ModBus parameter

Software version: 6.23

(dbitem\mb_data.db,v 7.17, inc\mb_arra.h, v 7.24)

Access codes: R = Read, W = Write, C = Clear

Name	Default scaling Device = ModBus	Setting for scaling	Register	Access	VAMP TYPE										NOTE
					40	96	210	230	245	255	257	259	260	265	
Reread event	1 = 1	-	401991-401995	R -	X	X	X	X	X	X	X	X	X	X	Mirror of registers 402490...402494
Events	1 = 1	-	401996-402000	R -	X	X	X	X	X	X	X	X	X	X	Mirror of registers 402101…402105
Alive indicator (0..255, increments once per second)	1 = 1	-	402001	R -	X	X	X	X	X	X	X	X	X	X	
Digital inputs	1 = 1	-	402007	R -	X	X	X	X	X	X	X	X	X	X	
DIs after DI16 for ModBus	1 = 1	-	402008	R -	X	X	X	X	X	X	X	X	X	X	
Phase current IL1	1 A = 1	-	402009	R -	X	X	X	X	X	X	X	X	X	X	
Phase current IL2	1 A = 1	-	402010	R -	X	X	X	X	X	X	X	X	X	X	
Phase current IL3	1 A = 1	-	402011	R -	X	X	X	X	X	X	X	X	X	X	
Io residual current	1.00 A = 100	-	402012	R -	X		X	X	X	X	X	X		X	
Io2 residual current	1.000 A = 1000	-	402013	R -	X		X	X	X	X	X	X		X	
Line voltage U12	1000 V = 1000	Voltage scaling	402014	R -	X	X	X	X		X	X	X	X		
Line voltage U23	1000 V = 1000	Voltage scaling	402015	R -		X	X	X		X	X	X	X		
Line voltage U31	1000 V = 1000	Voltage scaling	402016	R -		X	X	X		X	X	X	X		

Name	Default scaling Device = ModBus	Setting for scaling	Register	Access	VAMP TYPE										NOTE
					40	96	210	230	245	255	257	259	260	265	
Phase voltage UL1	1000 V = 1000	Voltage scaling	402017	R -	X	X	X	X		X	X	X	X		
Phase voltage UL2	1000 V = 1000	Voltage scaling	402018	R -		X	X	X		X	X	X	X		
Phase voltage UL3	1000 V = 1000	Voltage scaling	402019	R -		X	X	X		X	X	X	X		
Residual voltage	1.0 % = 10	-	402020	R -	X	X	X	X	X	X	X	X	X		
Frequency	50.00 Hz = 5000	Frequency scaling	402021	R -	X	X	X	X		X	X	X	X		
Active power	1000 kW = 1000	Power scaling	402022	R -	X	X	X	X		X	X	X	X		
Reactive power	1000 kvar = 1000	Power scaling	402023	R -	X	X	X	X		X	X	X	X		
Apparent power	1000 kVA = 1000	Power scaling	402024	R -	X	X	X	X		X	X	X	X		
Power factor	1.00 = 100	PF and cos scaling	402025	R -	X	X	X	X		X	X	X	X		
Energy Eexp	1 = 1	-	402026	R -	X	X	X	X		X	X	X	X		
Eexp/10^4	10^4 = 1	-	402027	R -	X	X	X	X		X	X	X	X		
Eexp/10^8	10^8 = 1	-	402028	R -	X	X	X	X		X	X	X	X		
Energy EqExp	1 = 1	-	402029	R -	X	X	X	X		X	X	X	X		
EqExp/10^4	10^4 = 1	-	402030	R -	X	X	X	X		X	X	X	X		
EqExp/10^8	10^8 = 1	-	402031	R -	X	X	X	X		X	X	X	X		
Energy Eimp	1 = 1	-	402032	R -	X	X	X	X		X	X	X	X		
Eimp/10^4	10^4 = 1	-	402033	R -	X	X	X	X		X	X	X	X		
Eimp/10^8	10^8 = 1	-	402034	R -	X	X	X	X		X	X	X	X		
Energy EqImp	1 = 1	-	402035	R -	X	X	X	X		X	X	X	X		
EqImp/10^4	10^4 = 1	-	402036	R -	X	X	X	X		X	X	X	X		
EqImp/10^8	10^8 = 1	-	402037	R -	X	X	X	X		X	X	X	X		

Name	Default scaling Device = ModBus	Setting for scaling	Register	Access	VAMP TYPE										NOTE
					40	96	210	230	245	255	257	259	260	265	
Tan phii	1.000 = 1000	Tan phii scaling	402038	R -	X	X	X	X		X	X	X	X		
Phase current IL	1 A = 1	-	402039	R -	X	X	X	X		X	X	X	X		
Average line voltage	1000 V = 1000	Voltage scaling	402040	R -	X	X	X	X		X	X	X	X		
Average phase voltage	1000 V = 1000	Voltage scaling	402041	R -	X	X	X	X		X	X	X	X		
Obj1 state	Open=0, Close=1, Undef=2	-	402042	R -	X	X	X	X	X	X	X	X	X	X	
Obj2 state	Open=0, Close=1, Undef=2	-	402043	R -	X	X	X	X	X	X	X	X	X	X	
Obj3 state	Open=0, Close=1, Undef=2	-	402044	R -	X	X	X	X	X	X	X	X	X	X	
Obj4 state	Open=0, Close=1, Undef=2	-	402045	R -	X	X	X	X	X	X	X	X	X	X	
Obj5 state	Open=0, Close=1, Undef=2	-	402046	R -	X	X	X	X	X	X	X	X	X	X	
Obj6 state0020	Open=0, Close=1, Undef=2	-	402047	R -	X	X	X	X	X	X	X	X	X	X	

