MPW

MODBUS TABLE

SUPPORTED FUNCTION	FUNCTION DESCRIPTION	ACCESSIBLE TABLES
1 (0x01)	BIT READING	STATES
2 (0x02)		STATES
3 (0x03)	REGISTERS READING	ALL
4 (0x04)		ALL

REGISTER[1]		SYSTEM STATES/ALARMS		BIT[2]	
NUMBER	ADDRESS			NUMBER	ADDRESS
1	0			1	0
		Test in progress	[0=NO / 1=YES]	2	1
				3	2
		Shutdown active	[0=NO / 1=YES]	4	3
				5	4
		Battery charged	[0=NO / 1=YES]	6	5
		Battery charging	[0=NO / 1=YES]	7	6
		Bypass bad	[0=NO / 1=YES]	8	7
				9	8
		Normal operation	[0=NO / 1=YES]	10	9
				11	10
		On bypass	[0=NO / 1=YES]	12	11
		Battery low	[0=NO / 1=YES]	13	12
		Battery working	[0=NO / 1=YES]	14	13
		UPS locked	[0=NO / 1=YES]	15	14
		Output powered	[0=NO / 1=YES]	16	15
2	1			17	16
				18	17
				19	18
				20	19
				21	20
				22	21
				23	22
				24	23
				25	24
				26	25
				27	26
				28	27
		Input Mains present	[0=NO / 1=YES]	29	28
		Alarm temperature	[0=NO / 1=YES]	30	29
		Alarm overload	[0=NO / 1=YES]	31	30
		UPS failure	[0=NO / 1=YES]	32	31

3	2		33	32
			34	33
			35	34
			36	35
			37	36
			38	37
			39	38
			40	39
			41	40
			42	41
			43	42
			44	43
			45	44
			46	45
			47	46
			48	47
4	3		49	48
			50	49
			51	50
			52	51
			53	52
			54	53
			55	54
			56	55
			57	56
			58	57
			59	58
			60	59
			61	60
			62	61
			63	62
		Communication lost with UPS [0=NO / 1=YES]	64	63

[1] *The register number **n** must be addressed **n-1** in the data packet.*

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REGISTER[(1)]		SYSTEM MEASUREMENTS	Unit
NUMBER	ADDRESS		
9÷11	8÷10		
12	11	Input mains star voltage V1	V
13	12	Input mains star voltage V2	V
14	13	Input mains star voltage V3	V
15	14	Input current phase L1	0.1*A
16	15	Input current phase L2	0.1*A
17	16	Input current phase L3	0.1*A
18	17	Input frequency	V
19÷21	18÷20		
22	21	Bypass mains star voltage V1	V
23	22	Bypass mains star voltage V2	V
24	23	Bypass mains star voltage V3	V
25	24	Bypass frequency	0.1*Hz
26	25	Output star voltage V1	V
27	26	Output star voltage V2	V
28	27	Output star voltage V3	V
29÷31	28÷30		
32	31	Output current phase L1	0.1*A
33	32	Output current phase L2	0.1*A
34	33	Output current phase L3	0.1*A
35	34	Output peak current phase L1	0.1*A
36	35	Output peak current phase L2	0.1*A
37	36	Output peak current phase L3	0.1*A
38	37	Load phase L1	%
39	38	Load phase L2	%
40	39	Load phase L3	%
41	40	Output active power phase L1	0.1 kW
42	41	Output active power phase L2	0.1 kW
43	42	Output active power phase L3	0.1 kW
44	43	Output frequency	0.1*Hz
45÷47	44÷46		
48	47	Battery voltage (lower value between positive and negative)	0.1*V
49	48	Positive battery voltage	0.1*V
50	49	Negative battery voltage	0.1*V
51	50		
52	51	Remaining Battery Capacity	%
53	52	Discharge/Charge (0x30=Discharge / 0x31=Charge)	
54	53	Remaining back-up time	Minutes
55	54	Battery current positive bench	0.1*A
56	55	Battery current negative bench	0.1*A
57÷61	56÷60		
62	61	Internal temperature	°C
63÷65	52÷64		
66	65	Battery temperature positive bench	°C
67	66	Battery temperature negative bench	°C
68	67	External battery temperature	°C
69÷72	68÷71		

REGISTER(1)		NOMINAL DATA	Unit
NUMBER	ADDRESS		
73÷77	72÷76		
78	77	Output nominal voltage	V
79	78	Output nominal frequency	0.1*Hz
80	79	Output nominal power	100*VA
81÷83	80÷82		
84	83	Battery nominal capacity (battery expansion included)	Ah
85	84	Battery benches	(1 or 2)
86÷88	85÷87		

