

Spa Bus data mappings in VAMP devices

Table of contents

1. Category I – Input data.....	3
2. Category O – Output data.....	11
3. Category S – Setting values	16
4. Category V – Variables (internal)	30
5. Category M – Memory data	33
6. Category F – Slave identification.....	40
7. Category T - Time	40
8. Category D – Date.....	41
9. Category L – Last events	41
10. Category B – Last events from backup buffer	41

1. Category I – Input data

Channel	Data number	Item
0	1	Phase current IL2
0	2	Line-to-line voltage U23
0	3	Phase-to-earth voltage UL2
0	4	Frequency
0	5	Active power
0	6	Reactive power
0	7	Apparent power
0	8	Power factor
0	9	Exported energy
0	10	Imported energy
0	11	Exp. reactive energy
0	12	Imp. reactive energy
0	13	Io1 residual current
0	14	Io2 residual current
0	15	Zero sequence voltage
0	16	Pos. sequence U1
0	20	DI
0	21	Digital input 1
0	22	Digital input 2
0	23	Digital input 3
0	24	Digital input 4
0	25	Digital input 5
0	26	Digital input 6
0	27	Digital input 7
0	28	Digital input 8
0	29	Digital input 9
0	30	Digital input 10
0	31	Digital input 11
0	32	Digital input 12
0	33	Digital input 13
0	34	Digital input 14
0	35	Digital input 15
0	36	Digital input 16
0	37	Digital input 17
0	38	Digital input 18
0	41	DI1 counter
0	42	DI2 counter
0	43	DI3 counter
0	44	DI4 counter

Channel	Data number	Item
0	45	DI5 counter
0	46	DI6 counter
0	47	DI7 counter
0	48	DI8 counter
0	49	DI9 counter
0	50	DI10 counter
0	51	DI11 counter
0	52	DI12 counter
0	53	DI13 counter
0	54	DI14 counter
0	55	DI15 counter
0	56	DI16 counter
0	57	DI17 counter
0	58	DI18 counter
0	61	DI21 counter
0	62	DI22 counter
0	63	DI23 counter
0	64	DI24 counter
0	65	DI25 counter
0	66	DI26 counter
0	67	DI27 counter
0	68	DI28 counter
0	69	DI29 counter
0	70	DI30 counter
0	71	DI31 counter
0	72	DI32 counter
0	81	Trip relay 1
0	82	Trip relay 2
0	83	Trip relay 3
0	84	Trip relay 4
0	85	Signal relay 1
0	86	Signal relay 2
0	87	Signal relay 3
0	88	Signal relay 4
0	89	Signal relay 5
0	90	Trip relay 5
0	91	Trip relay 6
0	92	Trip relay 7
0	93	Trip relay 8
0	94	Digital input 21
0	95	Digital input 22

Channel	Data number	Item
0	96	Digital input 23
0	97	Digital input 24
0	98	Digital input 25
0	99	Digital input 26
0	100	Digital input 27
0	101	Digital input 28
0	102	Digital input 29
0	103	Digital input 30
0	104	Digital input 31
0	105	Digital input 32
0	120	Pos. sequence I1
0	121	Neg. sequence I2
0	122	Current -seq./+seq.
0	123	Current phase seq.
0	124	Phase current THD
0	125	Phase current IL
0	126	Min. of IL1 IL2 IL3
0	127	Max. of IL1 IL2 IL3
0	128	Phase current ILRMS
0	131	IoCalc demand
0	132	Io1 demand
0	133	Io2 demand
0	140	Pos. sequence U1
0	141	Neg. sequence U2
0	142	Voltage -seq./+seq.
0	143	Voltage phase seq.
0	144	Voltage THD
0	145	Average line voltage
0	146	Min of line voltages
0	147	Max of line voltages
0	148	Average phase voltage
0	149	Min. of phase voltages
0	150	Max. of phase voltages
0	151	Voltage mean
0	160	Cosine phi
0	161	Tan phii
0	162	Power angle
0	170	RMS active power
0	171	RMS reactive power
0	172	RMS apparent power
0	180	Active power demand

Channel	Data number	Item
0	181	Reactive power demand
0	182	Apparent power demand
0	183	Power factor demand
0	185	RMS active power demand
0	186	RMS reactive power demand
0	187	RMS apparent power demand
0	201	Phase current IL1
0	202	Phase current IL2
0	203	Phase current IL3
0	207	Io1 residual current
0	208	Io2 residual current
0	237	Io1 residual current
0	247	Io2 residual current
0	304	Minimum frequency
0	305	Minimum active power
0	306	Minimum react. power
0	307	Minimum apparent power
0	308	Min power factor
0	318	Minimum of Io
0	380	Minimum active power
0	381	Minimum react. power
0	382	Minimum apparent power
0	383	15 min minimum power factor
0	385	Minimum active power
0	386	Minimum react. power
0	387	Minimum apparent power
0	404	DatefMin
0	405	DatePmin
0	406	DateQmin
0	407	DateSmin
0	408	DatePFmin
0	418	Datelo1 min
0	480	DateP_15minMin
0	481	DateQ_15minMin
0	482	DateS_15minMin
0	483	DatePF_15minMin
0	485	DatePrms_15minMin
0	486	DateQrms_15minMin
0	487	DateSrms_15minMin
0	504	Maximum frequency
0	505	Maximum active power

Channel	Data number	Item
0	506	Maximum react. power
0	507	Maximum apparent power
0	508	Max power factor
0	518	Maximum of Io
0	580	Maximum active power
0	581	Maximum react. power
0	582	Maximum apparent power
0	583	15 min maximum power factor
0	585	Maximum active power
0	586	Maximum react. power
0	587	Maximum apparent power
0	604	DatefMax
0	605	DatePmax
0	606	DateQmax
0	607	DateSmax
0	608	DatePFmax
0	618	Datelo1max
0	680	DateP_15minMax
0	681	DateQ_15minMax
0	682	DateS_15minMax
0	683	DatePF_15minMax
0	685	DatePrms_15minMax
0	686	DateQrms_15minMax
0	687	DateSrms_15minMax
1	1	Phase current IL1
1	2	Line-to-line voltage U12
1	3	Phase-to-earth voltage UL1
1	4	IL1da demand
1	5	U12 demand
1	6	UL1 demand
1	9	Phase current IL1RMS
1	10	IL1 THD
1	11/25	HARMONICS of IL1
1	27	RMS minimum of IL1
1	29	Input voltage Ua
1	30	Ua THD
1	31/45	HARMONICS of Ua
1	50	Phase L1 active power
1	51	Phase L1 reactive power
1	52	Phase L1 apparent power
1	53	Phase L1 power factor