Name	Default scaling Device = ModBus	Setting for scaling	Register	Access	VAMP TYPE										NOTE
					40	96	210	230	245	255	257	259	260	265	
Remote/Local State	REMOTE=0, LOCAL=1	-	402048	R W	X	X	X	X	X	X	X	X	X	X	
Output relays	1 = 1	-	402049	R -	X	X	X	X	X	X	X	X	X	X	
Obj7 state	Open=0, Close=1, Undef=2	-	402050	R -	X	X	X	X	X	X	X	X	X	X	
Obj8 state	Open=0, Close=1, Undef=2	-	402051	R -	X	X	X	X	X	X	X	X	X	X	
Digital inputs 21 … 32 DI21 = bit0 DI27 = bit6 DI22 = bit1 DI28 = bit7 DI23 = bit2 DI29 = bit8 DI24 = bit3 DI30 = bit9 DI25 = bit4 DI31 = bit10 DI26 = bit5 DI32 = bit11	1 = 1	-	402052	R -							X	X			
Running hours, low word, 0..9999 h	1 h =1	-	402057	R -	X	X	X	X	X	X	X	X	X	X	
Running hours, high word, 0..9999x10⁴ h	10000 h =1	-	402058	R -	X	X	X	X	X	X	X	X	X	X	
Seconds of running hour counter, 0..3590	1 s =1	-	402059	R -	X	X	X	X	X	X	X	X	X	X	
Start counter for run hour counter	1 =1	-	402060	R -	X	X	X	X	X	X	X	X	X	X	

Name	Default scaling Device = ModBus	Setting for scaling	Register	Access	VAMP TYPE										NOTE
					40	96	210	230	245	255	257	259	260	265	
Phase current I'L1	1 A = 1	-	402061	R -										X	
Phase current I'L2	1 A = 1	-	402062	R -										X	
Phase current I'L3	1 A = 1	-	402063	R -										X	
IL1 difference	1.00 x In = 100	-	402064	R -										X	
IL2 difference	1.00 x In = 100	-	402065	R -										X	
IL3 difference	1.00 x In = 100	-	402066	R -										X	
Events	1 = 1	-	402101...402105	R -	X	X	X	X	X	X	X	X	X	X	
Event code		-	402101		X	X	X	X	X	X	X	X	X	X	Event codes doc.
Event time stamp bits 15-6 = milliseconds bits 5-0 = seconds		-	402102		X	X	X	X	X	X	X	X	X	X	
Event time stamp upper byte = minute lower byte = hour		-	402103		X	X	X	X	X	X	X	X	X	X	
Event time stamp upper byte = day lower byte = month		-	402104		X	X	X	X	X	X	X	X	X	X	
Event time stamp, year		-	402105		X	X	X	X	X	X	X	X	X	X	
Latest fault current	1.00 xIn = 100	-	402110	RW	X		X	X	X	X	X	X		X	
Fault current I>	1.00 xIn = 100	-	402111	R -	X		X	X	X	X	X	X		X	
Fault current I>>	1.00 xIn = 100	-	402112	R -	X		X	X	X	X	X	X		X	
Fault current I>>>	1.00 xIn = 100	-	402113	R -	X		X	X	X	X	X	X		X	
Fault reactance	1.00 ohm = 100	-	402115	R -				X		X	X	X			

Name	Default scaling Device = ModBus	Setting for scaling	Register	Access	VAMP TYPE										NOTE
					40	96	210	230	245	255	257	259	260	265	
Alarm L1,L2,L3 state Bit 0 = L1 Bit 1 = L2 Bit 2 = L3 state	1 = 1	-	402121	R -	X		X	X	X	X	X	X		X	
Trip L1,L2,L3 state Bit 0 = L1 Bit 1 = L2 Bit 2 = L3 state	1 = 1	-	402122	R -	X		X	X	X	X	X	X		X	
Diagnostic register 1	1 = 1	-	402191	R -	X	X	X	X	X	X	X	X	X	X	
Diagnostic register 2	1 = 1	-	402192	R -	X	X	X	X	X	X	X	X	X	X	
Diagnostic register 3	1 = 1	-	402193	R -	X	X	X	X	X	X	X	X	X	X	
Diagnostic register 4	1 = 1	-	402194	R -	X	X	X	X	X	X	X	X	X	X	
HARMONICS of IL1 402201 = dc component 402202 = 1. harmonic … 402216 = 15. harmonic	1 % = 1	-	402201...402216	R -	X	X	X	X	X	X	X	X	X	X	
HARMONICS of IL2	1 % = 1	-	402221...402236	R -	X	X	X	X	X	X	X	X	X	X	
HARMONICS of IL3	1 % = 1	-	402241...402256	R -	X	X	X	X	X	X	X	X	X	X	
HARMONICS of Ua	1 % = 1	-	402301...402316	R -	X	X	X	X	X	X	X	X	X		
HARMONICS of Ub	1 % = 1	-	402321...402336	R -		X	X	X		X	X	X	X		
HARMONICS of Uc	1 % = 1	-	402341...402356	R -		X	X	X		X	X	X	X		
HARMONICS of I'L1	1 % = 1	-	402401...402416	R -										X	
HARMONICS of I'L2	1 % = 1	-	402421...402436	R -										X	
HARMONICS of I'L3	1 % = 1	-	402441...402456	R -										X	

