scaled Value	INT16		1	335	335	Table 16.7i
CLI6 Min Scaled Value	INT16		1	336	336	Table 16.7j
CLI6 Raw Value	UINT16		1	337	337	Table 16.7k
CLI6 Max Raw Value	UINT16		1	338	338	Table 16.7l
CLI6 Min Raw Value	UINT16		1	339	339	Table 16.7m
CLI7 Status	INT16		1	340	340	Table 16.8a
CLI7 Alarm Enable Flags	UINT16	(X:xxxx:ABS H:Pre-ABS H:Pre-ABS L:ABS L)	1	341	341	Table 16.8b
CLI7 Absolute High Alarm	INT16		1	342	342	Table 16.8c
CLI7 Pre-Absolute High Alarm	INT16		1	343	343	Table 16.8d
CLI7 Pre-Absolute Low Alarm	INT16		1	344	344	Table 16.8e
CLI7 Absolute Low Alarm	INT16		1	345	345	Table 16.8f
CLI7 Scaled Value	INT16		1	346	346	Table 16.8g
CLI7 Unit Characters	UINT16	(X:Char 1:X:Char 2:X:Char 3)	3	347	349	Table 16.8h
CLI7 Max Scaled Value	INT16		1	350	350	Table 16.8i
CLI7 Min Scaled Value	INT16		1	351	351	Table 16.8j
CLI7 Raw Value	UINT16		1	352	352	Table 16.8k
CLI7 Max Raw Value	UINT16		1	353	353	Table 16.8l
CLI7 Min Raw Value	UINT16		1	354	354	Table 16.8m
CLI8 Status	INT16		1	355	355	Table 16.9a
CLI8 Alarm Enable Flags	UINT16	(X:xxxx:ABS H:Pre-ABS H:Pre-ABS L:ABS L)	1	356	356	Table 16.9b
CLI8 Absolute High Alarm	INT16		1	357	357	Table 16.9c
CLI8 Pre-Absolute High Alarm	INT16		1	358	358	Table 16.9d

CLI8 Pre-Absolute Low Alarm	INT16		1	359	359	Table 16.9e
CLI8 Absolute Low Alarm	INT16		1	360	360	Table 16.9f
CLI8 Scaled Value	INT16		1	361	361	Table 16.9g
CLI8 Unit Characters	UINT16	(X:Char 1:X:Char 2:X:Char 3)	3	362	364	Table 16.9h
CLI8 Max Scaled Value	INT16		1	365	365	Table 16.9i
CLI8 Min Scaled Value	INT16		1	366	366	Table 16.9j
CLI8 Raw Value	UINT16		1	367	367	Table 16.9k
CLI8 Max Raw Value	UINT16		1	368	368	Table 16.9l
CLI8 Min Raw Value	UINT16		1	369	369	Table 16.9m
VIN3 Status	INT16		1	370	370	Table 16.10a
VIN3 Alarm Enable Flags	UINT16	(X:xxxx:ABS H:Pre-ABS H:Pre-ABS L:ABS L)	1	371	371	Table 16.10b
VIN3 Absolute High Alarm	INT16		1	372	372	Table 16.10c
VIN3 Pre-Absolute High Alarm	INT16		1	373	373	Table 16.10d
VIN3 Pre-Absolute Low Alarm	INT16		1	374	374	Table 16.10e
VIN3 Absolute Low Alarm	INT16		1	375	375	Table 16.10f
VIN3 Scaled Value	INT16		1	376	376	Table 16.10g
VIN3 Unit Characters	UINT16	(X:Char 1:X:Char 2:X:Char 3)	3	377	379	Table 16.10h
VIN3 Max Scaled Value	INT16		1	380	380	Table 16.10i
VIN3 Min Scaled Value	INT16		1	381	381	Table 16.10j
VIN3 Raw Value	UINT16		1	382	382	Table 16.10k
VIN3 Max Raw Value	UINT16		1	383	383	Table 16.10l
VIN3 Min Raw Value	UINT16		1	384	384	Table 16.10m
VIN4 Status	INT16		1	385	385	Table 16.11a
VIN4 Alarm Enable Flags	UINT16	(X:xxxx:ABS H:Pre-ABS H:Pre-ABS L:ABS L)	1	386	386	Table

		L)				16.11b
VIN4 Absolute High Alarm	INT16		1	387	387	Table 16.11c
VIN4 Pre-Absolute High Alarm	INT16		1	388	388	Table 16.11d
VIN4 Pre-Absolute Low Alarm	INT16		1	389	389	Table 16.11e
VIN4 Absolute Low Alarm	INT16		1	390	390	Table 16.11f
VIN4 Scaled Value	INT16		1	391	391	Table 16.11g
VIN4 Unit Characters	UINT16	(X:Char 1:X:Char 2:X:Char 3)	3	392	394	Table 16.11h
VIN4 Max Scaled Value	INT16		1	395	395	Table 16.11i
VIN4 Min Scaled Value	INT16		1	396	396	Table 16.11j
VIN4 Raw Value	UINT16		1	397	397	Table 16.11k
VIN4 Max Raw Value	UINT16		1	398	398	Table 16.11l
VIN4 Min Raw Value	UINT16		1	399	399	Table 16.11m
Reserved	UINT16		10	400	409	

Expansion 1 PT100 Data	Data Type	Byte Order	Number of Regs	Start Reg	End Reg	Reference
Pt100 1 Status	INT16		1	208	208	Table 17.0
Pt100 1 Absolute Alarm Value	INT16		1	209	209	Table 17.1
Pt100 1 Value	INT16		1	210	210	Table 17.2
Pt100 2 Status	INT16		1	211	211	Table 17.3
Pt100 2 Absolute Alarm Value	INT16		1	212	212	Table 17.4
Pt100 2 Value	INT16		1	213	213	Table 17.5
Pt100 3 Status	INT16		1	214	214	Table 17.6
Pt100 3 Absolute Alarm Value	INT16		1	215	215	Table 17.7
Pt100 3 Value	INT16		1	216	216	Table 17.8
Pt100 4 Status	INT16		1	217	217	Table 17.9
Pt100 4 Absolute Alarm Value	INT16		1	218	218	Table 17.10
Pt100 4 Value	INT16		1	219	219	Table 17.11
Reserved	UINT16		88	220	307	

Expansion 2 PT100 Data	Data Type	Byte Order	Number of Regs	Start Reg	End Reg	Reference
Pt100 5 Status	INT16		1	310	310	Table 17.12
Pt100 5 Absolute Alarm Value	INT16		1	311	311	Table 17.13
Pt100 5 Value	INT16		1	312	312	Table 17.14
Pt100 6 Status	INT16		1	313	313	Table 17.15
Pt100 6 Absolute Alarm Value	INT16		1	314	314	Table 17.16
Pt100 6 Value	INT16		1	315	315	Table 17.17
Pt100 7 Status	INT16		1	316	316	Table 17.18
Pt100 7 Absolute Alarm Value	INT16		1	317	317	Table 17.19
Pt100 7 Value	INT16		1	318	318	Table 17.20
Pt100 8 Status	INT16		1	319	319	Table 17.21
Pt100 8 Absolute Alarm Value	INT16		1	320	320	Table 17.22
Pt100 8 Value	INT16		1	321	321	Table 17.23
Reserved	UINT16		88	322	409	

Section (Header)

Table 1.0

Byte Order: (X:Device Type)

Base Register Address	Modbus Register	Setting
30000	0	Device Type

Device Type	Value
WDC4	1

Table 1.1

Byte Order: (X:Protocol Version)

Base Register Address	Modbus Register	Setting
30000	1	Protocol Version

Protocol Version	Value	Associated Version
WDC4	1	Upto v4.7.7
WDC4	2	V4.7.8
WDC4	3	V4.7.9 to V4.7.11
WDC4	4	V4.8.0 onwards

Note: This document is specific to protocol 4. Contact 4B for documentation regarding earlier protocols.

Table 1.2

Base Register Address	Modbus Register	Setting
30000	2	Main Microcontroller Firmware version. Example value 40805 decodes as 4.8.5

Note: Prior to V4.7.10 both major and minor software values were 1 decimal place in length. In order to differentiate these numbers from the older versions, check if the value is greater than 10000. Older versions will have values less than 1000.