Channel	Data number	Item
1	54	Cosine of phase L1
1	301	Minimum of IL1
1	302	Minimum of U12
1	304	Minimum of IL1
1	309	RMS minimum of IL1
1	312	RMS minimum of IL1
1	401	DateIL1min
1	402	DateU12min
1	404	DateIL1_15minMin
1	409	DateIL1rmsMin
1	501	Maximum of IL1
1	502	Maximum of U12
1	504	Maximum of IL1
1	509	RMS maximum of IL1
1	601	DateIL1max
1	602	DateU12max
1	604	DateIL1_15minMax
1	609	DateIL1rmsMax
2	1	Phase current IL2
2	2	Line-to-line voltage U23
2	3	Phase-to-earth voltage UL3
2	4	IL2da demand
2	5	U23 demand
2	6	UL2 demand
2	9	Phase current IL2RMS
2	10	IL2 THD
2	11/25	HARMONICS of IL2
2	27	RMS minimum of IL2
2	29	Input voltage Ub
2	30	Ub THD
2	31/45	HARMONICS of Ub
2	50	Phase L2 active power
2	51	Phase L2 reactive power
2	52	Phase L2 apparent power
2	53	Phase L2 power factor
2	54	Cosine of phase L2
2	301	Minimum of IL2
2	302	Minimum of U23
2	304	Minimum of IL2
2	309	RMS minimum of IL2
2	312	RMS minimum of IL2

Channel	Data number	Item
2	401	DatelL2min
2	402	DateU23min
2	404	DatelL2_15minMin
2	409	DatelL2rmsMin
2	501	Maximum of IL2
2	502	Maximum of U23
2	504	Maximum of IL2
2	509	RMS maximum of IL2
2	601	DatelL2max
2	602	DateU23max
2	604	DatelL2_15minMax
2	609	DatelL2rmsMax
3	1	Phase current IL3
3	2	Line-to-line voltage U31
3	3	Phase-to-earth voltage UL3
3	4	IL3da demand
3	5	U31 demand
3	6	UL3 demand
3	9	Phase current IL3RMS
3	10	IL3 THD
3	11/25	HARMONICS of IL3
3	27	RMS minimum of IL3
3	29	Input voltage Uc
3	30	Uc THD
3	31/45	HARMONICS of Uc
3	50	Phase L3 active power
3	51	Phase L3 reactive power
3	52	Phase L3 apparent power
3	53	Phase L3 power factor
3	54	Cosine of phase L3
3	301	Minimum of IL3
3	302	Minimum of U31
3	304	Minimum of IL3
3	309	RMS minimum of IL3
3	312	RMS minimum of IL3
3	401	DatelL3min
3	402	DateU31min
3	404	DatelL3_15minMin
3	409	DatelL3rmsMin
3	501	Maximum of IL3
3	502	Maximum of U31

Channel	Data number	Item
3	504	Maximum of IL3
3	509	RMS maximum of IL3
3	601	DatelL3max
3	602	DateU31max
3	604	DatelL3_15minMax
3	609	DatelL3rmsMax
4	1	Io1 residual current
5	1	Io2 residual current
6	1	Zero sequence voltage
69	1	Virtual input 1
69	2	Virtual input 2
69	3	Virtual input 3
69	4	Virtual input 4
69	21	Virtual output 1
69	22	Virtual output 2
69	23	Virtual output 3
69	24	Virtual output 4
69	25	Virtual output 5
69	26	Virtual output 6
71	1	Obj1 state
71	13	Obj1 final trip
72	1	Obj2 state
72	13	Obj2 final trip
73	1	Obj3 state
73	13	Obj3 final trip
74	1	Obj4 state
74	13	Obj4 final trip
75	1	Obj5 state
75	13	Obj5 final trip
76	1	Obj6 state
76	13	Obj6 final trip
77	1	Obj7 state
78	1	Obj8 state
81	1	External DI1
81	2	External DI2
81	3	External DI3
81	4	External DI4
81	5	External DI5
81	6	External DI6
81	7	External DI7
81	8	External DI8

Channel	Data number	Item
81	9	External DI9
81	10	External DI10
81	11	External DI11
81	12	External DI12
81	13	External DI13
81	14	External DI14
81	15	External DI15
81	16	External DI16
81	17	External DI17
81	18	External DI18
81	19	External AI1
81	20	External AI2
81	21	External AI3
81	22	External AI4
81	23	External AI5
81	24	External AI6
81	25	External AI7
81	26	External AI8
81	27	External AI9
81	28	External AI10
81	29	External AI11
81	30	External AI12
81	31	External AI13
81	32	External AI14
81	33	External AI15
81	34	External AI16
87	1	Frequency
87	4	Line-to-line voltage U12
87	7	U12AngDisp

2. Category O – Output data

Channel	Data number	Item
0	10	Line 1 fault
0	11	Line 2 fault
0	12	Line 3 fault
0	20	Setting error
0	250	Running hours status
1	1	I> start
1	2	I> trip
2	1	I>> start

Channel	Data number	Item
2	2	I>> trip
3	1	I>>> start
3	2	I>>> trip
5	1	I2> start
5	2	I2> trip
8	1	IDir> start
8	2	IDir> trip
9	1	IDir>> start
9	2	IDir>> trip
10	1	IDir>>> start
10	2	IDir>>> trip
11	1	IDir>>>> start
11	2	IDir>>>> trip
12	1	I ARC start
12	2	I ARC trip
13	1	I< start
13	2	I< trip
14	1	T> start
14	2	T> trip
17	1	2. Harm start
17	2	2. Harm trip
19	1	Overcurrent alarm
19	2	Overcurrent trip
19	10	Line 1 alarm
19	11	Line 2 alarm
19	12	Line 3 alarm
20	1	Io> start
20	2	Io> trip
21	1	Io>> start
21	2	Io>> trip
23	1	IoDir> start
23	2	IoDir> trip
24	1	IoDir>> start
24	2	IoDir>> trip
25	1	Io>>> start
25	2	Io>>> trip
26	1	Io>>>> start
26	2	Io>>>> trip
27	1	Io1 ARC start
27	2	Io1 ARC trip
28	1	Io2 ARC start

Channel	Data number	Item
28	2	lo2 ARC trip
30	1	U> start
30	2	U> trip
31	1	U>> start
31	2	U>> trip
32	1	U< start
32	2	U< trip
33	1	U<< start
33	2	U<< trip
36	1	Uo> start
36	2	Uo> trip
37	1	Uo>> start
37	2	Uo>> trip
38	1	U>>> start
38	2	U>>> trip
39	1	U<<< start
39	2	U<<< trip
40	1	P< start
40	2	P< trip
41	1	P<< start
41	2	P<< trip
46	1	Prg1 start
46	2	Prg1 trip
47	1	Prg2 start
47	2	Prg2 trip
48	1	Prg3 start
48	2	Prg3 trip
49	1	Prg4 start
49	2	Prg4 trip
50	1	fX start
50	2	fX trip
51	1	fXX start
51	2	fXX trip
52	1	f< start
52	2	f< trip
53	1	f<< start
53	2	f<< trip
54	1	df/dt start
54	2	df/dt trip
56	1	Prg5 start
56	2	Prg5 trip