Name	Default scaling Device = ModBus	Setting for scaling	Register	Access	VAMP TYPE										NOTE
					40	96	210	230	245	255	257	259	260	265	
Reread event	1 = 1	-	402490...402494	R -	X	X	X	X	X	X	X	X	X	X	
Release latches	Release=1	-	402501	R W	X	X	X	X	X	X	X	X	X	X	
Synchronize minutes (0 .. 59)	1 = 1	-	402502	R W	X	X	X	X	X	X	X	X	X	X	
Set RTC (Real time clock) 2504 = seconds (1s = 1) 2505 MSB = minutes 2505 LSB= hours (1:02=513) 2506 MSB = day 2506 LSB = month (Feb 1st=258) 2507 = year (2000 = 2000)	1 = 1	-	402504...402507	- W	X	X	X	X	X	X	X	X	X	X	
Open select Obj1	1 = 1	-	402508	R W	X	X	X	X	X	X	X	X	X	X	
Close select Obj1	1 = 1	-	402509	R W	X	X	X	X	X	X	X	X	X	X	
Execute operation Obj1	1 = 1	-	402510	- W	X	X	X	X	X	X	X	X	X	X	
Max ctrl pulse length of Obj1	1.00 s = 100	-	402511	R W	X	X	X	X	X	X	X	X	X	X	
Open select Obj2	1 = 1	-	402512	R W	X	X	X	X	X	X	X	X	X	X	
Close select Obj2	1 = 1	-	402513	R W	X	X	X	X	X	X	X	X	X	X	
Execute operation Obj2	1 = 1	-	402514	- W	X	X	X	X	X	X	X	X	X	X	
Max ctrl pulse length of Obj2	1.00 s = 100	-	402515	R W	X	X	X	X	X	X	X	X	X	X	
Open select Obj3	1 = 1	-	402517	R W	X	X	X	X	X	X	X	X	X	X	

Name	Default scaling Device = ModBus	Setting for scaling	Register	Access	VAMP TYPE										NOTE
					40	96	210	230	245	255	257	259	260	265	
Close select Obj3	1 = 1	-	402518	R W	X	X	X	X	X	X	X	X	X	X	
Execute operation Obj3	1 = 1	-	402519	- W	X	X	X	X	X	X	X	X	X	X	
Max ctrl pulse length of Obj3	1.00 s = 100	-	402520	R W	X	X	X	X	X	X	X	X	X	X	
Open select Obj4	1 = 1	-	402521	R W	X	X	X	X	X	X	X	X	X	X	
Close select Obj4	1 = 1	-	402522	R W	X	X	X	X	X	X	X	X	X	X	
Execute operation Obj4	1 = 1	-	402523	- W	X	X	X	X	X	X	X	X	X	X	
Max ctrl pulse length of Obj4	1.00 s = 100	-	402524	R W	X	X	X	X	X	X	X	X	X	X	
Open select Obj5	1 = 1	-	402527	R W	X	X	X	X	X	X	X	X	X	X	
Close select Obj5	1 = 1	-	402528	R W	X	X	X	X	X	X	X	X	X	X	
Execute operation Obj5	1 = 1	-	402529	- W	X	X	X	X	X	X	X	X	X	X	
Max ctrl pulse length of Obj5	1.00 s = 100	-	402530	R W	X	X	X	X	X	X	X	X	X	X	
Open select Obj6	1 = 1	-	402531	R W	X	X	X	X	X	X	X	X	X	X	
Close select Obj6	1 = 1	-	402532	R W	X	X	X	X	X	X	X	X	X	X	
Execute operation Obj6	1 = 1	-	402533	- W	X	X	X	X	X	X	X	X	X	X	
Max ctrl pulse length of Obj6	1.00 s = 100	-	402534	R W	X	X	X	X	X	X	X	X	X	X	
Reset Diagnostics	1 = 1	-	402535	R W	X	X	X	X	X	X	X	X	X	X	
Clear MinMax	1 = 1	-	402536	R W	X	X	X	X	X	X	X	X	X	X	
Ambient temperature	1 °C = 1	-	402525	R W	X		X	X	X	X	X	X		X	MOTOR
SetGrp common change	1=0,2=1	-	402526	R W	X		X	X	X	X	X	X		X	

Name	Default scaling Device = ModBus	Setting for scaling	Register	Access	VAMP TYPE										NOTE
					40	96	210	230	245	255	257	259	260	265	
Cancel selected operation	1 = 1	-	402516	- W	X		X	X	X	X	X	X		X	
Pos. sequence I1	1 A = 1	-	403001	R -	X	X	X	X	X	X	X	X	X	X	
Neg. sequence I2	1 A = 1	-	403002	R -	X	X	X	X	X	X	X	X	X	X	
Current -seq./+seq.	1.0 % = 10	-	403003	R -	X	X	X	X	X	X	X	X	X	X	
Current phase seq.	??=0, OK=1, Reverse=2	-	403004	R -	X	X	X	X	X	X	X	X	X	X	
Phase current THD	1.0 % = 10	-	403005	R -	X	X	X	X	X	X	X	X	X	X	
IL1 THD	1.0 % = 10	-	403006	R -	X	X	X	X	X	X	X	X	X	X	
IL2 THD	1.0 % = 10	-	403007	R -	X	X	X	X	X	X	X	X	X	X	
IL3 THD	1.0 % = 10	-	403008	R -	X	X	X	X	X	X	X	X	X	X	
Phase current IL	1 A = 1	-	403009	R -	X	X	X	X	X	X	X	X	X	X	
Min. of IL1 IL2 IL3	1 A = 1	-	403010	R -	X	X	X	X	X	X	X	X	X	X	
Max. of IL1 IL2 IL3	1 A = 1	-	403011	R -	X	X	X	X	X	X	X	X	X	X	
Phase current ILRMS	1 Arms = 1	-	403012	R -	X	X	X	X	X	X	X	X	X	X	
Phase current IL1RMS	1 Arms = 1	-	403015	R -	X	X	X	X	X	X	X	X	X	X	
Phase current IL2RMS	1 Arms = 1	-	403016	R -	X	X	X	X	X	X	X	X	X	X	
Phase current IL3RMS	1 Arms = 1	-	403017	R -	X	X	X	X	X	X	X	X	X	X	
Temperature rise	1.0 % = 10	-	403018	R W	X	X	X	X	X	X	X	X	X	X	
Ambient temperature	1 °C = 1	-	403019	R W	X		X	X	X	X	X	X		X	MOTOR
IL1da, 15min average	1 A = 1	-	403020	R -	X	X	X	X	X	X	X	X	X	X	
IL2da, 15min average	1 A = 1	-	403021	R -	X	X	X	X	X	X	X	X	X	X	
IL3da, 15min average	1 A = 1	-	403022	R -	X	X	X	X	X	X	X	X	X	X	