A new number would be 40710 for example, which would translate to 4.7.10. An old number would be 479, which would translate to 4.7.9

Table 1.3

Base Register Address	Modbus Register	Setting
30000	3	Graphics Microcontroller Firmware Version. Example 40805 Decodes as 4.8.5

Note: See Table 1.2

Table 1.4

Base Register Address	Modbus Register	Setting
30000	4	Bottom Microcontroller Firmware Version. Example 439 Decodes as 4.3.9

Note: See Table 1.2

Table 1.5

Base Register Address	Modbus Register	Setting
30000	5	Expansion Board 1 Firmware Version. Example 10 Decodes as 0.1.0

Note: See Table 1.2

Table 1.6

Base Register Address	Modbus Register	Setting
30000	6	Expansion Board 2 Firmware Version. Example 110 Decodes as 1.1.0

Note: See Table 1.2

Section (System Status)

Table 2.0

Byte Order: (X:State)

Base Register Address	Modbus Register	Setting
30000	10	State

State	Value
INVALID	0
INITIALISING	1
STOPPED	2
STARTING	3
RUNNING	4
TEST_HBS	5
TEST_US	6
TEST_OS	7
TEST_ALIGN	8
TEST_ALM_RLY	9
STOPPING	10
NOT_CALIBRATED	11
CALIBRATION_WAIT	12
CALIBRATION_DELAY	13
CALIBRATING	14

Table 2.1

Byte Order: (X:SubState)

Base Register Address	Modbus Register	Setting
30000	11	Sub State

State	Value
NO_ALARMS	0
ALARM	1
SEE_MANUAL	2
START_ELEVATOR	3
STARTUP_TIMEOUT	4
CALIBRATION_IN_PROGRESS	5
CALIBRATION_ERROR	6
JOG_DELAY	7
INTERLOCK_OFF	8
COMMUNICATION_ERROR	9

INTERLOCK_ON	10
--------------	----

Table 2.2

Base Register Address	Modbus Register	Setting
30000	12	Spare (Reserved)

Table 2.3

Byte Order: (X:xxxxx:Stop Rel:Alarm Rel: Interlock)

Base Register Address	Modbus Register	Setting
30000	13	Interlock & Relays

Flags	Bit position	Bit position meaning
Interlock	0	1 = ON; 0 = OFF
Alarm Relay	1	1 = Alarm; 0 = No Alarm
Stop Relay	2	1 = Running; 0 = Stopped

Table 2.4

Base Register Address	Modbus Register	Setting
30000	14	Time/Date: Year

Register format	Function
16 bit UINT	Year

Table 2.5

Base Register Address	Modbus Register	Setting
30000	15	Time/Date: Month

Register type	Function
16 bit UINT	Month

Table 2.6

Base Register Address	Modbus Register	Setting
30000	16	Time/Date: Day

Register type	Function
16 bit UINT	Day

Table 2.7

Base Register Address	Modbus Register	Setting
30000	17	Time/Date: Hour

Register type	Function
16 bit UINT	Hour

Table 2.8

Base Register Address	Modbus Register	Setting
30000	18	Time/Date: Minutes

Register type	Function
16 bit UINT	Minutes

Table 2.9

Base Register Address	Modbus Register	Setting
30000	19	Time/Date: Seconds

Register type	Function
16 bit UINT	Seconds

Table 2.10

Base Register Address	Modbus Register	Setting
30000	20	Machine Start Year*

Register type	Function
16 bit UINT	Year

Table 2.11

Base Register Address	Modbus Register	Setting
30000	21	Machine Start Month*

Register type	Function
16 bit UINT	Month

Table 2.12

Base Register Address	Modbus Register	Setting
30000	22	Machine Start Day*

Register type	Function
16 bit UINT	Day

Table 2.13

Base Register Address	Modbus Register	Setting
30000	23	Machine Start Hour*

Register type	Function
16 bit UINT	Hour

Table 2.14

Base Register Address	Modbus Register	Setting
30000	24	Machine Start Minutes*

Register type	Function
16 bit UINT	Minutes

Table 2.15

Base Register Address	Modbus Register	Setting
30000	25	Machine Start Seconds*

Register type	Function
16 bit UINT	Seconds

***When first powered up the machine start time will be a default value until the system is started**

Table 2.16

Byte Order: (X:M3:M2:M1)

Base Register Address	Modbus Register	Setting
30000	26-27	Machine Runtime Minutes

Table 2.17

Base Register Address	Modbus Register	Setting
30000	28	Selected Profile

Modbus Register 28 is reserved for future expansion of the profiles.

Table 2.18

Byte Order: (X:Pre-Notification Flag)

Base Register Address	Modbus Register	Setting
30000	29	Pre-Notification Enabled/Disabled Flag

Value	Function
0	OFF
1	ON

Table 2.19

Byte Order: (X:xxxxxxx: System Temperature Unit)

Base Register Address	Modbus Register	Setting
30000	30	Temperature Unit

Flags	Bit position	Bit position meaning
Temperature Unit	0	1 = °F; 0 = °C

Section (System Alarm)

Table 3.0

Base Register Address	Modbus Register	Setting
30000	39	Alarm Source

Value	State
0	NO ALARM
1	SPEED
2	ALIGNMENT HEAD
3	ALIGNMENT TAIL
4	HBS1
5	HBS2
6	HBS3
7	HBS4
8	HBS5
9	HBS6
10	AMBIENT 1
11	AMBIENT 2
12	UNUSED (RUB)
13	UNUSED (RUB)
14	UNUSED (RUB)
15	UNUSED (RUB)
16	HBS7 (EXP1)
17	HBS8 (EXP1)
18	HBS9 (EXP1)
19	HBS10 (EXP1)
20	HBS11 (EXP1)
21	HBS12 (EXP1)
22	HBS13 (EXP2)
23	HBS14 (EXP2)
24	HBS15 (EXP2)
25	HBS16 (EXP2)
26	HBS17 (EXP2)
27	HBS18 (EXP2)
28	PLUG
29	PULLEY
30	RUB TAIL LEFT
31	RUB TAIL RIGHT
32	RUB HEAD LEFT

Value	State
33	RUB HEAD RIGHT
34	PT100 1 (EXP1)
35	PT100 2 (EXP1)
36	PT100 3 (EXP1)
37	PT100 4 (EXP1)
38	PT100 5 (EXP2)
39	PT100 6 (EXP2)
40	PT100 7 (EXP2)
41	PT100 8 (EXP2)
42	CLI1 (EXP1)
43	CLI2 (EXP1)
44	CLI3 (EXP1)
45	CLI4 (EXP1)
46	VIN1 (EXP1)
47	VIN2 (EXP1)
48	CLI5 (EXP2)
49	CLI6 (EXP2)
50	CLI7 (EXP2)
51	CLI8 (EXP2)
52	VIN3 (EXP2)
53	VIN4 (EXP2)
54	EXP1 COMMS
55	EXP2 COMMS
56	UNUSED (INTERNAL)
57	JOG
58	ACCELERATION
59	STARTUP

Table 3.1

Base Register Address	Modbus Register	Setting
30000	40	Alarm Condition

Alarm source if Modbus Register (39) = SPEED (1)	State
0	HEALTHY
1	SEVERE UNDER SPEED ALARM
2	UNDER SPEED ALARM
3	SEVERE OVER SPEED ALARM
4	OVER SPEED ALARM

Alarm source if Modbus Register (39) =TEMPERATURE (4-11 & 16-27 & 30-41)	State
0	HEALTHY
1	OPEN CIRCUIT ALARM
2	SHORT CIRCUIT ALARM
3	ABSOLUTE ALARM
4	RELATIVE ALARM
5	RATE OF RISE ALARM
6	COMMUNICATION ALARM
7	PRE ABSOLUTE ALARM

Alarm source if Modbus Register (39) =ANALOGUE (42-53)	State
0	HEALTHY
1	OPEN CIRCUIT ALARM
2	SHORT CIRCUIT ALARM
3	ABSOLUTE UPPER ALARM
4	ABSOLUTE LOWER ALARM
5	COMMUNICATION ALARM
7	PRE ABSOLUTE ALARM
8	RANGE FAILURE ALARM

Table 3.2

Base Register Address	Modbus Register	Setting
30000	41	Current Time to Shutdown (Seconds)

If this register reads 3600, then shutdown time is infinite (warning generated but will not shut down).

Table 3.3

Base Register Address	Modbus Register	Setting
30000	42	Total Number of Alarms

This register holds the value of Total Number of current Alarms detected by WDC4.

Table 3.4

Base Register Address	Modbus Register	Setting
30000	43	Current Alarm Number

This register simply scrolls from 0/1 to the value held by register 42. If WDC4 has detected 5 alarms, this register will change its value between 1 - 5.

Section (System Shutdown)

Table 4.0

Base Register Address	Modbus Register	Setting
30000	48	Shutdown Cause

See Table 3.0 for a breakdown of the shutdown causes.