Channel	Data number	Item
57	1	Prg6 start
57	2	Prg6 trip
58	1	Prg7 start
58	2	Prg7 trip
59	1	Prg8 start
59	2	Prg8 trip
60	1	CBFP start
60	2	CBFP trip
61	1	ARReq1
61	2	ARReq2
61	3	ARReq3
61	4	ARReq4
61	5	ARReq5
61	6	ARShot1
61	7	ARShot2
61	8	ARShot3
61	9	ARShot4
61	10	ARShot5
61	11	Critical AR req.
61	12	Reclose locked
61	13	Reclose running
61	14	Final trip
61	15/19	AR final trip states
61	29	Autoreclose on
64	1	Voltage interrupt
64	11	Timer 1 status
64	12	Timer 2 status
64	13	Timer 3 status
64	14	Timer 4 status
64	51	Voltage status
65	1	State_LogOut1
65	2	State_LogOut2
65	3	State_LogOut3
65	4	State_LogOut4
65	5	State_LogOut5
65	6	State_LogOut6
65	7	State_LogOut7
65	8	State_LogOut8
65	9	State_LogOut9
65	10	State_LogOut10
65	11	State_LogOut11

Channel	Data number	Item
65	12	State_LogOut12
65	13	State_LogOut13
65	14	State_LogOut14
65	15	State_LogOut15
65	16	State_LogOut16
65	17	State_LogOut17
65	18	State_LogOut18
65	19	State_LogOut19
65	20	State_LogOut20
65	21	Logic Cntr1
65	22	Logic Cntr2
65	23	Logic Cntr3
65	24	Logic Cntr4
65	25	Logic Cntr5
65	26	Logic Cntr6
66	1	CBWAlarm 1
66	2	CBWAlarm 2
67	1	Start status
67	2	CTSV_alarm status
68	1	Start status
68	2	VTSV_alarm status
71	1	DirectO1O
71	2	DirectO1C
72	1	DirectO2O
72	2	DirectO2C
73	1	DirectO3O
73	2	DirectO3C
74	1	DirectO4O
74	2	DirectO4C
75	1	DirectO5O
75	2	DirectO5C
76	1	DirectO6O
76	2	DirectO6C
79	1	Cold load
79	2	Inrush detection
82	1/16	External AI Alarm State >
83	1/16	External AI Alarm State >>
107	1	IoInt> start
107	2	IoInt> trip

3. Category S – Setting values

Channel	Data number	Stage	Item
0	1	-	Grp. 2 remote scaling
0	101	-	CT primary
0	102	-	CT secondary
0	103	-	Nominal input
0	104	-	Io1 CT primary
0	105	-	Io1 CT secondary
0	106	-	Nominal Io1 input
0	107	-	Io2 CT primary
0	108	-	Io2 CT secondary
0	109	-	Nominal Io2 input
0	110	-	VT primary
0	111	-	VT secondary
0	112	-	VTo secondary
0	113	-	Motor nom current
0	121	-	Enable Xfault calc
0	122	-	Current change to trig
0	123	-	Load distribution
0	124	-	Line reactance/unit
0	125	-	Triggering digital input
0	130	-	Decimals in exp MWh
0	131	-	Decimals in imp MWh
0	132	-	Decimals in Mvarh
0	133	-	Decimals in Mvarh
0	135	-	E+ pulse size
0	136	-	E- pulse size
0	137	-	Eq+ pulse size
0	138	-	Eq- pulse size
0	140	-	E+ pulse duration
0	141	-	E- pulse duration
0	142	-	Eq+ pulse duration
0	143	-	Eq- pulse duration
0	250	-	Run hour DI link
1	1	>	Enable for >
1	2	>	Pick-up setting
1	3	>	Operation delay
1	4	>	Delay type
1	5	>	Inv. time coefficient k
1	14	>	Delay curve family
1	20	>	Group

Channel	Data number	Stage	Item
1	21	I>	Set group DI control
1	22	I>	Pick-up setting
1	23	I>	Operation delay
1	24	I>	Delay type
1	25	I>	Inv. time coefficient k
1	34	I>	Delay curve family
2	1	I>>	Enable for I>>
2	2	I>>	Pick-up setting
2	3	I>>	Operation delay
2	20	I>>	Group
2	21	I>>	Set group DI control
2	22	I>>	Pick-up setting
2	23	I>>	Operation delay
3	1	I>>>	Enable for I>>>
3	2	I>>>	Pick-up setting
3	3	I>>>	Operation delay
3	20	I>>>	Group
3	21	I>>>	Set group DI control
3	22	I>>>	Pick-up setting
3	23	I>>>	Operation delay
5	1	I2>	Enable for I2>
5	2	I2>	Pick-up setting K2
5	3	I2>	Operation delay
5	20	I2>	Group
5	21	I2>	Set group DI control
5	22	I2>	Pick-up setting K2
5	23	I2>	Operation delay
8	1	Iφ>	Enable for Iφ>
8	2	Iφ>	Pick-up setting
8	3	Iφ>	Operation delay
8	4	Iφ>	Delay type
8	5	Iφ>	Inv. time coefficient k
8	8	Iφ>	Angle offset
8	9	Iφ>	Direction mode
8	14	Iφ>	Delay curve family
8	20	Iφ>	Group
8	21	Iφ>	Set group DI control
8	22	Iφ>	Pick-up setting
8	23	Iφ>	Operation delay
8	24	Iφ>	Delay type
8	25	Iφ>	Inv. time coefficient k

Channel	Data number	Stage	Item
8	28	$I\phi>$	Angle offset
8	29	$I\phi>$	Direction mode
8	34	$I\phi>$	Delay curve family
9	1	$I\phi>>$	Enable for $I\phi>>$
9	2	$I\phi>>$	Pick-up setting
9	3	$I\phi>>$	Operation delay
9	4	$I\phi>>$	Delay type
9	5	$I\phi>>$	Inv. time coefficient k
9	8	$I\phi>>$	Angle offset
9	9	$I\phi>>$	Direction mode
9	14	$I\phi>>$	Delay curve family
9	20	$I\phi>>$	Group
9	21	$I\phi>>$	Set group DI control
9	22	$I\phi>>$	Pick-up setting
9	23	$I\phi>>$	Operation delay
9	24	$I\phi>>$	Delay type
9	25	$I\phi>>$	Inv. time coefficient k
9	28	$I\phi>>$	Angle offset
9	29	$I\phi>>$	Direction mode
9	34	$I\phi>>$	Delay curve family
10	1	$I\phi>>>$	Enable for $I\phi>>>$
10	2	$I\phi>>>$	Pick-up setting
10	3	$I\phi>>>$	Operation delay
10	8	$I\phi>>>$	Angle offset
10	9	$I\phi>>>$	Direction mode
10	20	$I\phi>>>$	Group
10	21	$I\phi>>>$	Set group DI control
10	22	$I\phi>>>$	Pick-up setting
10	23	$I\phi>>>$	Operation delay
10	28	$I\phi>>>$	Angle offset
10	29	$I\phi>>>$	Direction mode
11	1	$I\phi>>>>$	Enable for $I\phi>>>>$
11	2	$I\phi>>>>$	Pick-up setting
11	3	$I\phi>>>>$	Operation delay
11	8	$I\phi>>>>$	Angle offset
11	9	$I\phi>>>>$	Direction mode
11	20	$I\phi>>>>$	Group
11	21	$I\phi>>>>$	Set group DI control
11	22	$I\phi>>>>$	Pick-up setting
11	23	$I\phi>>>>$	Operation delay
11	28	$I\phi>>>>$	Angle offset