Name	Default scaling Device = ModBus	Setting for scaling	Register	Access	VAMP TYPE										NOTE
					40	96	210	230	245	255	257	259	260	265	
IoC, 15min average	1.00 pu = 100	-	403023	R -	X	X	X	X	X	X	X	X	X	X	
Io, 15min average	1.000 pu =	-	403024	R -	X		X	X	X	X	X	X		X	
Io2, 15min average	1.000 pu =	-	403025	R -	X		X	X	X	X	X	X		X	
Current I' –seq./+seq.	1.0 % = 10	-	403153	R -										X	
Current I' phase seq.	??=0, OK=1, Reverse=2	-	403154	R -										X	
Phase current I' THD	1.0 % = 10	-	403155	R -										X	
I'L1 THD	1.0 % = 10	-	403156	R -										X	
I'L2 THD	1.0 % = 10	-	403157	R -										X	
I'L3 THD	1.0 % = 10	-	403158	R -										X	
Phase current I'L	1 A = 1	-	403159	R -										X	
Min. of I'L1 I'L2 I'L3	1 A = 1	-	403160	R -										X	
Max. of I'L1 I'L2 I'L3	1 A = 1	-	403161	R -										X	
Phase current I'LRMS	1 Arms = 1	-	403162	R -										X	
Phase current I'L1RMS	1 Arms = 1	-	403165	R -										X	
Phase current I'L2RMS	1 Arms = 1	-	403166	R -										X	
Phase current I'L3RMS	1 Arms = 1	-	403167	R -										X	
-seq. voltage U2	1000 V = 1000	Voltage scaling	403032	R -	X	X	X	X		X	X	X	X		
Voltage -seq./+seq.	1.0 % = 10	-	403033	R -	X	X	X	X		X	X	X	X		
Voltage phase seq.	??=0, OK=1, Reverse=2	-	403034	R -	X	X	X	X		X	X	X	X		

Name	Default scaling Device = ModBus	Setting for scaling	Register	Access	VAMP TYPE										NOTE
					40	96	210	230	245	255	257	259	260	265	
Voltage THD	1.0 % = 10	-	403035	R -		X	X	X		X	X	X	X		
Ua THD	1.0 % = 10	-	403036	R -	X	X	X	X	X	X	X	X	X		
Ub THD	1.0 % = 10	-	403037	R -		X	X	X		X	X	X	X		
Uc THD	1.0 % = 10	-	403038	R -		X	X	X		X	X	X	X		
Average line voltage	1000 V = 1000	Voltage scaling	403039	R -	X	X	X	X		X	X	X	X		
Min of line voltages	1000 V = 1000	Voltage scaling	403040	R -	X	X	X	X		X	X	X	X		
Max of line voltages	1000 V = 1000	Voltage scaling	403041	R -	X	X	X	X		X	X	X	X		
Average phase voltage	1000 V = 1000	Voltage scaling	403042	R -	X	X	X	X		X	X	X	X		
UL_MinOf3	1000 V = 1000	Voltage scaling	403043	R -		X	X	X		X	X	X	X		
UL_MaxOf3	1000 V = 1000	Voltage scaling	403044	R -		X	X	X		X	X	X	X		
Voltage mean RMS	1000 Vrms =	Voltage scaling	403045	R -		X	X	X		X	X	X	X		
Input voltage Ua RMS	1000 Vrms =	Voltage scaling	403048	R -	X	X	X	X	X	X	X	X	X		
Input voltage Ub RMS	1000 Vrms =	Voltage scaling	403049	R -		X	X	X		X	X	X	X		
Input voltage Uc RMS	1000 Vrms =	Voltage scaling	403050	R -		X	X	X		X	X	X	X		
U12, 15min average	1000 V = 1000	Voltage scaling	403051	R -	X	X	X	X		X	X	X	X		
U23, 15min average	1000 V = 1000	Voltage scaling	403052	R -		X	X	X		X	X	X	X		
U31, 15min average	1000 V = 1000	Voltage scaling	403053	R -		X	X	X		X	X	X	X		
UL1, 15min average	1000 V = 1000	Voltage scaling	403054	R -	X	X	X	X		X	X	X	X		
UL2, 15min average	1000 V = 1000	Voltage scaling	403055	R -		X	X	X		X	X	X	X		
UL3, 15min average	1000 V = 1000	Voltage scaling	403056	R -		X	X	X		X	X	X	X		
Cosine phii	1.00 = 100	PF and cos scaling	403058	R -	X	X	X	X		X	X	X	X		
Tan phii	1.000 = 1000	Tan phii scaling	403059	R -	X	X	X	X		X	X	X	X		