Table 4.1

Base Register Address	Modbus Register	Setting
30000	49	Shutdown Condition

See Table 3.1 for a breakdown of the shutdown conditions.

Section (Speed)

Table 5.0

Base Register Address	Modbus Register	Setting
30000	56	Speed Monitoring Source

Enumeration	State
0	DISABLED
1	PULSED
2	DEDICATED
3	DIFFERENTIAL

Table 5.1

Base Register Address	Modbus Register	Setting
30000	57	Speed Status

Value	State
0	HEALTHY
1	SEVERE UNDER SPEED
2	UNDER SPEED
3	SEVERE OVER SPEED
4	OVER SPEED

Table 5.2

Base Register Address	Modbus Register	Setting
30000	58	Calibrated Speed Value

This will be in Pulses Per Minute with Single Speed and A percentage with differential.

Table 5.3

Base Register Address	Modbus Register	Setting
30000	59	Running Speed in PPM

Table 5.4

Base Register Address	Modbus Register	Setting
30000	60	% of Calibrated Speed

When speed source is set to differential this is the % ratio of the two speeds.

Table 5.5

Base Register Address	Modbus Register	Setting
30000	61	Scaling Factor * 100

Table 5.6

Base Register Address	Modbus Register	Setting
30000	62	Scaled Speed

Table 5.7

Base Register Address	Modbus Register	Setting
30000	63	% Underspeed before Alarm

Table 5.8

Base Register Address	Modbus Register	Setting
30000	64	% Severe Underspeed before Immediate Stop

Table 5.9

Base Register Address	Modbus Register	Setting
30000	65	% Overspeed before Alarm

Table 5.10

Base Register Address	Modbus Register	Setting
30000	66	% Severe Overspeed before Immediate Stop

Table 5.11

Base Register Address	Modbus Register	Setting
30000	67	Differential Speed 2 in PPM

Section (Alignment)

Table 6.0

Base Register Address	Modbus Register	Setting
30000	77	Head Monitoring Type

Value	State
0	OFF
1	PULSED
2	CONTACT
3	RUB BLOCK

Table 6.1

Byte Order: (X:xx:R1:R0:L1:L0:P1:P0)

Base Register Address	Modbus Register	Setting
30000	78	Head Status (Right/Left/Pair)

Variable	Bit Position	Value
Pair	0-1	0 = HEALTHY, 1 = ALARM, 2 = PRE-ALARM
Left	2-3	0 = HEALTHY, 1 = ALARM, 2 = PRE-ALARM
Right	4-5	0 = HEALTHY, 1 = ALARM, 2 = PRE-ALARM

The pair value will hold an alarm if either the left or right alignment sensors do.

Table 6.2

Base Register Address	Modbus Register	Setting
30000	79	Head Pair % Difference

The % difference between the left and right when alignment is set to pulsed.

Table 6.3

Base Register Address	Modbus Register	Setting
30000	80	Head Left Value

The PPM seen by the head left when alignment is pulsed. When alignment is Contact the value of this register is 0 when OFF and 1 when ON.

Note: this register may show MAS PPM inputs if the pair is set to RUB BLOCK alignment.

Table 6.4

Base Register Address	Modbus Register	Setting
30000	81	Head Right Value

The PPM seen by the head right when alignment is pulsed. When alignment is Contact the value of this register is 0 when OFF and 1 when ON.

Note: this register may show MAS PPM inputs if the pair is set to RUB BLOCK alignment.

Table 6.5

Base Register Address	Modbus Register	Setting
30000	82	Tail Monitoring Type

Value	State
0	OFF
1	PULSED
2	CONTACT
3	RUB BLOCK

Table 6.6

Byte Order: (X:xx:R1:R0:L1:L0:P1:P0)

Base Register Address	Modbus Register	Setting
30000	83	Tail Status (Right/Left/Pair)

Variable	Bit Position	Value
Pair	0-1	0 = HEALTHY, 1 = ALARM, 2 = PRE-ALARM
Left	2-3	0 = HEALTHY, 1 = ALARM, 2 = PRE-ALARM
Right	4-5	0 = HEALTHY, 1 = ALARM, 2 = PRE-ALARM

The pair value will hold an alarm if either the left or right alignment sensors do.

Table 6.7

Base Register Address	Modbus Register	Setting
30000	84	Tail Pair % Difference

The % difference between the Left and Right when alignment is set to pulse.

Table 6.8

Base Register Address	Modbus Register	Setting
30000	85	Tail Left Value

The PPM value seen by the Tail Left when alignment is pulsed. When alignment is Contact the value of this register is 0 when OFF and 1 when ON.

Note: this register may show MAS PPM inputs if the pair is set to RUB BLOCK alignment.

Table 6.9

Base Register Address	Modbus Register	Setting
30000	86	Tail Right Value

The PPM value seen by the Tail Right when alignment is pulsed. When alignment is Contact the value of this register is 0 when OFF and 1 when ON.

Note: this register may show MAS PPM inputs if the pair is set to RUB BLOCK alignment.

Section (Rub Block)

Table 7.0

Base Register Address	Modbus Register	Setting
30000	92	Head Left Rub Block Status

Value	Status
-20000	OFF
0	HEALTHY
1	OPEN CIRCUIT ALARM
2	SHORT CIRCUIT ALARM
3	ABSOLUTE ALARM
4	RELATIVE ALARM
5	RATE OF RISE ALARM
6	COMMUNICATION ALARM
7	PRE ABSOLUTE ALARM

Table 7.1

Base Register Address	Modbus Register	Setting
30000	93	Head Left Rub Block Absolute Alarm Temperature

Table 7.2

Base Register Address	Modbus Register	Setting
30000	94	Head Left Rub Block Temperature

Table 7.3

Base Register Address	Modbus Register	Setting
30000	95	Head Right Rub Block Status

Value	Status
Refer to Values/Status definitions for the setting in Table 7.0	

Table 7.4

Base Register Address	Modbus Register	Setting
30000	96	Head Right Rub Block Absolute Alarm Temperature

Table 7.5

Base Register Address	Modbus Register	Setting
30000	97	Head Right Rub Block Temperature

Table 7.6

Base Register Address	Modbus Register	Setting
30000	98	Tail Left Rub Block Status

Value	Status
Refer to Values/Status definitions for the setting in Table 7.0	

Table 7.7

Base Register Address	Modbus Register	Setting
30000	99	Tail Left Rub Block Absolute Alarm Temperature

Table 7.8

Base Register Address	Modbus Register	Setting
30000	100	Tail Left Rub Block Temperature

Table 7.9

Base Register Address	Modbus Register	Setting
30000	101	Tail Right Rub Block Status

Value	Status
Refer to Values/Status definitions for the setting in Table 7.0	

Table 7.10

Base Register Address	Modbus Register	Setting
30000	102	Tail Right Rub Block Absolute Alarm Temperature

Table 7.11

Base Register Address	Modbus Register	Setting
30000	103	Tail Right Rub Block Temperature

Section (Temperature)

Table 8.0

Base Register Address	Modbus Register	Setting
30000	110	HBS1 Status

Value	Status
-20000	OFF
0	HEALTHY
1	OPEN CIRCUIT ALARM
2	SHORT CIRCUIT ALARM
3	ABSOLUTE ALARM
4	RELATIVE ALARM
5	RATE OF RISE ALARM
6	COMMUNICATION ALARM
7	PRE ABSOLUTE ALARM

Table 8.1

Base Register Address	Modbus Register	Setting
30000	111	HBS1 Absolute Alarm Value

Table 8.2

Base Register Address	Modbus Register	Setting
30000	112	HBS1 Value

Table 8.3

Base Register Address	Modbus Register	Setting
30000	113	HBS2 Status

Value	Status
Refer to Values/Status definitions for the setting in Table 8.0	

Table 8.4

Base Register Address	Modbus Register	Setting
30000	114	HBS2 Absolute Alarm Value

Table 8.5

Base Register Address	Modbus Register	Setting
30000	115	HBS2 Value

Table 8.6

Base Register Address	Modbus Register	Setting
30000	116	HBS3 Status

Value	Status
Refer to Values/Status definitions for the setting in Table 8.0	

Table 8.7

Base Register Address	Modbus Register	Setting
30000	117	HBS3 Absolute Alarm Value

Table 8.8

Base Register Address	Modbus Register	Setting
30000	118	HBS3 Value

Table 8.9

Base Register Address	Modbus Register	Setting
30000	119	HBS4 Status

Value	Status
Refer to Values/Status definitions for the setting in Table 8.0	

Table 8.10

Base Register Address	Modbus Register	Setting
30000	120	HBS4 Absolute Alarm Value