REGISTER(1)		RESERVED	Unit
NUMBER	ADDRESS		
89÷112	88÷111		

REGISTER(1)		COMMANDS		Unit
NUMBER	ADDRESS			
113	112	Command Code: 1 (0x0001) System Shutdown (see also register 114) 2 (0x0002) System Shutdown & Restore (see also register 114/115) 3 (0x0003) Delete Command 1 & 2 6 (0x0006) Power Module OFF (see also register 116) 7 (0x0007) Power Module ON (see also register 116)		Integer
114	113	Shutdown delay time		Seconds
115	114	Restore delay time		Minutes
116	115	High 0x41 CABINET A 0x42 CABINET B 0x43 CABINET C 0x44 CABINET D 0x46 ALL CABINET 0x58 CABINET in which MultiCOM/Netman is placed	Low 0x31 MODULE 1 0x32 MODULE 2 0x33 MODULE 3 0x34 MODULE 4 0x35 MODULE 5 0x36 MODULE 6 0x37 MODULE 7 0x46 ALL MODULE	Integer
117	116			
118	117	Command result: 0x0000+Command Code Command in progress 0x0100+Command Code Command code is wrong 0x0200+Command Code Command is not handled 0x0300+Command Code Parameter out of range (Reg. 116) 0x0E00+Command Code Command sent to MPW		Integer

NOTE: By default, commands are disabled. Commands can be enabled by means of the configuration software reserved for Service personnel only.

To Power ON or OFF one or more modules, first write in register 116, then write command code in register 113. Examples:

Power ON Module 3 in CABINET A: REG. 116 ← 0x4133 / REG. 113 ← 0x0007
Power OFF Module 2 in cabinet B: REG. 116 ← 0x4232 / REG. 113 ← 0x0006
Power ON all Modules in cabinet C: REG. 116 ← 0x4346 / REG. 113 ← 0x0007
Power ON all Modules in all cabinets: REG. 116 ← 0x4646 / REG. 113 ← 0x0007

REGISTER[1]		SYSTEM STATUS		Unit
NUMBER	ADDRESS			
121	120	Status Register 1	Refer to tables below for each register	Flag
122	121	Status Register 2		Flag
123	122	Status Register 3		Flag
124÷128	123÷127			

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Status Register 1		
0 [LSB]	RESERVED	
1	RESERVED	
2	Lost Redundancy	[0=NO / 1=YES]
3	Low Redundancy	[0=NO / 1=YES]
4	RESERVED	
5	Battery Test in progress	[0=NO / 1=YES]
6	Normal operation	[0=NO / 1=YES]
7	RESERVED	
8	Battery not present	[0=NO / 1=YES]
9	Battery anomaly	[0=NO / 1=YES]
10	Monitor Unit fault	[0=NO / 1=YES]
11	Internal battery switch (SWBAT)	[0=OPEN / 1=CLOSED]
12	Battery overtemperature	[0=NO / 1=YES]
13	RESERVED	
14	System Anomaly	[0=NO / 1=YES]
15 [MSb]	System Warning	[0=NO / 1=YES]

Status Register 2		
0 [LSB]	PM warning (one or more module present a warning)	[0=NO / 1=YES]
1	PM anomaly (one or more module present an anomaly)	[0=NO / 1=YES]
2	PM fault (one or more module present a fault)	[0=NO / 1=YES]
3	PM lock (one or more module in lock state)	[0=NO / 1=YES]
4	Overtemperature	[0=NO / 1=YES]
5	Overload	[0=NO / 1=YES]
6	Bypass NOT available	[0=NO / 1=YES]
7	Battery low	[0=NO / 1=YES]
8	Output powered	[0=NO / 1=YES]
9	Battery working	[0=NO / 1=YES]
10	Load on bypass	[0=NO / 1=YES]
11	Line present	[0=NO / 1=YES]
12	Shutdown active	[0=NO / 1=YES]
13	Shutdown imminent	[0=NO / 1=YES]
14	Switch out (SWOUT)	[0=OPEN / 1=CLOSED]
15 [MSb]	Switch manual bypass (SWMB)	[0=OPEN / 1=CLOSED]

Status Register 3		
0 [LSB]	Power Supply Unit 1 fault	[0=NO / 1=YES]
1	Power Supply Unit 2 fault	[0=NO / 1=YES]
2	Switch in (SWIN)	[0=OPEN / 1=CLOSED]
3	Reserved	
4	Switch bypass (SWBYP)	[0=OPEN / 1=CLOSED]
5	Reserved	
6	External battery switch (SWB_EXT)	[0=OPEN / 1=CLOSED]
7	Emergency power off (EPO) active	[0=NO / 1=YES]
8	Reserved	
9	RESERVED	
10	Communication lost by MCU with MU	[0=NO / 1=YES]
11	Communication lost by MCU with BM	[0=NO / 1=YES]
12	Bypass fault	[0=NO / 1=YES]
13	Bypass backfeed alarm active	[0=NO / 1=YES]
14	Replace battery	[0=NO / 1=YES]
15 [MSb]	Reserved	