Name	Default scaling Device = ModBus	Setting for scaling	Register	Access	VAMP TYPE										NOTE
					40	96	210	230	245	255	257	259	260	265	
Power angle	1 ° = 1	-	403060	R -	X	X	X	X		X	X	X	X		
RMS active power	1000 kW = 1000	Power scaling	403061	R -		X	X	X		X	X	X	X		
RMS reactive power	1000 kvar = 1000	Power scaling	403062	R -		X	X	X		X	X	X	X		
RMS apparent power	1000 kVA = 1000	Power scaling	403063	R -		X	X	X		X	X	X	X		
Active power, 15min average	1000 kW = 1000	Power scaling	403066	R -	X	X	X	X		X	X	X	X		
Reactive power, 15min average	1000 kvar = 1000	Power scaling	403067	R -	X	X	X	X		X	X	X	X		
Apparent power, 15min average	1000 kVA = 1000	Power scaling	403068	R -	X	X	X	X		X	X	X	X		
Power factor, 15min average	1.00 = 100	PF and cos scaling	403069	R -	X	X	X	X		X	X	X	X		
RMS active power, 15min average	1000 kW = 1000	Power scaling	403071	R -		X	X	X		X	X	X	X		
RMS reactive power, 15min average	1000 kvar = 1000	Power scaling	403072	R -		X	X	X		X	X	X	X		
RMS apparent power, 15min average	1000 kVA = 1000	Power scaling	403073	R -		X	X	X		X	X	X	X		
Phase L1 active power	1000 kW = 1000	Power scaling	403081	R -	X	X	X	X		X	X	X	X		

Name	Default scaling Device = ModBus	Setting for scaling	Register	Access	VAMP TYPE										NOTE
					40	96	210	230	245	255	257	259	260	265	
Phase L2 active power	1000 kW = 1000	Power scaling	403082	R -		X	X	X		X	X	X	X		
Phase L3 active power	1000 kW = 1000	Power scaling	403083	R -		X	X	X		X	X	X	X		
Phase L1 reactive power	1000 kvar = 1000	Power scaling	403084	R -	X	X	X	X		X	X	X	X		
Phase L2 reactive power	1000 kvar = 1000	Power scaling	403085	R -		X	X	X		X	X	X	X		
Phase L3 reactive power	1000 kvar = 1000	Power scaling	403086	R -		X	X	X		X	X	X	X		
Phase L1 apparent power	1000 kVA = 1000	Power scaling	403087	R -	X	X	X	X		X	X	X	X		
Phase L2 apparent power	1000 kVA = 1000	Power scaling	403088	R -		X	X	X		X	X	X	X		
Phase L3 apparent power	1000 kVA = 1000	Power scaling	403089	R -		X	X	X		X	X	X	X		
Cosine of phase L1	1.00 = 100	PF and cos scaling	403090	R -	X	X	X	X		X	X	X	X		
Cosine of phase L2	1.00 = 100	PF and cos scaling	403091	R -		X	X	X		X	X	X	X		
Cosine of phase L3	1.00 = 100	PF and cos scaling	403092	R -		X	X	X		X	X	X	X		
Frequency fy (synchrocheck side y)	50.00 Hz = 5000	Frequency scaling	403101	R -				X		X	X	X			Synchrocheck
Line voltage U12y (sync. Side y)	1000 V = 1000	Voltage scaling	403102	R -				X		X	X	X			Synchrocheck

Name	Default scaling Device = ModBus	Setting for scaling	Register	Access	VAMP TYPE										NOTE
					40	96	210	230	245	255	257	259	260	265	
Synchrocheck 1 angle difference	1° = 1	-	403103	R -				X		X	X	X			Synchrocheck
Frequency fz (synchrocheck side z)	50.00 Hz = 5000	Frequency scaling	403101	R -				X		X	X	X			Synchrocheck
Line voltage U12z (sync. Side z)	1000 V = 1000	Voltage scaling	403102	R -				X		X	X	X			Synchrocheck
Synchrocheck 2 angle difference	1° = 1	-	403103	R -				X		X	X	X			Synchrocheck
Pos. sequence I'1	1A = 1	-	403151	R -										X	
Neg. sequence I'1	1A = 1	-	403152	R -										X	
Current I' –seq./+seq.	1.0% = 10	-	403153	R -										X	
Current I' phase seq.	??=0, OK=1, Reverse=2	-	403154	R -										X	
Phase current I'THD	1.0% = 10	-	403155	R -										X	
I'L1 THD	1.0% = 10	-	403156	R -										X	
I'L2 THD	1.0% = 10	-	403157	R -										X	
I'L3 THD	1.0% = 10	-	403158	R -										X	
Phase current I'L	1A = 1	-	403159	R -										X	
Min. of I'L1 I'L2 I'L3	1A = 1	-	403160	R -										X	
Max. of I'L1 I'L2 I'L3	1A = 1	-	403161	R -										X	
Phase current I'Lrms	1Arms = 1	-	402162	R -										X	
Phase current I'L1rms	1Arms = 1	-	402165	R -										X	
Phase current I'L2rms	1Arms = 1	-	402166	R -										X	
Phase current I'L3rms	1Arms = 1	-	402167	R -										X	