Table 8.11

Base Register Address	Modbus Register	Setting
30000	121	HBS4 Value

Table 8.12

Base Register Address	Modbus Register	Setting
30000	122	HBS5 Status

Value	Status
Refer to Values/Status definitions for the setting in Table 8.0	

Table 8.13

Base Register Address	Modbus Register	Setting
30000	123	HBS5 Absolute Alarm Value

Table 8.14

Base Register Address	Modbus Register	Setting
30000	124	HBS5 Value

Table 8.15

Base Register Address	Modbus Register	Setting
30000	125	HBS6 Status

Value	Status
Refer to Values/Status definitions for the setting in Table 8.0	

Table 8.16

Base Register Address	Modbus Register	Setting
30000	126	HBS6 Absolute Alarm Value

Table 8.17

Base Register Address	Modbus Register	Setting
30000	127	HBS6 Value

Table 8.18

Base Register Address	Modbus Register	Setting
30000	128	AMB1 Status

Value	Status
Refer to Values/Status definitions for the setting in Table 8.0	

Table 8.19

Base Register Address	Modbus Register	Setting
30000	129	AMB1 Absolute Alarm Value

Table 8.20

Base Register Address	Modbus Register	Setting
30000	130	AMB1 Value

Table 8.21

Base Register Address	Modbus Register	Setting
30000	131	AMB2 Status

Value	Status
Refer to Values/Status definitions for the setting in Table 8.0	

Table 8.22

Base Register Address	Modbus Register	Setting
30000	132	AMB2 Absolute Alarm Value

Table 8.23

Base Register Address	Modbus Register	Setting
30000	133	AMB2 Value

Section 9 (Auxiliary)

Table 9.0

Byte Order: (X:xxxx:Alarm, Status:Input, State:Alarm, Condition:Enabled/Disable)

Base Register Address	Modbus Register	Setting
30000	151	Plug Monitoring

Flags	Bit Position	Bit position meaning
Enabled/Disabled	0	1 = Enabled; 0 = Disabled
Alarm Condition*	1	1 = ON; 0 = OFF
Input State	2	1 = OFF; 0 = ON
Alarm Status	3	0 = Healthy; 1 = Alarm

Table 9.1

Byte Order: (X:xxxx:Alarm Status:Input State:Alarm Condition:Enabled/Disable)

Base Register Address	Modbus Register	Setting
30000	152	Pulley Monitoring

Flags	Bit Position	Bit position meaning
Enabled/Disabled	0	1 = Enabled; 0 = Disabled
Alarm Condition*	1	1 = ON; 0 = OFF
Input State	2	1 = OFF; 0 = ON
Alarm Status	3	0 = Healthy; 1 = Alarm

* When Alarm Condition is set to 1 (ON), the Status will change to Alarm if the +24 VDC signal is applied to the input terminal and vice versa.

Section 10 (Test Mode)

Table 10.0

Byte Order: (X:xxx:ALIGN:HBS:US:OS:ALR)

Base Register Address	Modbus Register	Setting
30000	158	Test State

Flags	Bit Position
Alarm Relay Test	0
Over Speed Test	1
Under speed Test	2
HBS Test	3
Alignment Test	4

Section 11 (Ethernet)

Table 11.0

Byte Order: (X:DHCP Status)

Base Register Address	Modbus Register	Setting
30000	164	DHCP Status

Value	State
0	DHCP disabled
1	DHCP Enabled

Table 11.1a

Base Register Address	Modbus Register	Setting
30000	165	IP Address (High)
Note: Two most significant octets of the IP address.		

Table 11.1b

Base Register Address	Modbus Register	Setting
30000	166	IP Address (Low)
Note: Two least significant octets of the IP address.		

Table 11.2a

Base Register Address	Modbus Register	Setting
30000	167	Subnet Mask (High)
Note: Two most significant octets of the Subnet Mask.		

Table 11.2b

Base Register Address	Modbus Register	Setting
30000	168	Subnet Mask (Low)
Note: Two least significant octets of the Subnet Mask.		

Table 11.3a

Base Register Address	Modbus Register	Setting
30000	169	Gateway (High)
Note: Two most significant octets of the Gateway.		

Table 11.3b

Base Register Address	Modbus Register	Setting
30000	170	Gateway (Low)
Note: Two least significant octets of the Gateway.		

Table 11.4a

Base Register Address	Modbus Register	Setting
30000	171	DNS Server 1 (High)
Note: Two most significant octets of the DNS1.		

Table 11.4b

Base Register Address	Modbus Register	Setting
30000	172	DNS Server 1 (Low)
Note: Two least significant octets of the DNS1.		

Table 11.5a

Base Register Address	Modbus Register	Setting
30000	173	DNS Server 2 (High)
Note: Two most significant octets of the DNS2.		

Table 11.5b

Base Register Address	Modbus Register	Setting
30000	174	DNS Server 2 (Low)
Note: Two least significant octets of the DNS2.		

Table 11.6a

Base Register Address	Modbus Register	Setting
30000	175	MAC Address (High)
Note: Two most significant octets of the MAC address.		

Table 11.6b

Base Register Address	Modbus Register	Setting
30000	176	MAC Address (Medium)
Note: Two medium octets of the MAC address.		

Table 11.6c

Base Register Address	Modbus Register	Setting
30000	177	MAC Address (Low)
Note: Two least significant octets of the MAC address.		

Table 11.7a

Base Register Address	Modbus Register	Setting
30000	178	UDF ID (High)
Note: Two most significant octets of the UDF ID.		

Table 11.7b

Base Register Address	Modbus Register	Setting
30000	179	UDF ID (Low)
Note: Two least significant octets of the UDF ID.		

Table 11.8

Base Register Address	Modbus Register	Setting
30000	180	Hazard Mon Status

Value	State
0	Disconnected
1	Connected

Section 12 (SD Card)

Table 12.0

Byte Order: (X:SD Card Status)

Base Register Address	Modbus Register	Setting
30000	192	SD Card Status

Flags	Bit position	Bit position meaning
R/W ERROR	0-7	0 = No Error, 2 = Card Not Detected, For other values contact 4B with error code for assistance
SD CARD PRESENT	8	1 = Card Present; 0 = Card Not Present

Section 13 (Expansion Board General)

Table 13.0

Base Register Address	Modbus Register	Setting
30000	206	Expansion 1 Connected

Value	State
0	Disconnected
1	Connected

This register indicates whether the expansion board is communicating with the WDC4

Table 13.1

Base Register Address	Modbus Register	Setting
30000	207	Expansion 1 Type

Value	State	Section
0	Unknown	N/A
1	None	N/A
2	NTC	15.0
3	SSR	14.0
4	6AN	16.0
5	2AN	16.0
6	PT100	17.0

Note: the value of this table indicates which data layout should be used as all expansion boards share the same set of registers. The expansion information occupies registers 208-307.

Table 13.2

Base Register Address	Modbus Register	Setting
30000	308	Expansion 2 Connected

Value	State
0	Disconnected

1	Connected
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This register indicates whether the expansion board is communicating with the WDC4

Table 13.3

Base Register Address	Modbus Register	Setting
30000	309	Expansion 2 Type

Value	State	Section
0	Unknown	N/A
1	None	N/A
2	NTC	15.0
3	SSR	14.0
4	6AN	16.0
5	2AN	16.0
6	PT100	17.0

Note: the value of this table indicates which data layout should be used as all expansion boards share the same set of registers. The expansion information occupies registers 310-409.

Section 14 (SSR Expansion Board)

Table 14.0

Base Register Address	Modbus Register Exp 1	Modbus Register Exp 2	Setting
30000	208	310	Relay 1 (SPEED)

Value	State
0	HEALTHY
1	ALARM

Table 14.1

Base Register Address	Modbus Register Exp 1	Modbus Register Exp 2	Setting
30000	209	311	Relay 2 (ALIGN)

Value	State
0	HEALTHY
1	ALARM

Table 14.2

Base Register Address	Modbus Register Exp 1	Modbus Register Exp 2	Setting
30000	210	312	Relay 3 (TEMP)

Value	State
0	HEALTHY
1	ALARM

Table 14.3

Base Register Address	Modbus Register Exp 1	Modbus Register Exp 2	Setting
30000	211	313	Relay 4 (AUX)

Value	State
0	HEALTHY
1	ALARM

Section 15 (NTC Expansion Board)

Note: HBS7-12 are associated with NTC expansion 1 while HBS13-18 are associated with NTC expansion 2.