Channel	Data number	Stage	Item
11	29	Iφ>>>>	Direction mode
12	1	Arcl>	Enable for Arcl>
12	2	Arcl>	Pick-up setting
12	3	Arcl>	Arc inputs in use
13	1	I<	Enable for I<
13	2	I<	Pick-up setting
13	3	I<	Operation delay
13	20	I<	Group
13	21	I<	Set group DI control
13	22	I<	Pick-up setting
13	23	I<	Operation delay
14	1	T>	Enable for T>
14	2	T>	Maximum continuous current
14	3	T>	Time constant tau
14	4	T>	Alarm setting
14	5	T>	Rel. cooling time constant
14	6	T>	Max overload at +40°C
14	7	T>	Max overload at +70°C
14	8	T>	Ambient temperature
16	6	Ist>	Motor start detection current
17	1	If2>	Enable for If2>
17	2	If2>	Pick-up setting
17	3	If2>	Operation delay
20	1	Io>	Enable for Io>
20	2	Io>	Pick-up setting
20	3	Io>	Operation delay
20	4	Io>	Delay type
20	5	Io>	Inv. time coefficient k
20	14	Io>	Delay curve family
20	20	Io>	Group
20	21	Io>	Set group DI control
20	22	Io>	Pick-up setting
20	23	Io>	Operation delay
20	24	Io>	Delay type
20	25	Io>	Inv. time coefficient k
20	34	Io>	Delay curve family
21	1	Io>>	Enable for Io>>
21	2	Io>>	Pick-up setting
21	3	Io>>	Operation delay
21	20	Io>>	Group
21	21	Io>>	Set group DI control

Channel	Data number	Stage	Item
21	22	lo>>	Pick-up setting
21	23	lo>>	Operation delay
23	1	loφ>	Enable for loφ>
23	2	loφ>	Pick-up setting
23	3	loφ>	Operation delay
23	4	loφ>	Delay type
23	5	loφ>	Inv. time coefficient k
23	6	loφ>	Uo setting for loDir> stage
23	7	loφ>	Char ctrl. in ResCap mode
23	8	loφ>	Angle offset
23	9	loφ>	Direction mode
23	14	loφ>	Delay curve family
23	20	loφ>	Group
23	21	loφ>	Set group DI control
23	22	loφ>	Pick-up setting
23	23	loφ>	Operation delay
23	24	loφ>	Delay type
23	25	loφ>	Inv. time coefficient k
23	26	loφ>	Uo setting for loDir> stage
23	27	loφ>	Char ctrl. in ResCap mode
23	28	loφ>	Angle offset
23	29	loφ>	Direction mode
23	34	loφ>	Delay curve family
24	1	loφ>>	Enable for loφ>>
24	2	loφ>>	Pick-up setting
24	3	loφ>>	Operation delay
24	4	loφ>>	Delay type
24	5	loφ>>	Inv. time coefficient k
24	6	loφ>>	Uo setting for loDir>> stage
24	7	loφ>>	Char ctrl. in ResCap mode
24	8	loφ>>	Angle offset
24	9	loφ>>	Direction mode
24	14	loφ>>	Delay curve family
24	20	loφ>>	Group
24	21	loφ>>	Set group DI control
24	22	loφ>>	Pick-up setting
24	23	loφ>>	Operation delay
24	24	loφ>>	Delay type
24	25	loφ>>	Inv. time coefficient k
24	26	loφ>>	Uo setting for loDir>> stage
24	27	loφ>>	Char ctrl. in ResCap mode

Channel	Data number	Stage	Item
24	28	loφ>>	Angle offset
24	29	loφ>>	Direction mode
24	34	loφ>>	Delay curve family
25	1	lo>>>	Enable for lo>>>
25	2	lo>>>	Pick-up setting
25	3	lo>>>	Operation delay
25	20	lo>>>	Group
25	21	lo>>>	Set group DI control
25	22	lo>>>	Pick-up setting
25	23	lo>>>	Operation delay
26	1	lo>>>>	Enable for lo>>>>
26	2	lo>>>>	Pick-up setting
26	3	lo>>>>	Operation delay
26	20	lo>>>>	Group
26	21	lo>>>>	Set group DI control
26	22	lo>>>>	Pick-up setting
26	23	lo>>>>	Operation delay
27	1	Arclo1>	Enable for Arclo1>
27	2	Arclo1>	Pick-up setting
27	3	Arclo1>	Arc inputs in use
28	1	Arclo2>	Enable for Arclo2>
28	2	Arclo2>	Pick-up setting
28	3	Arclo2>	Arc inputs in use
30	1	U>	Enable for U>
30	2	U>	Pick-up setting
30	3	U>	Operation delay
30	7	U>	Release delay
30	8	U>	Hysteresis
30	20	U>	Group
30	21	U>	Set group DI control
30	22	U>	Pick-up setting
30	23	U>	Operation delay
31	1	U>>	Enable for U>>
31	2	U>>	Pick-up setting
31	3	U>>	Operation delay
31	20	U>>	Group
31	21	U>>	Set group DI control
31	22	U>>	Pick-up setting
31	23	U>>	Operation delay
32	1	U<	Enable for U<
32	2	U<	Pick-up setting

Channel	Data number	Stage	Item
32	3	U<	Operation delay
32	6	U<	Low voltage blocking
32	7	U<	Release delay
32	8	U<	Hysteresis
32	20	U<	Group
32	21	U<	Set group DI control
32	22	U<	Pick-up setting
32	23	U<	Operation delay
32	26	U<	Low voltage blocking
33	1	U<<	Enable for U<<
33	2	U<<	Pick-up setting
33	3	U<<	Operation delay
33	6	U<<	Low voltage blocking
33	20	U<<	Group
33	21	U<<	Set group DI control
33	22	U<<	Pick-up setting
33	23	U<<	Operation delay
33	26	U<<	Low voltage blocking
36	1	Uo>	Enable for Uo>
36	2	Uo>	Pick-up setting
36	3	Uo>	Operation delay
36	20	Uo>	Group
36	21	Uo>	Set group DI control
36	22	Uo>	Pick-up setting
36	23	Uo>	Operation delay
37	1	Uo>>	Enable for Uo>>
37	2	Uo>>	Pick-up setting
37	3	Uo>>	Operation delay
37	20	Uo>>	Group
37	21	Uo>>	Set group DI control
37	22	Uo>>	Pick-up setting
37	23	Uo>>	Operation delay
38	1	U>>>	Enable for U>>>
38	2	U>>>	Pick-up setting
38	3	U>>>	Operation delay
38	20	U>>>	Group
38	21	U>>>	Set group DI control
38	22	U>>>	Pick-up setting
38	23	U>>>	Operation delay
39	1	U<<<	Enable for U<<<
39	2	U<<<	Pick-up setting