Name	Default scaling Device = ModBus	Setting for scaling	Register	Access	VAMP TYPE										NOTE
					40	96	210	230	245	255	257	259	260	265	
DI1 counter	1 = 1	-	403301	R W	X		X	X	X	X	X	X		X	
DI2 counter	1 = 1	-	403302	R W	X		X	X	X	X	X	X		X	
DI3 counter	1 = 1	-	403303	R W			X	X	X	X	X	X		X	
DI4 counter	1 = 1	-	403304	R W			X	X	X	X	X	X		X	
DI5 counter	1 = 1	-	403305	R W			X	X	X	X	X	X		X	
DI6 counter	1 = 1	-	403306	R W			X	X	X	X	X	X		X	
DI7 counter	1 = 1	-	403307	R W						X	X	X			
DI8 counter	1 = 1	-	403308	R W						X	X	X			
DI9 counter	1 = 1	-	403309	R W						X	X	X			
DI10 counter	1 = 1	-	403310	R W						X	X	X			
DI11 counter	1 = 1	-	403311	R W						X	X	X			
DI12 counter	1 = 1	-	403312	R W						X	X	X			
DI13 counter	1 = 1	-	403313	R W						X	X	X			
DI14 counter	1 = 1	-	403314	R W						X	X	X			
DI15 counter	1 = 1	-	403315	R W						X	X	X			
DI16 counter	1 = 1	-	403316	R W						X	X	X			
DI17 counter	1 = 1	-	403317	R W						X	X	X			
DI18 counter	1 = 1	-	403318	R W						X	X	X			
DI19 counter	1 = 1	-	403319	R W				X	X	X	X	X			Optional DI19/DI20 card
DI20 counter	1 = 1	-	403320	R W				X	X	X	X	X			
DI21 counter	1 = 1	-	403350	R W							X	X			
DI22 counter	1 = 1	-	403351	R W							X	X			
DI23 counter	1 = 1	-	403352	R W							X	X			
DI24 counter	1 = 1	-	403353	R W							X	X			
DI25 counter	1 = 1	-	403354	R W							X	X			
DI26 counter	1 = 1	-	403355	R W							X	X			
DI27 counter	1 = 1	-	403356	R W							X	X			

Name	Default scaling Device = ModBus	Setting for scaling	Register	Access	VAMP TYPE										NOTE
					40	96	210	230	245	255	257	259	260	265	
DI28 counter	1 = 1	-	403357	R W							X	X			
DI29 counter	1 = 1	-	403358	R W							X	X			
DI30 counter	1 = 1	-	403359	R W							X	X			
DI31 counter	1 = 1	-	403360	R W							X	X			
DI32 counter	1 = 1	-	403361	R W							X	X			
Shot1 start counter	1 = 1	-	403331	R C	X			X	X	X	X	X			
Shot2 start counter	1 = 1	-	403332	R C	X			X	X	X	X	X			
Shot3 start counter	1 = 1	-	403333	R C	X			X	X	X	X	X			
Shot4 start counter	1 = 1	-	403334	R C	X			X	X	X	X	X			
Shot5 start counter	1 = 1	-	403335	R C	X			X	X	X	X	X			
AR start counter	1 = 1	-	403336	R C	X			X	X	X	X	X			
AR fail counter	1 = 1	-	403337	R C	X			X	X	X	X	X			
AR shot number	1,2,3,4,5,END=6	-	403402	R -	X			X	X	X	X	X			
Critical AR req.	1 = 1	-	403403	R -	X			X	X	X	X	X			
Reclose locked	1 = 1	-	403404	R -	X			X	X	X	X	X			
Reclose running	1 = 1	-	403405	R -	X			X	X	X	X	X			
Final trip	1 = 1	-	403406	R -	X			X	X	X	X	X			
Autoreclose on	1 = 1	-	403407	R -	X			X	X	X	X	X			
Motor starting	1 = 1	-	403411	R -	X			X	X	X	X	X			MOTOR
Motor running	1 = 1	-	403412	R -	X			X	X	X	X	X			MOTOR

Name	Default scaling Device = ModBus	Setting for scaling	Register	Access	VAMP TYPE										NOTE
					40	96	210	230	245	255	257	259	260	265	
Voltage interrupt	LOW=0, ok=1	-	403413	R -	X	X	X	X		X	X	X	X		
Voltage status	OK=0, LOW=1, HIGH=2, LOW/HIGH=3, (OK)=4, (LOW)=5, (HIGH)=6, (LOW)/HIGH=7	-	403414	R -	X	X	X	X		X	X	X	X		
Timer 1 status	0=1,1=2	-	403415	R W	X	X	X	X	X	X	X	X	X	X	
Timer 2 status	0=1,1=2	-	403416	R W	X	X	X	X	X	X	X	X	X	X	
Timer 3 status	0=1,1=2	-	403417	R W	X	X	X	X	X	X	X	X	X	X	
Timer 4 status	0=1,1=2	-	403418	R W	X	X	X	X	X	X	X	X	X	X	
Logic output states 1…10	1 = 1	-	403419	R -	X	X	X	X	X	X	X	X	X	X	
CBWEAR: Alarm 1	1 = 1	-	403420	R -	X		X	X	X	X	X	X		X	
CBWEAR: Alarm 2	1 = 1	-	403421	R -	X		X	X	X	X	X	X		X	
Logic output states 9…16	1 = 1	-	403422	R -	X	X	X	X	X	X	X	X	X	X	
Logic output states 17…20	1 = 1	-	403423	R -	X	X	X	X	X	X	X	X	X	X	
Virtual outputs	1 = 1	-	403426	R -	X	X	X	X	X	X	X	X	X	X	
Virtual input 1	0,1	-	403427	R W	X	X	X	X	X	X	X	X	X	X	
Virtual input 2	0,1	-	403428	R W	X	X	X	X	X	X	X	X	X	X	
Virtual input 3	0,1	-	403429	R W	X	X	X	X	X	X	X	X	X	X	

