

POWERVAR Modbus Register Map – ManageUPS Net Adapter with Modbus Enabled.

(ManageUPS Net Adapter FW Version 3.16.12148 or higher)

For UPS offered from AMETEK-POWERVAR and AMETEK-SCI

ISSUE DATE: DEC 2015

Information available via Modbus function code 03 - Read Holding Registers
All registers are 16-bit unsigned integers, unless otherwise noted
Default offset is 1 (user configurable)

Register Map Version 1.08 PVI (ManageUPS Net Adapter FW Version 3.16.12148 or higher)

Revision History

- 1.00 - Initial Release
- 1.01 - Added Parallel System Information
- 1.02 - Changed 02Ch register to upsInputDCCurrent.
 - .. Moved upsInputRealPowerTotal and upsInputVATotal to 02Dh and 02Eh respectively.
- 1.03 - Changed units of upsInputDCVoltage to 0,1V
- 1.04 - Marketing / Documentation Updates for new UPS models
- 1.05 - Marketing / Documentation Updates for new UPS models
- 1.06 - Cleaned up formatting: removed tabs & formatted to fixed-width columns.
 - .. Renamed 059h/5 as upsAlarmBatteryCircuitOpen (was BatteryFuseBlown)
 - .. Added Comments re Severity (1, 2 or 3)* and SERVICE indication for upsWellKnownAlarms
 - .. Added upsConditionAlarmSummary (register 05Fh) to indicate highest severity of all active alarms
 - .. Added lead/lag indication to Power Factor registers (where supported) (registers 043h and 054h)
 - .. Added Displacement Power Factor registers with lead/lag indication (registers 044h and 055h)
- 1.07 - Added Powervar as Manufacturer (3)
 - .. Added New Models to upsIdentModel: Sinergy III (33), 3200 & SecurityPlus
 - .. Updated description of 018h register (upsBatteryCurrent) to indicate that it is a signed value.
- 1.08 - Changed upsIdentManufacturer Powervar to AMETEK-Powervar
 - Added AMETEK-SCI TO Manufacturer
 - Added Security One (34), Security II (35) and DPP (58) to upsIdentModel

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Relative address on Modbus	Designation	Comment
000h	not used	

1	upsIdent	

001h	upsIdentModbusProtocolVersion	NNN (108)
002h	1 upsIdentManufacturer	(0) Reserved
..		(1) Reserved
..		(2) Oneac
..		(3) AMETEK-Powervar
..		(4) Reserved
..		(5) Other
..		(6) AMETEK-SCI
003h	2 upsIdentModel	(0-30) Reserved
..		(31) Security Plus
..		(32) 3200 Series
..		(33) Sinergy III
..		(34) Security One
..		(35) Security II
..		(58) DPP
004h	3 upsIdentUPSSoftware1Version	HH Major - LL Minor
005h	4 upsIdentUPSSoftware1DateYear	
006h	5 upsIdentUPSSoftware1DateMonth	
007h	6 upsIdentUPSSoftware1DateDay	
008h	7 upsIdentUPSSoftware1Code	10HXXXXXX code
009h	8 upsIdentUPSSoftware2Version	HH Major - LL Minor
00Ah	9 upsIdentUPSSoftware2DateYear	
00Bh	10 upsIdentUPSSoftware2DateMonth	
00Ch	11 upsIdentUPSSoftware2DateDay	
00Dh	12 upsIdentUPSSoftware2Code	10HXXXXXX code
00Eh	13 reserved	
00Fh	14 reserved	
010h	15 reserved	
011h	16 reserved	
012h	17 reserved	

2	upsBattery	

013h	1 upsBatteryStatus	(1) unknown
..		(2) batteryNormal
..		(3) batteryLow
..		(4) batteryDepleted
014h	2 upsSecondsOnBattery	[s]
015h	3 upsEstimatedSecondsRemaining	[s]
016h	4 upsEstimatedChargeRemaining	[%]
017h	5 upsBatteryVoltage	[0,1 V]
018h	6 upsBatteryCurrent	[signed integer +/- 0,1 A]
		(>0 = charging, <0 = discharge)
019h	7 upsBatteryTemperature	[C]
01Ah	8 reserved	
01Bh	9 reserved	
01Ch	10 reserved	
01Dh	11 reserved	
01Eh	12 reserved	