Channel	Data number	Stage	Item
39	3	U<<<	Operation delay
39	6	U<<<	Low voltage blocking
39	20	U<<<	Group
39	21	U<<<	Set group DI control
39	22	U<<<	Pick-up setting
39	23	U<<<	Operation delay
39	26	U<<<	Low voltage blocking
40	1	P<	Enable for P<
40	2	P<	Pick-up setting
40	3	P<	Operation delay
40	20	P<	Group
40	21	P<	Set group DI control
40	22	P<	Pick-up setting
40	23	P<	Operation delay
41	1	P<<	Enable for P<<
41	2	P<<	Pick-up setting
41	3	P<<	Operation delay
41	20	P<<	Group
41	21	P<<	Set group DI control
41	22	P<<	Pick-up setting
41	23	P<<	Operation delay
46	1	Prg1	Enable for Prg1
46	2	Prg1	Pick-up setting
46	3	Prg1	Operation delay
46	6	Prg1	No compare limit for mode <
46	7	Prg1	Coupling
46	8	Prg1	Hysteresis
46	9	Prg1	Compare condition
46	20	Prg1	Group
46	21	Prg1	Set group DI control
46	22	Prg1	Pick-up setting
46	23	Prg1	Operation delay
47	1	Prg2	Enable for Prg2
47	2	Prg2	Pick-up setting
47	3	Prg2	Operation delay
47	6	Prg2	No compare limit for mode <
47	7	Prg2	Coupling
47	8	Prg2	Hysteresis
47	9	Prg2	Compare condition
47	20	Prg2	Group
47	21	Prg2	Set group DI control

Channel	Data number	Stage	Item
47	22	Prg2	Pick-up setting
47	23	Prg2	Operation delay
48	1	Prg3	Enable for Prg3
48	2	Prg3	Pick-up setting
48	3	Prg3	Operation delay
48	6	Prg3	No compare limit for mode <
48	7	Prg3	Coupling
48	8	Prg3	Hysteresis
48	9	Prg3	Compare condition
48	20	Prg3	Group
48	21	Prg3	Set group DI control
48	22	Prg3	Pick-up setting
48	23	Prg3	Operation delay
49	1	Prg4	Enable for Prg4
49	2	Prg4	Pick-up setting
49	3	Prg4	Operation delay
49	6	Prg4	No compare limit for mode <
49	7	Prg4	Coupling
49	8	Prg4	Hysteresis
49	9	Prg4	Compare condition
49	20	Prg4	Group
49	21	Prg4	Set group DI control
49	22	Prg4	Pick-up setting
49	23	Prg4	Operation delay
50	1	fX	Enable for fX
50	2	fX	Pick-up setting
50	3	fX	Operation delay
50	20	fX	Group
50	21	fX	Set group DI control
50	22	fX	Pick-up setting
50	23	fX	Operation delay
51	1	fXX	Enable for fXX
51	2	fXX	Pick-up setting
51	3	fXX	Operation delay
51	20	fXX	Group
51	21	fXX	Set group DI control
51	22	fXX	Pick-up setting
51	23	fXX	Operation delay
52	1	f<	Enable for f<
52	2	f<	Pick-up setting
52	3	f<	Operation delay

Channel	Data number	Stage	Item
52	6	f<	Low voltage blocking
52	20	f<	Group
52	21	f<	Set group DI control
52	22	f<	Pick-up setting
52	23	f<	Operation delay
53	1	f<<	Enable for f<<
53	2	f<<	Pick-up setting
53	3	f<<	Operation delay
53	6	f<<	Low voltage blocking
53	20	f<<	Group
53	21	f<<	Set group DI control
53	22	f<<	Pick-up setting
53	23	f<<	Operation delay
54	1	df/dt	Enable for df/dt
54	2	df/dt	Pick-up setting
54	3	df/dt	Operation delay
54	4	df/dt	Minimum delay
54	5	df/dt	Low voltage blocking
54	20	df/dt	Group
54	21	df/dt	Set group DI control
54	22	df/dt	Pick-up setting
54	23	df/dt	Operation delay
54	24	df/dt	Minimum delay
55	6	Uf>	Low voltage blocking
56	1	Prg5	Enable for Prg5
56	2	Prg5	Pick-up setting
56	3	Prg5	Operation delay
56	6	Prg5	No compare limit for mode <
56	7	Prg5	Coupling
56	8	Prg5	Hysteresis
56	9	Prg5	Compare condition
56	20	Prg5	Group
56	21	Prg5	Set group DI control
56	22	Prg5	Pick-up setting
56	23	Prg5	Operation delay
57	1	Prg6	Enable for Prg6
57	2	Prg6	Pick-up setting
57	3	Prg6	Operation delay
57	6	Prg6	No compare limit for mode <
57	7	Prg6	Coupling
57	8	Prg6	Hysteresis

Channel	Data number	Stage	Item
57	9	Prg6	Compare condition
57	20	Prg6	Group
57	21	Prg6	Set group DI control
57	22	Prg6	Pick-up setting
57	23	Prg6	Operation delay
58	1	Prg7	Enable for Prg7
58	2	Prg7	Pick-up setting
58	3	Prg7	Operation delay
58	6	Prg7	No compare limit for mode <
58	7	Prg7	Coupling
58	8	Prg7	Hysteresis
58	9	Prg7	Compare condition
58	20	Prg7	Group
58	21	Prg7	Set group DI control
58	22	Prg7	Pick-up setting
58	23	Prg7	Operation delay
59	1	Prg8	Enable for Prg8
59	2	Prg8	Pick-up setting
59	3	Prg8	Operation delay
59	6	Prg8	No compare limit for mode <
59	7	Prg8	Coupling
59	8	Prg8	Hysteresis
59	9	Prg8	Compare condition
59	20	Prg8	Group
59	21	Prg8	Set group DI control
59	22	Prg8	Pick-up setting
59	23	Prg8	Operation delay
60	1	CBFP	Enable for CBFP
60	2	CBFP	Monitored Trip relay
60	3	CBFP	Operation delay
61	1	AR	Enable autoreclosing
61	2	AR	Reclaim time
61	3	AR	Max ctrl pulse length
61	4	AR	Completion timeout
61	5	AR	DI for 'obj open'
61	6	AR	DI for 'obj closed'
61	7	AR	DI for 'obj ready'
61	8	AR	Block by external synchrocheck
61	9	AR	DI for ARon/ARoff
61	10	AR	Dead time
61	11	AR	AR1 start delay