Name	Default scaling Device = ModBus	Setting for scaling	Register	Access	VAMP TYPE										NOTE
					40	96	210	230	245	255	257	259	260	265	
Virtual input 4	0,1	-	403430	R W	X	X	X	X	X	X	X	X	X	X	
Synchrochek 1 request	1 = 1	-	403431	R -				X		X	X	X			Synchrocheck
Synchrocheck 1 OK state	1 = 1	-	403432	R -				X		X	X	X			Synchrocheck
Synchrocheck 1 bypass	1 = 1	-	403433	R W				X		X	X	X			Synchrocheck
Synchrochec 1 fail state	1 = 1	-	403434	R -				X		X	X	X			Synchrocheck
Synchrochek 2 request	1 = 1	-	403441	R -				X		X	X	X			Synchrocheck
Synchrocheck 2 OK state	1 = 1	-	403442	R -				X		X	X	X			Synchrocheck
Synchrocheck 2 bypass	1 = 1	-	403443	R W				X		X	X	X			Synchrocheck
Synchrochec 2 fail state	1 = 1	-	403444	R -				X		X	X	X			Synchrocheck
Logic 1 counter	1 = 1	-	403451	R W	X	X	X	X	X	X	X	X	X	X	
Logic 2 counter	1 = 1	-	403452	R W	X	X	X	X	X	X	X	X	X	X	
Logic 3 counter	1 = 1	-	403453	R W	X	X	X	X	X	X	X	X	X	X	
Logic 4 counter	1 = 1	-	403454	R W	X	X	X	X	X	X	X	X	X	X	
Logic 5 counter	1 = 1	-	403455	R W	X	X	X	X	X	X	X	X	X	X	
Logic 6 counter	1 = 1	-	403456	R W	X	X	X	X	X	X	X	X	X	X	
External analog input 1	1.00 = 100	-	403500	R -	X	X	X	X	X	X	X	X	X	X	ModBusIO
External analog input 2	1.00 = 100	-	403501	R -	X	X	X	X	X	X	X	X	X	X	ModBusIO
..					X	X	X	X	X	X	X	X	X	X	ModBusIO
External analog input 16	1.00 = 100	-	403515	R -	X	X	X	X	X	X	X	X	X	X	ModBusIO
External digital input 1	1 = 1	-	403600	R -	X	X	X	X	X	X	X	X	X	X	ModBusIO
External digital input 2	1 = 1	-	403601	R -	X	X	X	X	X	X	X	X	X	X	ModBusIO
..					X	X	X	X	X	X	X	X	X	X	ModBusIO

Name	Default scaling Device = ModBus	Setting for scaling	Register	Access	VAMP TYPE										NOTE
					40	96	210	230	245	255	257	259	260	265	
External digital input 18	1 = 1	-	403617	R -	X	X	X	X	X	X	X	X	X	X	ModBusIO
Min. frequency	50.000Hz =50000	Frequency scaling	404001	R -	X	X	X	X		X	X	X	X		
Min. of active power	1000 kW =	Power scaling	404002	R -	X	X	X	X		X	X	X	X		
Min. of reactive power	1000 kvar = 1000	Power scaling	404003	R -	X	X	X	X		X	X	X	X		
Min. of apparent power	1000 kVA = 1000	Power scaling	404004	R -	X	X	X	X		X	X	X	X		
Min. of power factor	1.00 = 100	PF and cos scaling	404005	R -	X	X	X	X		X	X	X	X		
Min. of Io1	1.0% = 10	-	404006	R -	X		X	X	X	X	X	X		X	
Min. of Io2	1.0% = 10	-	404007	R -	X		X	X	X	X	X	X		X	
Min. of P 15min	1000 kW =	Power scaling	404008	R -	X	X	X	X		X	X	X	X		
Min. of Q 15min	1000 kvar = 1000	Power scaling	404009	R -	X	X	X	X		X	X	X	X		
Min. of S 15min	1000 kVA = 1000	Power scaling	404010	R -	X	X	X	X		X	X	X	X		
Min. of PF 15min	1.00 = 100	PF and cos scaling	404011	R -	X	X	X	X		X	X	X	X		
Min. of Prms 15min	1000 kW =	Power scaling	404012	R -	X	X	X	X		X	X	X	X		
Min. of Qrms 15min	1000 kvar = 1000	Power scaling	404013	R -	X	X	X	X		X	X	X	X		
Min. of Srms 15min	1000 kVA = 1000	Power scaling	404014	R -	X	X	X	X		X	X	X	X		
Min. of IL1	1A = 1	-	404015	R -	X	X	X	X	X	X	X	X	X	X	
Min. of IL2	1A = 1	-	404016	R -	X	X	X	X	X	X	X	X	X	X	
Min. of IL3	1A =1	-	404017	R -	X	X	X	X	X	X	X	X	X	X	
Min. of IL1rms	1Arms =1	-	404018	R -	X	X	X	X	X	X	X	X	X	X	
Min. of IL2rms	1Arms =1	-	404019	R -	X	X	X	X	X	X	X	X	X	X	