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 3 upsInput

01Fh	1	upsInputLineBads	
020h	2	upsInputFrequency	[0,1 Hz]
021h	3	upsInputNumLines	
022h	4	upsInputVoltage L1	[V]
023h	5	upsInputVoltage L2	[V]
024h	6	upsInputVoltage L3	[V]
025h	7	upsInputCurrent L1	[0,1 A]
026h	8	upsInputCurrent L2	[0,1 A]
027h	9	upsInputCurrent L3	[0,1 A]
028h	10	upsInputRealPower L1	[0,1 kW]
029h	11	upsInputRealPower L2	[0,1 kW]
02Ah	12	upsInputRealPower L3	[0,1 kW]
02Bh	13	upsInputDCVoltage	[0,1 V]
02Ch	14	upsInputDCCurrent	[0,1 A]
02Dh	15	upsInputRealPowerTotal	[0,1 kW]
02Eh	15	upsInputVATotal	[0,1 kVA]
02Fh	17	reserved	
030h	18	reserved	

 4 upsOutput

031h	1	upsOutputSource	(1) other
..			(2) none
..			(3) normal
..			(4) bypass
..			(5) battery
..			(6) booster
..			(7) reducer
032h	2	upsOutputFrequency	[0,1 Hz]
033h	3	upsOutputNumLines	
034h	4	upsOutputVoltage L1	[V]
035h	5	upsOutputVoltage L2	[V]
036h	6	upsOutputVoltage L3	[V]
037h	7	upsOutputCurrent L1	[0,1 A]
038h	8	upsOutputCurrent L2	[0,1 A]
039h	9	upsOutputCurrent L3	[0,1 A]
03Ah	10	upsOutputRealPower L1	[0,1 kW]
03Bh	11	upsOutputRealPower L2	[0,1 kW]
03Ch	12	upsOutputRealPower L3	[0,1 kW]
03Dh	13	upsOutputPercentLoad L1	[%]
03Eh	14	upsOutputPercentLoad L2	[%]
03Fh	15	upsOutputPercentLoad L3	[%]
040h	16	upsOutputVA L1	[0,1 kVA]
041h	17	upsOutputVA L2	[0,1 kVA]
042h	18	upsOutputVA L3	[0,1 kVA]
043h/0-7	19	upsOutputPF (worst case; magnitude)	0-100
043h/15	20	upsOutputPF (worst case; lead/lag)	0=Leading, 1=Lagging, if supported; else 0
044h/0-7	21	upsOutputDispPF (worst case; magnitude)	0-100
044h/15	22	upsOutputDispPF (worst case; lead/lag)	0=Leading, 1=Lagging, if supported; else 0

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5 upsBypass

045h	1	upsBypassLineBads	
046h	2	upsBypassFrequency	[0,1 Hz]
047h	3	upsBypassNumLines	
048h	4	upsBypassVoltage L1	[V]
049h	5	upsBypassVoltage L2	[V]
04Ah	6	upsBypassVoltage L3	[V]
04Bh	7	upsBypassCurrent L1	[0,1 A]
04Ch	8	upsBypassCurrent L2	[0,1 A]
04Dh	9	upsBypassCurrent L3	[0,1 A]
04Eh	10	upsBypassRealPower L1	[0,1 kW]
04Fh	11	upsBypassRealPower L2	[0,1 kW]
050h	12	upsBypassRealPower L3	[0,1 kW]
051h	13	upsBypassVA L1	[0,1 kVA]
052h	14	upsBypassVA L2	[0,1 kVA]
053h	15	upsBypassVA L3	[0,1 kVA]
054h/0-7	16	upsBypassPF (worst case; magnitude)	0-100
054h/15	17	upsBypassPF (worst case; lead/lag)	0=Leading, 1=Lagging, if supported; else 0
055h/0-9	18	upsBypassDispPF (worst case; magnitude)	0-100
055h/15	19	upsBypassDispPF (worst case; lead/lag)	0=Leading, 1=Lagging, if supported; else 0