REGISTER[1]		CABINET[3] ALARMS			BIT[2]	
NUMBER	ADDRESS				NUMBER	ADDRESS
5	4	BAYPASS MODULE	BM Warning	0 = NO 1 = YES	65	64
			BM Anomaly		66	65
			BM Fault		67	66
			BM Lock		68	67
			BM Overtemperature		69	68
			BM Overload		70	69
			BM Backfeed Alarm		71	70
			RESERVED		72	71
		POWER MODULE 1	PM1 Warning	0 = NO 1 = YES	73	72
			PM1 Anomaly		74	73
			PM1 Fault		75	74
			PM1 Lock		76	75
			PM1 Overtemperature		77	76
			PM1 Overload		78	77
			PM1 Bypass line out of range		79	78
			RESERVED		80	79
6	5	POWER MODULE 2	PM2 Warning	0 = NO 1 = YES	81	80
			PM2 Anomaly		82	81
			PM2 Fault		83	82
			PM2 Lock		84	83
			PM2 Overtemperature		85	84
			PM2 Overload		86	85
			PM2 Bypass line out of range		87	86
			RESERVED		88	87
		POWER MODULE 3	PM3 Warning	0 = NO 1 = YES	89	88
			PM3 Anomaly		90	89
			PM3 Fault		91	90
			PM3 Lock		92	91
			PM3 Overtemperature		93	92
			PM3 Overload		94	93
			PM3 Bypass line out of range		95	94
			RESERVED		96	95

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[3] *Data refers to the cabinet in which the MultiCOM/NetMan is placed.*

REGISTER[1]		CABINET[3] ALARMS			BIT[2]	
NUMBER	ADDRESS				NUMBER	ADDRESS
7	6	POWER MODULE 4	PM4 Warning	0 = NO 1 = YES	97	96
			PM4 Anomaly		98	97
			PM4 Fault		99	98
			PM4 Lock		100	99
			PM4 Overtemperature		101	100
			PM4 Overload		102	101
			PM4 Bypass line out of range		103	102
			RESERVED		104	103
		POWER MODULE 5	PM5 Warning	0 = NO 1 = YES	105	104
			PM5 Anomaly		106	105
			PM5 Fault		107	106
			PM5 Lock		108	107
			PM5 Overtemperature		109	108
			PM5 Overload		110	109
			PM5 Bypass line out of range		111	110
			RESERVED		112	111
8	7	POWER MODULE 6	PM6 Warning	0 = NO 1 = YES	113	112
			PM6 Anomaly		114	113
			PM6 Fault		115	114
			PM6 Lock		116	115
			PM6 Overtemperature		117	116
			PM6 Overload		118	117
			PM6 Bypass line out of range		119	118
			RESERVED		120	119
		POWER MODULE 7	PM7 Warning	0 = NO 1 = YES	121	120
			PM7 Anomaly		122	121
			PM7 Fault		123	122
			PM7 Lock		124	123
			PM7 Overtemperature		125	124
			PM7 Overload		126	125
			PM7 Bypass line out of range		127	126
			RESERVED		128	127

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REGISTER[1]		CABINET[3] STATUS		Unit
NUMBER	ADDRESS			
141÷149	140÷148			
150	149	Status Code Bypass Module	Refer to tables below for each register	Integer
151	150	Status Code Power Module 1		Integer
152	151	Status Code Power Module 2		Integer
153	152	Status Code Power Module 3		Integer
154	153	Status Code Power Module 4		Integer
155	154	Status Code Power Module 5		Integer
156	155	Status Code Power Module 6		Integer
157	156	Status Code Power Module 7		Integer

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Status Code Bypass Module	
0x0001	Initialize
0x0002	Bypass Ready
0x0003	Load on Bypass
0x0004	Backfeed Lock
0x0005	Bypass Locked
0x0006	RESERVED
0x0007	RESERVED
0x0008	Bypass Wait
0x00F0	Not Present
0x00F1	Communication Lost

Status Code Power Module	
0x0001	Precharge
0x0002	Stand-by
0x0003	Starting
0x0004	Load on bypass
0x0005	Load on inverter
0x0006	Battery working
0x0007	Wait Vbat ready
0x0008	ECO - MODE
0x0009	RESERVED
0x000A	Lock - Load off
0x000B	Lock - Load on bypass
0x000C	Lock - Stand-by
0x000D	Frequency converter
0x000E	RESERVED
0x000F	RESERVED
0x0010	Calibration
0x0011	Power off active
0x0012	Wait cabinet ID
0x0013	RESERVED
0x0014	RESERVED
0x0015	Energy saving
0x00F0	Not Present
0x00F1	Communication Lost

REGISTER[1]		MultiCOM / NetMan DIAGNOSTIC	Unit
NUMBER	ADDRESS		
119	118	Counter of processed correct messages	Integer
120	119	Counter of processed not correct messages	Integer

REGISTER[1]		MultiCOM / NetMan DATA	Unit
NUMBER	ADDRESS		
129	128	Firmware version	Integer*100
130÷140	129÷139		