Table 15.0

Base Register Address	Modbus Register	Setting
30000	208	HBS7 Status

Value	Status
Refer to Values/Status definitions for the setting in Table 8.0	

Table 15.1

Base Register Address	Modbus Register	Setting
30000	209	HBS7 Absolute Alarm Value

Table 15.2

Base Register Address	Modbus Register	Setting
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30000	210	HBS7 Value
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Table 15.3

Base Register Address	Modbus Register	Setting
30000	211	HBS8 Status

Value	Status
Refer to Values/Status definitions for the setting in Table 8.0	

Table 15.4

Base Register Address	Modbus Register	Setting
30000	212	HBS8 Absolute Alarm Value

Table 15.5

Base Register Address	Modbus Register	Setting
30000	213	HBS8 Value

Table 15.6

Base Register Address	Modbus Register	Setting
30000	214	HBS9 Status

Value	Status
Refer to Values/Status definitions for the setting in Table 8.0	

Table 15.7

Base Register Address	Modbus Register	Setting
30000	215	HBS9 Absolute Alarm Value

Table 15.8

Base Register Address	Modbus Register	Setting
30000	216	HBS9 Value

Table 15.9

Base Register Address	Modbus Register	Setting
30000	217	HBS10 Status

Value	Status
Refer to Values/Status definitions for the setting in Table 8.0	

Table 15.10

Base Register Address	Modbus Register	Setting
30000	218	HBS10 Absolute Alarm Value

Table 15.11

Base Register Address	Modbus Register	Setting
30000	219	HBS10 Value

Table 15.12

Base Register Address	Modbus Register	Setting
30000	220	HBS11 Status

Value	Status
Refer to Values/Status definitions for the setting in Table 8.0	

Table 15.13

Base Register Address	Modbus Register	Setting
30000	221	HBS11 Absolute Alarm Value

Table 15.14

Base Register Address	Modbus Register	Setting
30000	222	HBS11 Value

Table 15.15

Base Register Address	Modbus Register	Setting
30000	223	HBS12 Status

Value	Status
Refer to Values/Status definitions for the setting in Table 8.0	

Table 15.16

Base Register Address	Modbus Register	Setting
30000	224	HBS12 Absolute Alarm Value

Table 15.17

Base Register Address	Modbus Register	Setting
30000	225	HBS12 Value

Table 15.18

Base Register Address	Modbus Register	Setting
30000	310	HBS13 Status

Value	Status
Refer to Values/Status definitions for the setting in Table 8.0	

Table 15.19

Base Register Address	Modbus Register	Setting
30000	311	HBS13 Absolute Alarm Value

Table 15.20

Base Register Address	Modbus Register	Setting
30000	312	HBS13 Value

Table 15.21

Base Register Address	Modbus Register	Setting
30000	313	HBS14 Status

Value	Status
Refer to Values/Status definitions for the setting in Table 8.0	

Table 15.22

Base Register Address	Modbus Register	Setting
30000	314	HBS14 Absolute Alarm Value

Table 15.23

Base Register Address	Modbus Register	Setting
30000	315	HBS14 Value

Table 15.24

Base Register Address	Modbus Register	Setting
30000	316	HBS15 Status

Value	Status
Refer to Values/Status definitions for the setting in Table 8.0	

Table 15.25

Base Register Address	Modbus Register	Setting
30000	317	HBS15 Absolute Alarm Value

Table 15.26

Base Register Address	Modbus Register	Setting
30000	318	HBS15 Value

Table 15.27

Base Register Address	Modbus Register	Setting
30000	319	HBS16 Status

Value	Status
Refer to Values/Status definitions for the setting in Table 8.0	

Table 15.28

Base Register Address	Modbus Register	Setting
30000	320	HBS16 Absolute Alarm Value

Table 15.29

Base Register Address	Modbus Register	Setting
30000	321	HBS16 Value

Table 15.30

Base Register Address	Modbus Register	Setting
30000	322	HBS17 Status

Value	Status
Refer to Values/Status definitions for the setting in Table 8.0	

Table 15.31

Base Register Address	Modbus Register	Setting
30000	323	HBS17 Absolute Alarm Value

Table 15.32

Base Register Address	Modbus Register	Setting
30000	324	HBS17 Value

Table 15.33

Base Register Address	Modbus Register	Setting
30000	325	HBS18 Status

Value	Status
Refer to Values/Status definitions for the setting in Table 8.0	

Table 15.34

Base Register Address	Modbus Register	Setting
30000	326	HBS18 Absolute Alarm Value

Table 15.35

Base Register Address	Modbus Register	Setting
30000	327	HBS18 Value

Section 16 (6AN & 2AN Expansion Boards)

This section describes the analogue cards, these two cards offer 4-20mA inputs (CLI) and 0 – 24V inputs (VIN).

Expansion board 1 has inputs CLI1-4 and VIN1-2, expansion board 2 has inputs CLI5-8 and VIN3-4.

Note: The 2AN expansion board is identical to the 6AN board except for the fact that CLI 3,4,7,8 and VIN1-4 are disabled.

Table 16.0

CLI1, current loop input.

Table 16.0a

Base Register Address	Modbus Register	Setting
30000	208	CLI1 Status

Value	Status
-20000	OFF
0	HEALTHY
1	OPEN CIRCUIT ALARM
2	SHORT CIRCUIT ALARM
3	HIGH ABSOLUTE ALARM
4	LOW ABSOLUTE ALARM
5	COMMUNICATION ALARM
7	PRE ABSOLUTE ALARM
8	RANGE FAILURE ALARM

Table 16.0b

Byte Order: (X:xxxx:ABS, H:Pre-ABS, H:Pre-ABS, L:ABS L)

Base Register Address	Modbus Register	Setting
30000	209	CLI1 Alarm Enable Bitmask

Variable	Bit Position	Value
Absolute Low Enable	0	0 = OFF, 1 = ON
Pre-Absolute Low Enable	1	0 = OFF, 1 = ON
Pre-Absolute High Enable	2	0 = OFF, 1 = ON
Absolute High Enable	3	0 = OFF, 1 = ON

Table 16.0c

Base Register Address	Modbus Register	Setting
30000	210	CLI1 High Absolute Alarm (Scaled Value x 10)

Table 16.0d

Base Register Address	Modbus Register	Setting
30000	211	CLI1 High Pre-Absolute Alarm (Scaled Value x 10)

Table 16.0e

Base Register Address	Modbus Register	Setting
30000	212	CLI1 Low Pre-Absolute Alarm (Scaled Value x 10)

Table 16.0f

Base Register Address	Modbus Register	Setting
30000	213	CLI1 Low Absolute Alarm (Scaled Value x 10)

Table 16.0g

Base Register Address	Modbus Register	Setting
30000	214	CLI1 Scaled Value (x10)

Table 16.0h

Byte Order: (X:Char 1:X:Char 2:X:Char 3)

Base Register Address	Modbus Register	Setting
30000	215-217	CLI1 Unit Characters

These registers represent a short ASCII character string indicating the units of the sensor

Table 16.0i

Base Register Address	Modbus Register	Setting
30000	218	CLI1 Max Scaled Value (x10)

Table 16.0j

Base Register Address	Modbus Register	Setting
30000	219	CLI1 Min Scaled Value (x10)

Table 16.0k

Base Register Address	Modbus Register	Setting
30000	220	CLI1 Raw Value (μ A)*

*Note that the following special values indicate fault conditions (these match conditions given in 16.0a)

Value (Hex)	Meaning
0x7530	Short Circuit

0x9C40	Open Circuit
0xFA17	Communications Error
0xC350	Sensor Failure (value out of range)
0xB1E0	Sensor Off

Table 16.0l

Base Register Address	Modbus Register	Setting
30000	221	CLI1 Max Raw Value (μ A)

Table 16.0m

Base Register Address	Modbus Register	Setting
30000	222	CLI1 Min Raw Value (μ A)

Table 16.1

CLI2, current loop input.