Name	Default scaling Device = ModBus	Setting for scaling	Register	Access	VAMP TYPE										NOTE
					40	96	210	230	245	255	257	259	260	265	
Min. of IL3rms	1Arms =1	-	404020	R -	X	X	X	X	X	X	X	X	X	X	
Min. of IL1 15min	1A = 1	-	404021	R -	X	X	X	X	X	X	X	X	X	X	
Min. of IL2 15min	1A = 1	-	404022	R -	X	X	X	X	X	X	X	X	X	X	
Min. of IL3 15min	1A =1	-	404023	R -	X	X	X	X	X	X	X	X	X	X	
Min. of IL1rms 15min	1Arms =1	-	404024	R -	X	X	X	X	X	X	X	X	X	X	
Min. of IL2rms 15min	1Arms =1	-	404025	R -	X	X	X	X	X	X	X	X	X	X	
Min. of IL3rms 15min	1Arms =1	-	404026	R -	X	X	X	X	X	X	X	X	X	X	
Min. of U12	1000 V = 1000	Voltage scaling	404030	R -	X	X	X	X		X	X	X	X		
Min. of U23	1000 V = 1000	Voltage scaling	404031	R -		X	X	X		X	X	X	X		
Min. of U31	1000 V = 1000	Voltage scaling	404032	R -		X	X	X		X	X	X	X		
Max. frequency	50.000Hz	Frequency scaling	404101	R -	X	X	X	X		X	X	X	X		
Max. of active power	1000 kW =	Power scaling	404102	R -	X	X	X	X		X	X	X	X		
Max. of reactive power	1000 kvar =	Power scaling	404103	R -	X	X	X	X		X	X	X	X		
Max. of apparent power	1000 kVA =	Power scaling	404104	R -	X	X	X	X		X	X	X	X		
Max. of power factor	1.00 = 100	PF and cos scaling	404105	R -	X	X	X	X		X	X	X	X		
Max. of Io1	1.0% = 10	-	404106	R -	X		X	X	X	X	X	X		X	
Max. of Io2	1.0% = 10	-	404107	R -	X		X	X	X	X	X	X		X	
Max. of P 15min	1000 kW =	Power scaling	404108	R -	X	X	X	X		X	X	X	X		
Max. of Q 15min	1000 kvar =	Power scaling	404109	R -	X	X	X	X		X	X	X	X		
Max. of S 15min	1000 kVA =	Power scaling	404110	R -	X	X	X	X		X	X	X	X		
Max. of PF 15min	1.00 = 100	PF and cos scaling	404111	R -	X	X	X	X		X	X	X	X		
Max. of Prms 15min	1000 kW =	Power scaling	404112	R -	X	X	X	X		X	X	X	X		
Max. of Qrms 15min	1000 kvar =	Power scaling	404113	R -	X	X	X	X		X	X	X	X		
Max. of Srms 15min	1000 kVA =	Power scaling	404114	R -	X	X	X	X		X	X	X	X		
Max. of IL1	1A = 1	-	404115	R -	X	X	X	X	X	X	X	X	X	X	
Max. of IL2	1A = 1	-	404116	R -	X	X	X	X	X	X	X	X	X	X	

Name	Default scaling Device = ModBus	Setting for scaling	Register	Access	VAMP TYPE										NOTE
					40	96	210	230	245	255	257	259	260	265	
Max. of IL3	1A =1	-	404117	R -	X	X	X	X	X	X	X	X	X	X	
Max. of IL1rms	1Arms =1	-	404118	R -	X	X	X	X	X	X	X	X	X	X	
Max. of IL2rms	1Arms =1	-	404119	R -	X	X	X	X	X	X	X	X	X	X	
Max. of IL3rms	1Arms =1	-	404120	R -	X	X	X	X	X	X	X	X	X	X	
Max. of IL1 15min	1A = 1	-	404121	R -	X	X	X	X	X	X	X	X	X	X	
Max. of IL2 15min	1A = 1	-	404122	R -	X	X	X	X	X	X	X	X	X	X	
Max. of IL3 15min	1A =1	-	404123	R -	X	X	X	X	X	X	X	X	X	X	
Max. of IL1rms 15min	1Arms =1	-	404124	R -	X	X	X	X	X	X	X	X	X	X	
Max. of IL2rms 15min	1Arms =1	-	404125	R -	X	X	X	X	X	X	X	X	X	X	
Max. of IL3rms 15min	1Arms =1	-	404126	R -	X	X	X	X	X	X	X	X	X	X	
Max. of U12	1000 V = 1000	Voltage scaling	404130	R -	X	X	X	X		X	X	X	X		
Max. of U23	1000 V = 1000	Voltage scaling	404131	R -		X	X	X		X	X	X	X		
Max. of U31	1000 V = 1000	Voltage scaling	404132	R -		X	X	X		X	X	X	X		
Z12 primary impedance	1ohm = 1	-	404201	R -								X			
Z23 primary impedance	1ohm = 1	-	404202	R -								X			
Z31 primary impedance	1ohm = 1	-	404203	R -								X			
Z12 secondary impedance	1ohm = 1	-	404204	R -								X			
Z23 secondary impedance	1ohm = 1	-	404205	R -								X			
Z31 secondary impedance	1ohm = 1	-	404206	R -								X			
Z12 angle	1° = 1	-	404207	R -								X			
Z23 angle	1° = 1	-	404208	R -								X			
Z31 angle	1° = 1	-	404209	R -								X			

Name	Default scaling Device = ModBus	Setting for scaling	Register	Access	VAMP TYPE										NOTE
					40	96	210	230	245	255	257	259	260	265	

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