Channel	Data number	Stage	Item
61	12	AR	AR2 start delay
61	13	AR	AR3 start delay
61	14	AR	AR4 start delay
61	15	AR	AR1 discrim. time
61	16	AR	AR2 discrim. time
61	17	AR	AR3 discrim. time
61	18	AR	AR4 discrim. time
61	19	AR	Enable AR1 AR-requests
61	20	AR	Enable AR2 AR-requests
61	21	AR	Enable AR3 AR-requests
61	22	AR	Enable AR4 AR-requests
61	23	AR	Dead time
61	24	AR	Enable AR1 AR-requests
61	25	AR	Enable AR2 AR-requests
61	26	AR	Enable AR3 AR-requests
61	27	AR	Enable AR4 AR-requests
61	28	AR	AR1 discrim. time
61	29	AR	AR2 discrim. time
61	30	AR	AR3 discrim. time
61	31	AR	AR4 discrim. time
61	32	AR	Dead time
61	33	AR	Enable AR1 AR-requests
61	34	AR	Enable AR2 AR-requests
61	35	AR	Enable AR3 AR-requests
61	36	AR	Enable AR4 AR-requests
61	37	AR	AR1 discrim. time
61	38	AR	AR2 discrim. time
61	39	AR	AR3 discrim. time
61	40	AR	AR4 discrim. time
61	41	AR	Dead time
61	42	AR	Enable AR1 AR-requests
61	43	AR	Enable AR2 AR-requests
61	44	AR	Enable AR3 AR-requests
61	45	AR	Enable AR4 AR-requests
61	46	AR	AR1 discrim. time
61	47	AR	AR2 discrim. time
61	48	AR	AR3 discrim. time
61	49	AR	AR4 discrim. time
61	50	AR	Dead time
61	51	AR	Enable AR1 AR-requests
61	52	AR	Enable AR2 AR-requests

Channel	Data number	Stage	Item
61	53	AR	Enable AR3 AR-requests
61	54	AR	Enable AR4 AR-requests
61	55	AR	AR1 discrim. time
61	56	AR	AR2 discrim. time
61	57	AR	AR3 discrim. time
61	58	AR	AR4 discrim. time
61	101	AR	Enable AR for 2 grp.
64	1	-	Voltage low limit
64	2	-	Int. Calc. period
64	11	-	Timer mode
64	12	-	Timer mode
64	13	-	Timer mode
64	14	-	Timer mode
64	15	-	Timer On
64	16	-	Timer On
64	17	-	Timer On
64	18	-	Timer On
64	19	-	Timer Off
64	20	-	Timer Off
64	21	-	Timer Off
64	22	-	Timer Off
64	51	-	Enable sag & swell
64	52	-	Voltage sag limit
64	53	-	Voltage swell limit
64	54	-	Low voltage blocking
64	55	-	Operation delay
64	101	-	EF calc mode
64	102	-	Trig input
66	1	CBWEAR	Enable for CBWEAR
66	2	CBWEAR	Clear counters
66	11/12	CBWEAR	Alarm level
66	21/22	CBWEAR	Limit for oper. left
66	31/38	CBWEAR	Current points
66	51/58	CBWEAR	Limit for oper. left
67	1	CT alarm	Enable for CT alarm
67	2	CT alarm	Imin< setting
67	3	CT alarm	Imax> setting
67	4	CT alarm	Operation delay
68	1	VT alarm	Enable for VT alarm
68	2	VT alarm	I2< setting
68	3	VT alarm	U2> setting

Channel	Data number	Stage	Item
68	4	VT alarm	Operation delay
79	2	-	Pickup current
79	3	-	Maximum time
79	6	-	Idle current
79	7	-	Pickup for 2nd harmonic
80	1	-	Signal relay 1
80	2	-	Signal relay 2
80	3	-	Signal relay 3
80	4	-	Signal relay 4
80	5	-	Signal relay 5
107	1	lolnt>	Enable for lolnt>
107	2	lolnt>	Pick-up setting
107	3	lolnt>	Operation delay
107	4	lolnt>	Uo pick-up
107	5	lolnt>	Intermittent time
107	6	lolnt>	Trip for remaining Uo
107	20	lolnt>	Group
107	21	lolnt>	Set group DI control
107	22	lolnt>	Pick-up setting
107	23	lolnt>	Operation delay
107	24	lolnt>	Uo pick-up

4. Category V – Variables (internal)

Channel	Data number	Stage	Item
0	10	-	Fault reactance
0	11	-	Fault type
0	12	-	Current before fault
0	13	-	Fault current
0	14	-	Current after fault
0	15	-	Voltage drop
0	16	-	Fault duration
0	17	-	Number of faults
0	18	-	Distance to fault
0	19	-	Algorithm condition
0	56	-	Diagnostic register 1
0	57	-	Diagnostic register 2
0	58	-	Diagnostic register 3
0	59	-	Diagnostic register 4
0	60	-	Reset diagnostics
0	61	-	Clear min & max
0	101	-	Release latches
0	150	-	SetGrp common change
0	154	-	EMaskAppl
0	155/158	-	Digital input events
0	160	-	Password
0	161	-	ClosePwdForSpaBus
0	200	-	SPABUS address
0	201	-	SPABUS bit rate
0	205	-	Program version
0	250	-	Engine running hours
0	251	-	Engine running seconds
0	252	-	Start counter
1	155	I>	I> events
1	205	I>	Serial number
2	155	I>>	I>> events
3	155	I>>>	I>>> events
5	155	I2>	I2> events
8	155	Iφ>	Iφ> events
9	155	Iφ>>	Iφ>> events
10	155	Iφ>>>	Iφ>>> events
11	155	Iφ>>>>	Iφ>>>> events
12	155	Arcl>	Arcl> events
13	155	I<	I< events

Channel	Data number	Stage	Item
14	155	T>	T> events
15	155	Arcl>	Arcl> events
17	155	lf2>	lf2> events
19	155	-	O/C events
20	155	lo>	lo> events
21	155	lo>>	lo>> events
23	155	loφ>	loφ> events
24	155	loφ>>	loφ>> events
25	155	lo>>>	lo>>> events
26	155	lo>>>>	lo>>>> events
27	155	Arcl01>	Arcl> events
28	155	Arcl02>	Arcl> events
30	155	U>	U> events
31	155	U>>	U>> events
32	155	U<	U< events
33	155	U<<	U<< events
36	155	Uo>	Uo> events
37	155	Uo>>	Uo>> events
38	155	U>>>	U>>> events
39	155	U<<<	U<<< events
40	155	P<	P< events
41	155	P<<	P<< events
46	155	Prg1	Prg1 events
47	155	Prg2	Prg2 events
48	155	Prg3	Prg3 events
49	155	Prg4	Prg4 events
50	155	fX	fX events
51	155	fXX	fXX events
52	155	f<	f< events
53	155	f<<	f<< events
54	155	df/dt	df/dt events
56	155	Prg5	Prg5 events
57	155	Prg6	Prg6 events
58	155	Prg7	Prg7 events
59	155	Prg8	Prg8 events
60	155	CBFP	CBFP events
61	155	AR	EventMaskReclose
61	156	AR	EMaskFinalTrips
64	155	-	EMaskTimers
65	155	-	Log1..8
65	156	-	Log9..16