Table 16.1a

Base Register Address	Modbus Register	Setting
30000	223	CLI2 Status

See Table 16.0a for values of status

Table 16.1b

Byte Order: (X:xxxx:ABS H:Pre-ABS H:Pre-ABS L:ABS L)

Base Register Address	Modbus Register	Setting
30000	224	CLI2 Alarm Enable Bitmask

See Table 16.0b for bit information

Table 16.1c

Base Register Address	Modbus Register	Setting
30000	225	CLI2 High Absolute Alarm (Scaled Value x 10)

Table 16.1d

Base Register Address	Modbus Register	Setting
30000	226	CLI2 High Pre-Absolute Alarm (Scaled Value x 10)

Table 16.1e

Base Register Address	Modbus Register	Setting
30000	227	CLI2 Low Pre-Absolute Alarm (Scaled Value x 10)

Table 16.1f

Base Register Address	Modbus Register	Setting
30000	228	CLI2 Low Absolute Alarm (Scaled Value x 10)

Table 16.1g

Base Register Address	Modbus Register	Setting
30000	229	CLI2 Scaled Value (x10)

Table 16.1h

Byte Order: (X:Char 1:X:Char 2:X:Char 3)

Base Register Address	Modbus Register	Setting
30000	230-232	CLI2 Unit Characters

These registers represent a short ASCII character string indicating the units of the sensor

Table 16.1i

Base Register Address	Modbus Register	Setting
30000	233	CLI2 Max Scaled Value (x10)

Table 16.1j

Base Register Address	Modbus Register	Setting
30000	234	CLI2 Min Scaled Value (x10)

Table 16.1k

Base Register Address	Modbus Register	Setting
30000	235	CLI2 Raw Value (μA)*

*See Table 16.0k for special fault values

Table 16.1l

Base Register Address	Modbus Register	Setting
30000	236	CLI2 Max Raw Value (μA)

Table 16.1m

Base Register Address	Modbus Register	Setting
30000	237	CLI2 Min Raw Value (μA)

Table 16.2

CLI3, current loop input, note this channel cannot be enabled on 2AN cards.

Table 16.2a

Base Register Address	Modbus Register	Setting
30000	238	CLI3 Status

See Table 16.0a for values of status

Table 16.2b

Byte Order: (X:xxxx:ABS H:Pre-ABS H:Pre-ABS L:ABS L)

Base Register Address	Modbus Register	Setting
30000	239	CLI3 Alarm Enable Bitmask

See Table 16.0b for bit information

Table 16.2c

Base Register Address	Modbus Register	Setting
30000	240	CLI3 High Absolute Alarm (Scaled Value x 10)

Table 16.2d

Base Register Address	Modbus Register	Setting
30000	241	CLI3 High Pre-Absolute Alarm (Scaled Value x 10)

Table 16.2e

Base Register Address	Modbus Register	Setting
30000	242	CLI3 Low Pre-Absolute Alarm (Scaled Value x 10)

Table 16.2f

Base Register Address	Modbus Register	Setting
30000	243	CLI3 Low Absolute Alarm (Scaled Value x 10)

Table 16.2g

Base Register Address	Modbus Register	Setting
30000	244	CLI3 Scaled Value (x10)

Table 16.2h

Byte Order: (X:Char 1:X:Char 2:X:Char 3)

Base Register Address	Modbus Register	Setting
30000	245-247	CLI3 Unit Characters

These registers represent a short ASCII character string indicating the units of the sensor

Table 16.2i

Base Register Address	Modbus Register	Setting
30000	248	CLI3 Max Scaled Value (x10)

Table 16.2j

Base Register Address	Modbus Register	Setting
30000	249	CLI3 Min Scaled Value (x10)

Table 16.2k

Base Register Address	Modbus Register	Setting
30000	250	CLI3 Raw Value (μA)*

*See Table 16.0k for special fault values

Table 16.2l

Base Register Address	Modbus Register	Setting
30000	251	CLI3 Max Raw Value (μA)

Table 16.2m

Base Register Address	Modbus Register	Setting
30000	252	CLI3 Min Raw Value (μA)

Table 16.3

CLI4, current loop input, note this channel cannot be enabled on 2AN cards.

Table 16.3a

Base Register Address	Modbus Register	Setting
30000	253	CLI4 Status

See Table 16.0a for values of status

Table 16.3b

Byte Order: (X:xxxx:ABS H:Pre-ABS H:Pre-ABS L:ABS L)

Base Register Address	Modbus Register	Setting
30000	254	CLI4 Alarm Enable Bitmask

See Table 16.0b for bit information

Table 16.3c

Base Register Address	Modbus Register	Setting
30000	255	CLI4 High Absolute Alarm (Scaled Value x 10)

Table 16.3d

Base Register Address	Modbus Register	Setting
30000	256	CLI4 High Pre-Absolute Alarm (Scaled Value x 10)

Table 16.3e

Base Register Address	Modbus Register	Setting
30000	257	CLI4 Low Pre-Absolute Alarm (Scaled Value x 10)

Table 16.3f

Base Register Address	Modbus Register	Setting
30000	258	CLI4 Low Absolute Alarm (Scaled Value x 10)

Table 16.3g

Base Register Address	Modbus Register	Setting
30000	259	CLI4 Scaled Value (x10)

Table 16.3h

Byte Order: (X:Char 1:X:Char 2:X:Char 3)

Base Register Address	Modbus Register	Setting
30000	260-262	CLI4 Unit Characters

These registers represent a short ASCII character string indicating the units of the sensor

Table 16.3i

Base Register Address	Modbus Register	Setting
30000	263	CLI4 Max Scaled Value (x10)

Table 16.3j

Base Register Address	Modbus Register	Setting
30000	264	CLI4 Min Scaled Value (x10)

Table 16.3k

Base Register Address	Modbus Register	Setting
30000	265	CLI4 Raw Value (μA)*

*See Table 16.0k for special fault values

Table 16.3l

Base Register Address	Modbus Register	Setting
30000	266	CLI4 Max Raw Value (μA)

Table 16.3m

Base Register Address	Modbus Register	Setting
30000	267	CLI4 Min Raw Value (μA)

Table 16.4

VIN1, voltage input, note this channel cannot be enabled on 2AN cards.

Table 16.4a

Base Register Address	Modbus Register	Setting
30000	268	VIN1 Status

See Table 16.0a for values of status

Table 16.4b

Byte Order: (X:xxxx:ABS H:Pre-ABS H:Pre-ABS L:ABS L)

Base Register Address	Modbus Register	Setting
30000	269	VIN1 Alarm Enable Bitmask

See Table 16.0b for bit information

Table 16.4c

Base Register Address	Modbus Register	Setting
30000	270	VIN1 High Absolute Alarm (Scaled Value x 10)

Table 16.4d

Base Register Address	Modbus Register	Setting
30000	271	VIN1 High Pre-Absolute Alarm (Scaled Value x 10)

Table 16.4e

Base Register Address	Modbus Register	Setting
30000	272	VIN1 Low Pre-Absolute Alarm (Scaled Value x 10)

Table 16.4f

Base Register Address	Modbus Register	Setting
30000	273	VIN1 Low Absolute Alarm (Scaled Value x 10)

Table 16.4g

Base Register Address	Modbus Register	Setting
30000	274	VIN1 Scaled Value (x10)

Table 16.4h

Byte Order: (X:Char 1:X:Char 2:X:Char 3)

Base Register Address	Modbus Register	Setting
30000	275-277	VIN1 Unit Characters

These registers represent a short ASCII character string indicating the units of the sensor

Table 16.4i

Base Register Address	Modbus Register	Setting
30000	278	VIN1 Max Scaled Value (x10)

Table 16.4j

Base Register Address	Modbus Register	Setting
30000	279	VIN1 Min Scaled Value (x10)

Table 16.4k

Base Register Address	Modbus Register	Setting
30000	280	VIN1 Raw Value (mV)*

*See Table 16.0k for special fault values

Table 16.4l

Base Register Address	Modbus Register	Setting
30000	281	VIN1 Max Raw Value (mV)

Table 16.4m

Base Register Address	Modbus Register	Setting
30000	282	VIN1 Min Raw Value (mV)

Table 16.5

VIN2, voltage input, note this channel cannot be enabled on 2AN cards.