6 upsAlarm -- RFC1628 upsWellKnownAlarms

056h/0	1	upsAlarmsPresent	0 = none, 1 = one or more
056h/1	2	upsAlarmBatteryBad	(Severity 2 or 3) - SERVICE
056h/2	3	upsAlarmOnBattery	(Severity 2)
056h/3	4	upsAlarmLowBattery	(Severity 2)
056h/4	5	upsAlarmDepletedBattery	(Severity 3)
056h/5	6	upsAlarmTempBad	(Severity 2 or 3) - SERVICE
056h/6	7	upsAlarmInputBad	(Severity 2)
056h/7	8	upsAlarmOutputBad	(Severity 2)
056h/8	9	reserved	
056h/9	10	reserved	
056h/10	11	reserved	
056h/11	12	reserved	
056h/12	13	reserved	
056h/13	14	reserved	
056h/14	15	reserved	
056h/15	16	reserved	
057h/0	17	upsAlarmOutputOverload	(Severity 2 or 3)
057h/1	18	upsAlarmOnBypass	(Severity 2)
057h/2	19	upsAlarmBypassBad	(Severity 2 or 3) - SERVICE
057h/3	20	upsAlarmOutputOffAsRequested	(Severity 1)
057h/4	21	upsAlarmUpsOffAsRequested	(Severity 1)
057h/5	22	upsAlarmChargerFailed	(Severity 3) - SERVICE
057h/6	23	upsAlarmUpsOutputOff	(Severity 1)
057h/7	24	upsAlarmUpsSystemOff	(Severity 1)
057h/8	25	reserved	
057h/9	26	reserved	
057h/10	27	reserved	
057h/11	28	reserved	
057h/12	29	reserved	
057h/13	30	reserved	
057h/14	31	reserved	
057h/15	32	reserved	

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058h/0	33	upsAlarmFanFailure/LifeExceeded	(Severity 3)	- SERVICE
058h/1	34	upsAlarmFuseFailure	(Severity 3)	- SERVICE
058h/2	35	upsAlarmGeneralFault	(Severity 3)	- SERVICE
058h/3	36	upsAlarmDiagnosticTestFailed	(Severity 1 or 3)	
058h/4	37	upsAlarmCommunicationsLost	(Severity 3)	- SERVICE
058h/5	38	upsAlarmAwaitingPower		
058h/6	39	upsAlarmShutdownPending	(Severity 1)	
058h/7	40	upsAlarmShutdownImminent	(Severity 1)	
058h/8	41	reserved		
058h/9	42	reserved		
058h/10	43	reserved		
058h/11	44	reserved		
058h/12	45	reserved		
058h/13	46	reserved		
058h/14	47	reserved		
058h/15	48	reserved		
059h/0	49	upsAlarmTestInProgress	(Severity 1)	
059h/1	50	upsAlarmAutonomyCalibration	(Severity 1)	
059h/2	51	upsAlarmGeneralWarning	(Severity 1 or 2)	
059h/3	52	upsAlarmBatteryCharging	(Severity 1)	
059h/4	53	upsAlarmBackfeedRelayFailure	(Severity 3)	- SERVICE
059h/5	54	upsAlarmBatteryCircuitOpen	(Severity 3)	- SERVICE
059h/6	55	upsAlarmSystemRestartPending	(Severity 1)	
059h/7	56	upsAlarmBatteryDegraded	(Severity 2)	- SERVICE
059h/8	57	upsAlarmDCGroundFault	(Severity 3)	
059h/9	58	reserved		
059h/10	59	reserved		
059h/11	60	reserved		
059h/12	61	reserved		
059h/13	62	reserved		
059h/14	63	reserved		
059h/15	64	reserved		

7 upsCondition (system overview - mimic)

05Ah-063h reserved

8 upsParallelCondition

064h-06Ah reserved

9 customerDedicatedInformation

06Bh	1	customerInfo1	User-configurable
06Ch	2	customerInfo2	
06Dh	3	customerInfo3	
06Eh	4	customerInfo4	
06Fh	5	customerInfo5	