Channel	Data number	Stage	Item
66	155	CBWEAR	CBWEAR
67	155	CT alarm	CT SUPERVISOR
68	155	VT alarm	VT SUPERVISOR
70	1	R/L	LR_Spa
70	155	R/L	EventMaskRL
71	1	1	Open select Obj1
71	2	1	Close select Obj1
71	3	1	Execute operation Obj1
71	4	1	Cancel selected operation
71	5	1	Max ctrl pulse length
71	155	1	EventMaskObj1
72	1	2	Open select Obj2
72	2	2	Close select Obj2
72	3	2	Execute operation Obj2
72	4	2	Cancel selected operation
72	5	2	Max ctrl pulse length
72	155	2	EventMaskObj2
73	1	3	Open select Obj3
73	2	3	Close select Obj3
73	3	3	Execute operation Obj3
73	4	3	Cancel selected operation
73	5	3	Max ctrl pulse length
73	155	3	EventMaskObj3
74	1	4	Open select Obj4
74	2	4	Close select Obj4
74	3	4	Execute operation Obj4
74	4	4	Cancel selected operation
74	5	4	Max ctrl pulse length
74	155	4	EventMaskObj4
75	1	5	Open select Obj5
75	2	5	Close select Obj5
75	3	5	Execute operation Obj5
75	4	5	Cancel selected operation
75	5	5	Max ctrl pulse length
75	155	5	EventMaskObj5
76	1	6	Open select Obj6
76	2	6	Close select Obj6
76	3	6	Execute operation Obj6
76	4	6	Cancel selected operation
76	5	6	Max ctrl pulse length
76	155	6	EventMaskObj6

Channel	Data number	Stage	Item
77	155	7	EventMaskObj7
78	155	8	EventMaskObj8
80	1	-	Control of A1
80	2	-	Control of A2
80	3	-	Control of A3
80	4	-	Control of A4
80	5	-	Control of A5
81	155	-	EventMaskExtDI1_16
81	156	-	EventMaskExtDI17_18
82	155	-	EventMaskExtAlarm1
83	155	-	EventMaskExtAlarm2
107	155	!oInt>	!oInt> events

5. Category M – Memory data

Channel	Data number	Stage	Item
0	1	-	Virtual COM port
0	2	-	Virtual COM port
0	10	-	Fault reactance
0	11	-	Fault type
0	12	-	Current before fault
0	13	-	Fault current
0	14	-	Current after fault
0	15	-	Voltage drop
0	16	-	Fault duration
0	17	-	Number of faults
0	18	-	Distance to fault
0	19	-	Algorithm condition
1	10/17	!>	Time stamp
1	20/27	!>	Fault current
1	30/37	!>	Elapsed delay
1	40/47	!>	Fault type
1	50/57	!>	Pre-fault current
1	80/87	!>	Fault type
1	90/97	!>	Group
2	10/17	!>>	Time stamp
2	20/27	!>>	Fault current
2	30/37	!>>	Elapsed delay
2	40/47	!>>	Fault type

Channel	Data number	Stage	Item
2	50/57	I>>	Pre-fault current
2	80/87	I>>	Fault type
2	90/97	I>>	Group
3	10/17	I>>>	Time stamp
3	20/27	I>>>	Fault current
3	30/37	I>>>	Elapsed delay
3	40/47	I>>>	Fault type
3	50/57	I>>>	Pre-fault current
3	80/87	I>>>	Fault type
3	90/97	I>>>	Group
5	10/17	I2>	Time stamp
5	20/27	I2>	Fault current
5	30/37	I2>	Elapsed delay
5	90/97	I2>	Group
8	10/17	Iφ>	Time stamp
8	20/27	Iφ>	Fault current
8	30/37	Iφ>	Elapsed delay
8	40/47	Iφ>	Fault type
8	50/57	Iφ>	Fault angle
8	60/67	Iφ>	U1 fault value
8	70/77	Iφ>	Pre-fault current
8	80/87	Iφ>	Fault type
8	90/97	Iφ>	Group
9	10/17	Iφ>>	Time stamp
9	20/27	Iφ>>	Fault current
9	30/37	Iφ>>	Elapsed delay
9	40/47	Iφ>>	Fault type
9	50/57	Iφ>>	Fault angle
9	60/67	Iφ>>	U1 fault value
9	70/77	Iφ>>	Pre-fault current
9	80/87	Iφ>>	Fault type
9	90/97	Iφ>>	Group
10	10/17	Iφ>>>	Time stamp
10	20/27	Iφ>>>	Fault current
10	30/37	Iφ>>>	Elapsed delay
10	40/47	Iφ>>>	Fault type
10	50/57	Iφ>>>	Fault angle
10	60/67	Iφ>>>	U1 fault value
10	70/77	Iφ>>>	Pre-fault current
10	80/87	Iφ>>>	Fault type
10	90/97	Iφ>>>	Group

Channel	Data number	Stage	Item
11	10/17	Iφ>>>>	Time stamp
11	20/27	Iφ>>>>	Fault current
11	30/37	Iφ>>>>	Elapsed delay
11	40/47	Iφ>>>>	Fault type
11	50/57	Iφ>>>>	Fault angle
11	60/67	Iφ>>>>	U1 fault value
11	70/77	Iφ>>>>	Pre-fault current
11	80/87	Iφ>>>>	Fault type
11	90/97	Iφ>>>>	Group
12	10/17	Arcl>	Time stamp
12	20/27	Arcl>	Fault current
12	40/47	Arcl>	Fault type
12	50/57	Arcl>	Pre-fault current
12	80/87	Arcl>	Fault type
13	10/17	I<	Time stamp
13	20/27	I<	Fault current
13	30/37	I<	Elapsed delay
13	40/47	I<	Fault type
13	50/57	I<	Pre-fault current
13	80/87	I<	Fault type
13	90/97	I<	Group
14	10/17	T>	Time stamp
14	20/27	T>	Temperature rise
14	30/37	T>	Elapsed delay
14	40/47	T>	Fault current
14	50/57	T>	Pre-fault current
17	10/17	If2>	Time stamp
17	20/27	If2>	Fault current
17	30/37	If2>	Elapsed delay
19	20	-	Last fault current
20	10/17	Io>	Time stamp
20	20/27	Io>	Fault current
20	30/37	Io>	Elapsed delay
20	90/97	Io>	Group
21	10/17	Io>>	Time stamp
21	20/27	Io>>	Fault current
21	30/37	Io>>	Elapsed delay
21	90/97	Io>>	Group
23	10/17	Ioφ>	Time stamp
23	20/27	Ioφ>	Fault current
23	30/37	Ioφ>	Elapsed delay

Channel	Data number	Stage	Item
23	40/47	loφ>	Fault angle
23	50/57	loφ>	Fault voltage
23	90/97	loφ>	Group
24	10/17	loφ>>	Time stamp
24	20/27	loφ>>	Fault current
24	30/37	loφ>>	Elapsed delay
24	40/47	loφ>>	Fault angle
24	50/57	loφ>>	Fault voltage
24	90/97	loφ>>	Group
25	10/17	lo>>>	Time stamp
25	20/27	lo>>>	Fault current
25	30/37	lo>>>	Elapsed delay
25	90/97	lo>>>	Group
26	10/17	lo>>>>	Time stamp
26	20/27	lo>>>>	Fault current
26	30/37	lo>>>>	Elapsed delay
26	90/97	lo>>>>	Group
27	10/17	Arclo1>	Time stamp
27	20/27	Arclo1>	Fault current
28	10/17	Arclo2>	Time stamp
28	20/27	Arclo2>	Fault current
30	10/17	U>	Time stamp
30	20/27	U>	Fault voltage
30	30/37	U>	Elapsed delay
30	90/97	U>	Group
31	10/17	U>>	Time stamp
31	20/27	U>>	Fault voltage
31	30/37	U>>	Elapsed delay
31	90/97	U>>	Group
32	10/17	U<	Time stamp
32	20/27	U<	Fault voltage
32	30/37	U<	Elapsed delay
32	90/97	U<	Group
33	10/17	U<<	Time stamp
33	20/27	U<<	Fault voltage
33	30/37	U<<	Elapsed delay
33	90/97	U<<	Group
36	10/17	Uo>	Time stamp
36	20/27	Uo>	Fault voltage
36	30/37	Uo>	Elapsed delay
36	90/97	Uo>	Group