Table 16.5a

Base Register Address	Modbus Register	Setting
30000	283	VIN2 Status

See Table 16.0a for values of status

Table 16.5b

Byte Order: (X:xxxx:ABS H:Pre-ABS H:Pre-ABS L:ABS L)

Base Register Address	Modbus Register	Setting
30000	284	VIN2 Alarm Enable Bitmask

See Table 16.0b for bit information

Table 16.5c

Base Register Address	Modbus Register	Setting
30000	285	VIN2 High Absolute Alarm (Scaled Value x 10)

Table 16.5d

Base Register Address	Modbus Register	Setting
30000	286	VIN2 High Pre-Absolute Alarm (Scaled Value x 10)

Table 16.5e

Base Register Address	Modbus Register	Setting
30000	287	VIN2 Low Pre-Absolute Alarm (Scaled Value x 10)

Table 16.5f

Base Register Address	Modbus Register	Setting
30000	288	VIN2 Low Absolute Alarm (Scaled Value x 10)

Table 16.5g

Base Register Address	Modbus Register	Setting
30000	289	VIN2 Scaled Value (x10)

Table 16.5h

Byte Order: (X:Char 1:X:Char 2:X:Char 3)

Base Register Address	Modbus Register	Setting
30000	290-292	VIN2 Unit Characters

These registers represent a short ASCII character string indicating the units of the sensor

Table 16.1i

Base Register Address	Modbus Register	Setting
30000	293	VIN2 Max Scaled Value (x10)

Table 16.5j

Base Register Address	Modbus Register	Setting
30000	294	VIN2 Min Scaled Value (x10)

Table 16.5k

Base Register Address	Modbus Register	Setting
30000	295	VIN2 Raw Value (mV)*

*See Table 16.0k for special fault values

Table 16.5l

Base Register Address	Modbus Register	Setting
30000	296	VIN2 Max Raw Value (mV)

Table 16.5m

Base Register Address	Modbus Register	Setting
30000	297	VIN2 Min Raw Value (mV)

Table 16.6

CLI5, current loop input.

Table 16.6a

Base Register Address	Modbus Register	Setting
30000	310	CLI5 Status

See Table 16.0a for values of status

Table 16.6b

Byte Order: (X:xxxx:ABS H:Pre-ABS H:Pre-ABS L:ABS L)

Base Register Address	Modbus Register	Setting
30000	311	CLI5 Alarm Enable Bitmask

See Table 16.0b for bit information

Table 16.6c

Base Register Address	Modbus Register	Setting
30000	312	CLI5 High Absolute Alarm (Scaled Value x 10)

Table 16.6d

Base Register Address	Modbus Register	Setting
30000	313	CLI5 High Pre-Absolute Alarm (Scaled Value x 10)

Table 16.6e

Base Register Address	Modbus Register	Setting
30000	314	CLI5 Low Pre-Absolute Alarm (Scaled Value x 10)

Table 16.6f

Base Register Address	Modbus Register	Setting
30000	315	CLI5 Low Absolute Alarm (Scaled Value x 10)

Table 16.6g

Base Register Address	Modbus Register	Setting
30000	316	CLI5 Scaled Value (x10)

Table 16.6h

Byte Order: (X:Char 1:X:Char 2:X:Char 3)

Base Register Address	Modbus Register	Setting
30000	317-319	CLI5 Unit Characters

These registers represent a short ASCII character string indicating the units of the sensor

Table 16.6i

Base Register Address	Modbus Register	Setting
30000	320	CLI5 Max Scaled Value (x10)

Table 16.6j

Base Register Address	Modbus Register	Setting
30000	321	CLI5 Min Scaled Value (x10)

Table 16.6k

Base Register Address	Modbus Register	Setting
30000	322	CLI5 Raw Value (μA)*

*See Table 16.0k for special fault values

Table 16.6l

Base Register Address	Modbus Register	Setting
30000	323	CLI5 Max Raw Value (μA)

Table 16.6m

Base Register Address	Modbus Register	Setting
30000	324	CLI5 Min Raw Value (μA)

Table 16.7

CLI6, current loop input.

Table 16.7a

Base Register Address	Modbus Register	Setting
30000	325	CLI6 Status

See Table 16.0a for values of status

Table 16.7b

Byte Order: (X:xxxx:ABS H:Pre-ABS H:Pre-ABS L:ABS L)

Base Register Address	Modbus Register	Setting
30000	326	CLI6 Alarm Enable Bitmask

See Table 16.0b for bit information

Table 16.7c

Base Register Address	Modbus Register	Setting
30000	327	CLI6 High Absolute Alarm (Scaled Value x 10)

Table 16.7d

Base Register Address	Modbus Register	Setting
30000	328	CLI6 High Pre-Absolute Alarm (Scaled Value x 10)

Table 16.7e

Base Register Address	Modbus Register	Setting
30000	329	CLI6 Low Pre-Absolute Alarm (Scaled Value x 10)

Table 16.7f

Base Register Address	Modbus Register	Setting
30000	330	CLI6 Low Absolute Alarm (Scaled Value x 10)

Table 16.7g

Base Register Address	Modbus Register	Setting
30000	331	CLI6 Scaled Value (x10)

Table 16.7h

Byte Order: (X:Char 1:X:Char 2:X:Char 3)

Base Register Address	Modbus Register	Setting
30000	332-334	CLI6 Unit Characters

These registers represent a short ASCII character string indicating the units of the sensor

Table 16.7i

Base Register Address	Modbus Register	Setting
30000	335	CLI6 Max Scaled Value (x10)

Table 16.7j

Base Register Address	Modbus Register	Setting
30000	336	CLI6 Min Scaled Value (x10)

Table 16.7k

Base Register Address	Modbus Register	Setting
30000	337	CLI6 Raw Value (μA)*

*See Table 16.0k for special fault values

Table 16.7l

Base Register Address	Modbus Register	Setting
30000	338	CLI6 Max Raw Value (μA)

Table 16.7m

Base Register Address	Modbus Register	Setting
30000	339	CLI6 Min Raw Value (μA)

Table 16.8

CLI7, current loop input, note this channel cannot be enabled on 2AN cards.

Table 16.8a

Base Register Address	Modbus Register	Setting
30000	340	CLI7 Status

See Table 16.0a for values of status

Table 16.8b

Byte Order: (X:xxxx:ABS H:Pre-ABS H:Pre-ABS L:ABS L)

Base Register Address	Modbus Register	Setting
30000	341	CLI7 Alarm Enable Bitmask

See Table 16.0b for bit information

Table 16.8c

Base Register Address	Modbus Register	Setting
30000	342	CLI7 High Absolute Alarm (Scaled Value x 10)

Table 16.8d

Base Register Address	Modbus Register	Setting
30000	343	CLI7 High Pre-Absolute Alarm (Scaled Value x 10)

Table 16.8e

Base Register Address	Modbus Register	Setting
30000	344	CLI7 Low Pre-Absolute Alarm (Scaled Value x 10)

Table 16.8f

Base Register Address	Modbus Register	Setting
30000	345	CLI7 Low Absolute Alarm (Scaled Value x 10)

Table 16.8g

Base Register Address	Modbus Register	Setting
30000	346	CLI7 Scaled Value (x10)

Table 16.8h

Byte Order: (X:Char 1:X:Char 2:X:Char 3)

Base Register Address	Modbus Register	Setting
30000	347-349	CLI7 Unit Characters

These registers represent a short ASCII character string indicating the units of the sensor

Table 16.8i

Base Register Address	Modbus Register	Setting
30000	350	CLI7 Max Scaled Value (x10)

Table 16.8j

Base Register Address	Modbus Register	Setting
30000	351	CLI7 Min Scaled Value (x10)

Table 16.8k

Base Register Address	Modbus Register	Setting
30000	352	CLI7 Raw Value (μA)*

*See Table 16.0k for special fault values

Table 16.8l

Base Register Address	Modbus Register	Setting
30000	353	CLI7 Max Raw Value (μA)

Table 16.8m

Base Register Address	Modbus Register	Setting
30000	354	CLI7 Min Raw Value (μA)

Table 16.9

CLI8, current loop input, note this channel cannot be enabled on 2AN cards.

Table 16.9a

Base Register Address	Modbus Register	Setting
30000	355	CLI8 Status

See Table 16.0a for values of status

Table 16.9b

Byte Order: (X:xxxx:ABS H:Pre-ABS H:Pre-ABS L:ABS L)

Base Register Address	Modbus Register	Setting
30000	356	CLI8 Alarm Enable Bitmask

See Table 16.0b for bit information

Table 16.9c

Base Register Address	Modbus Register	Setting
30000	357	CLI8 High Absolute Alarm (Scaled Value x 10)

Table 16.9d

Base Register Address	Modbus Register	Setting
30000	358	CLI8 High Pre-Absolute Alarm (Scaled Value x 10)

Table 16.9e

Base Register Address	Modbus Register	Setting
30000	359	CLI8 Low Pre-Absolute Alarm (Scaled Value x 10)

Table 16.9f

Base Register Address	Modbus Register	Setting
30000	360	CLI8 Low Absolute Alarm (Scaled Value x 10)

Table 16.9g

Base Register Address	Modbus Register	Setting
30000	361	CLI8 Scaled Value (x10)

Table 16.9h

Byte Order: (X:Char 1:X:Char 2:X:Char 3)

Base Register Address	Modbus Register	Setting
30000	362-364	CLI8 Unit Characters

These registers represent a short ASCII character string indicating the units of the sensor

Table 16.9i

Base Register Address	Modbus Register	Setting
30000	365	CLI8 Max Scaled Value (x10)

Table 16.9j

Base Register Address	Modbus Register	Setting
30000	366	CLI8 Min Scaled Value (x10)

Table 16.9k

Base Register Address	Modbus Register	Setting
30000	367	CLI8 Raw Value (μA)*

*See Table 16.0k for special fault values

Table 16.9l

Base Register Address	Modbus Register	Setting
30000	368	CLI8 Max Raw Value (μA)

Table 16.9m

Base Register Address	Modbus Register	Setting
30000	369	CLI8 Min Raw Value (μA)

Table 16.10

VIN3, voltage input, note this channel cannot be enabled on 2AN cards.

Table 16.10a

Base Register Address	Modbus Register	Setting
30000	370	VIN3 Status

See Table 16.0a for values of status

Table 16.10b

Byte Order: (X:xxxx:ABS H:Pre-ABS H:Pre-ABS L:ABS L)

Base Register Address	Modbus Register	Setting
30000	371	VIN3 Alarm Enable Bitmask

See Table 16.0b for bit information

Table 16.10c

Base Register Address	Modbus Register	Setting
30000	372	VIN3 High Absolute Alarm (Scaled Value x 10)

Table 16.10d

Base Register Address	Modbus Register	Setting
30000	373	VIN3 High Pre-Absolute Alarm (Scaled Value x 10)

Table 16.10e

Base Register Address	Modbus Register	Setting
30000	374	VIN3 Low Pre-Absolute Alarm (Scaled Value x 10)

Table 16.10f

Base Register Address	Modbus Register	Setting
30000	375	VIN3 Low Absolute Alarm (Scaled Value x 10)

Table 16.10g

Base Register Address	Modbus Register	Setting
30000	376	VIN3 Scaled Value (x10)

Table 16.10h

Byte Order: (X:Char 1:X:Char 2:X:Char 3)

Base Register Address	Modbus Register	Setting
30000	377-379	VIN3 Unit Characters

These registers represent a short ASCII character string indicating the units of the sensor

Table 16.10i

Base Register Address	Modbus Register	Setting
30000	380	VIN3 Max Scaled Value (x10)

Table 16.10j

Base Register Address	Modbus Register	Setting
30000	381	VIN3 Min Scaled Value (x10)

Table 16.10k

Base Register Address	Modbus Register	Setting
30000	382	VIN3 Raw Value (μ A)*

*See Table 16.0k for special fault values

Table 16.10l

Base Register Address	Modbus Register	Setting
30000	283	VIN3 Max Raw Value (mV)

Table 16.10m

Base Register Address	Modbus Register	Setting
30000	384	VIN3 Min Raw Value (mV)

Table 16.11

VIN4, voltage input, note this channel cannot be enabled on 2AN cards.

Table 16.11a

Base Register Address	Modbus Register	Setting
30000	385	VIN4 Status

See Table 16.0a for values of status

Table 16.11b

Byte Order: (X:xxxx:ABS H:Pre-ABS H:Pre-ABS L:ABS L)

Base Register Address	Modbus Register	Setting
30000	386	VIN4 Alarm Enable Bitmask

See Table 16.0b for bit information

Table 16.11c

Base Register Address	Modbus Register	Setting
30000	387	VIN4 High Absolute Alarm (Scaled Value x 10)

Table 16.11d

Base Register Address	Modbus Register	Setting
30000	388	VIN4 High Pre-Absolute Alarm (Scaled Value x 10)

Table 16.11e

Base Register Address	Modbus Register	Setting
30000	389	VIN4 Low Pre-Absolute Alarm (Scaled Value x 10)

Table 16.11f

Base Register Address	Modbus Register	Setting
30000	390	VIN4 Low Absolute Alarm (Scaled Value x 10)

Table 16.11g

Base Register Address	Modbus Register	Setting
30000	391	VIN4 Scaled Value (x10)

Table 16.11h

Byte Order: (X:Char 1:X:Char 2:X:Char 3)

Base Register Address	Modbus Register	Setting
30000	392-394	VIN4 Unit Characters

These registers represent a short ASCII character string indicating the units of the sensor

Table 16.11i

Base Register Address	Modbus Register	Setting
30000	395	VIN4 Max Scaled Value (x10)

Table 16.11j

Base Register Address	Modbus Register	Setting
30000	396	VIN4 Min Scaled Value (x10)

Table 16.11k

Base Register Address	Modbus Register	Setting
30000	397	VIN4 Raw Value (mV)*

*See Table 16.0k for special fault values

Table 16.11l

Base Register Address	Modbus Register	Setting
30000	398	VIN4 Max Raw Value (mV)

Table 16.11m

Base Register Address	Modbus Register	Setting
30000	399	VIN4 Min Raw Value (mV)

Section 17 (PT100 Expansion Board)

Inputs 1-4 are associated with expansion board 1, inputs 5-8 are associated with expansion board 2.

Table 17.0

Base Register Address	Modbus Register	Setting
30000	208	PT100 Input 1 Status

Value	Status
-20000	OFF
0	HEALTHY
1 / -30000	OPEN CIRCUIT ALARM
2 / 30000	SENSOR FAILURE ALARM
3	ABSOLUTE ALARM
4	RELATIVE ALARM
5	RATE OF RISE ALARM
6	COMMUNICATION ALARM
7	PRE ABSOLUTE ALARM

Table 17.1

Base Register Address	Modbus Register	Setting
30000	209	PT100 Input 1 Absolute Alarm Value

Table 17.2

Base Register Address	Modbus Register	Setting
30000	210	PT100 Input 1 Value

Table 17.3

Base Register Address	Modbus Register	Setting
30000	211	PT100 Input 2 Status

Value	Status
Refer to Values/Status definitions for the setting in Table 8.0	

Table 17.4

Base Register Address	Modbus Register	Setting
30000	212	PT100 Input 2 Absolute Alarm Value

Table 17.5

Base Register Address	Modbus Register	Setting
30000	213	PT100 Input 2 Value

Table 17.6

Base Register Address	Modbus Register	Setting
30000	214	PT100 Input 3 Status

Value	Status
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Refer to Values/Status definitions for the setting in Table 17.0

Table 17.7

Base Register Address	Modbus Register	Setting
30000	215	PT100 Input 3 Absolute Alarm Value

Table 17.8

Base Register Address	Modbus Register	Setting
30000	216	PT100 Input 3 Value

Table 17.9

Base Register Address	Modbus Register	Setting
30000	217	PT100 Input 4 Status

Value	Status
Refer to Values/Status definitions for the setting in Table 17.0	

Table 17.10

Base Register Address	Modbus Register	Setting
30000	218	PT100 Input 4 Absolute Alarm Value

Table 17.11

Base Register Address	Modbus Register	Setting
30000	219	PT100 Input 4 Value

Table 17.12

Base Register Address	Modbus Register	Setting
30000	310	PT100 Input 5 Status

Value	Status
Refer to Values/Status definitions for the setting in Table 17.0	

Table 17.13

Base Register Address	Modbus Register	Setting
30000	311	PT100 Input 5 Absolute Alarm Value

Table 17.14

Base Register Address	Modbus Register	Setting
30000	312	PT100 Input 5 Value

Table 17.15

Base Register Address	Modbus Register	Setting
30000	313	PT100 Input 6 Status

Value	Status
Refer to Values/Status definitions for the setting in Table 17.0	

Table 17.16

Base Register Address	Modbus Register	Setting
30000	314	PT100 Input 6 Absolute Alarm Value

Table 17.17

Base Register Address	Modbus Register	Setting
30000	315	PT100 Input 6 Value

Table 17.18

Base Register Address	Modbus Register	Setting
30000	316	PT100 Input 7 Status

Value	Status
Refer to Values/Status definitions for the setting in Table 17.0	

Table 17.19

Base Register Address	Modbus Register	Setting
30000	317	PT100 Input 7 Absolute Alarm Value

Table 17.20

Base Register Address	Modbus Register	Setting
30000	318	PT100 Channel 7 Value

Table 17.21

Base Register Address	Modbus Register	Setting
30000	319	PT100 Input 8 Status

Value	Status
Refer to Values/Status definitions for the setting in Table 17.0	

Table 17.22

Base Register Address	Modbus Register	Setting
30000	320	PT100 Input 8 Absolute Alarm Value

Table 17.23

Base Register Address	Modbus Register	Setting
30000	321	PT100 Input 8 Value

END USER NOTES

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