Channel	Data number	Stage	Item
37	10/17	Uo>>	Time stamp
37	20/27	Uo>>	Fault voltage
37	30/37	Uo>>	Elapsed delay
37	90/97	Uo>>	Group
38	10/17	U>>>	Time stamp
38	20/27	U>>>	Fault voltage
38	30/37	U>>>	Elapsed delay
38	90/97	U>>>	Group
39	10/17	U<<<	Time stamp
39	20/27	U<<<	Fault voltage
39	30/37	U<<<	Elapsed delay
39	90/97	U<<<	Group
40	10/17	P<	Time stamp
40	20/27	P<	Fault value
40	30/37	P<	Elapsed delay
40	90/97	P<	Group
41	10/17	P<<	Time stamp
41	20/27	P<<	Fault value
41	30/37	P<<	Elapsed delay
41	90/97	P<<	Group
46	10/17	Prg1	Time stamp
46	20/27	Prg1	Fault value
46	30/37	Prg1	Elapsed delay
46	90/97	Prg1	Group
47	10/17	Prg2	Time stamp
47	20/27	Prg2	Fault value
47	30/37	Prg2	Elapsed delay
47	90/97	Prg2	Group
48	10/17	Prg3	Time stamp
48	20/27	Prg3	Fault value
48	30/37	Prg3	Elapsed delay
48	90/97	Prg3	Group
49	10/17	Prg4	Time stamp
49	20/27	Prg4	Fault value
49	30/37	Prg4	Elapsed delay
49	90/97	Prg4	Group
50	10/17	fX	Time stamp
50	20/27	fX	Fault frequency
50	30/37	fX	Elapsed delay
50	90/97	fX	Group
51	10/17	fXX	Time stamp

Channel	Data number	Stage	Item
51	20/27	fXX	Fault frequency
51	30/37	fXX	Elapsed delay
51	90/97	fXX	Group
52	10/17	f<	Time stamp
52	20/27	f<	Fault frequency
52	30/37	f<	Elapsed delay
52	90/97	f<	Group
53	10/17	f<<	Time stamp
53	20/27	f<<	Fault frequency
53	30/37	f<<	Elapsed delay
53	90/97	f<<	Group
54	10/17	df/dt	Time stamp
54	20/27	df/dt	Fault value
54	30/37	df/dt	Elapsed delay
54	40/47	df/dt	Frequency
54	90/97	df/dt	Group
56	10/17	Prg5	Time stamp
56	20/27	Prg5	Fault value
56	30/37	Prg5	Elapsed delay
56	90/97	Prg5	Group
57	10/17	Prg6	Time stamp
57	20/27	Prg6	Fault value
57	30/37	Prg6	Elapsed delay
57	90/97	Prg6	Group
58	10/17	Prg7	Time stamp
58	20/27	Prg7	Fault value
58	30/37	Prg7	Elapsed delay
58	90/97	Prg7	Group
59	10/17	Prg8	Time stamp
59	20/27	Prg8	Fault value
59	30/37	Prg8	Elapsed delay
59	90/97	Prg8	Group
60	10/17	CBFP	Time stamp
60	30/37	CBFP	Elapsed delay
61	10	AR	Shot1 start counter
61	11	AR	Shot2 start counter
61	12	AR	Shot3 start counter
61	13	AR	Shot4 start counter
61	14	AR	Shot5 start counter
61	15	AR	Shot1 start counter
61	16	AR	Shot2 start counter

Channel	Data number	Stage	Item
61	17	AR	Shot3 start counter
61	18	AR	Shot4 start counter
61	19	AR	Shot5 start counter
61	20	AR	Shot1 start counter
61	21	AR	Shot2 start counter
61	22	AR	Shot3 start counter
61	23	AR	Shot4 start counter
61	24	AR	Shot5 start counter
61	25	AR	Shot1 start counter
61	26	AR	Shot2 start counter
61	27	AR	Shot3 start counter
61	28	AR	Shot4 start counter
61	29	AR	Shot5 start counter
61	30	AR	Shot1 start counter
61	31	AR	Shot2 start counter
61	32	AR	Shot3 start counter
61	33	AR	Shot4 start counter
61	34	AR	Shot5 start counter
61	35	AR	AR start counter
61	36	AR	AR fail counter
64	1	-	Total interrupt time
64	2	-	Previous total int time
64	3	-	Unit for V interrupt time
64	4	-	IntTimPrevUnitLnk
64	5	-	Interruption counter
64	6	-	Prev. # of interrupts
64	21	-	EF reactance
64	22	-	Faulty phase (EF)
64	23	-	Number of EFs
64	90	-	Voltage sag counter
64	91	-	Sag total time
64	92	-	Voltage swell counter
64	93	-	Swell total time
64	100/103	-	Time stamp
64	110/113	-	Type
64	120/123	-	Duration
64	130/133	-	Min1
64	140/143	-	Min2
64	150/153	-	Min3
64	160/163	-	Max1
64	170/173	-	Max2

Channel	Data number	Stage	Item
64	180/183	-	Max3
64	190/193	-	Mean1
64	200/203	-	Mean2
64	210/213	-	Mean3
64	300/303	-	Time stamp
64	310/313	-	Type
64	320/323	-	Duration
64	330/333	-	Min1
64	340/343	-	Min2
64	350/353	-	Min3
64	360/363	-	Max1
64	370/373	-	Max2
64	380/383	-	Max3
64	390/393	-	Mean1
64	400/403	-	Mean2
64	410/413	-	Mean3
66	10	CBWEAR	Timestamp 1
66	11	CBWEAR	Phase current IL1
66	12	CBWEAR	Phase current IL2
66	13	CBWEAR	Phase current IL3
66	14	CBWEAR	Timestamp 2
66	21/23	CBWEAR	Alarm1
66	31/33	CBWEAR	Alarm2
107	10/17	IoInt>	Time stamp
107	20/27	IoInt>	Fault current
107	30/37	IoInt>	Elapsed delay
107	50/57	IoInt>	Fault voltage
107	90/97	IoInt>	Group

6. Category F – Slave identification

Channel	Data number	Item
0	1	Device type

7. Category T - Time

Channel	Data number	Item
0	1	SpaBus_Time

8. Category D – Date

Channel	Data number	Item
0	1	SpaBus_Date
0	2	Day of week

9. Category L – Last events

Channel	Data number	Item
0	1	Events

10. Category B – Last events from backup buffer

Channel	Data number	Item
0	1	Reread event

These tables were generated from firmware version 10.108. New firmware versions might bring additions to this list.