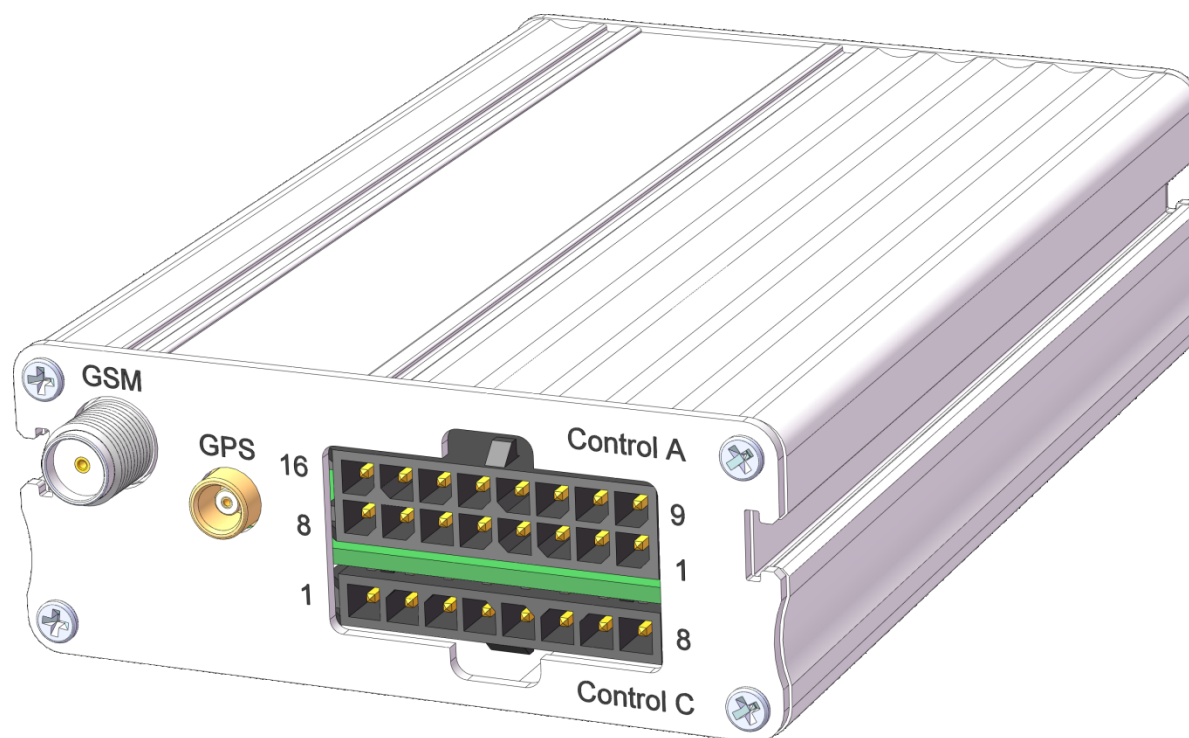


SRT278 AVANT Fleet

Binary Protocol Specification



Version: **12.4**

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Binary Communication Protocol

Unit initiated communication

Message from unit (5-X bytes)

ID	Size	Type	Description
0	20 bit	ID (Serial number)	Last six (6) digits of IMEI (mandatory)
1	4 bit	Sequence number	0-15 (mandatory)
2	4 bit	Report profile number	0-15 (mandatory)
3	8 bit	GSM Major version	0-255
	8 bit	GSM Minor version	0-255
	8 bit	GSM Build	0-255
4	64 bit	Report mask	Report mask used for this report
5	6 bit	Year	2000-2063 (2000+value)
6	4 bit	Month	1-12
7	5 bit	Day	1-31
8	5 bit	Hour	0-23
9	6 bit	Minute	0-59
10	6 bit	Second	0-59
11	8 bit	Message reason	0-255, Appendix A – Message reasons
12	12 bit	External voltage	0-40.95V (0.01*value)
13	12 bit	Battery voltage	0-40.95V (0.01*value)
14	12 bit	AIN1	0-40.95V (0.01*value)
15	12 bit	AIN2	0-40.95V (0.01*value)
16	16 bit	DI/DO	Digital input/output status
17	27 bit	Latitude	0-180 degrees (value/600000) 0 is 90 00' 00" N, 180 is 90 00' 00" S
18	28 bit	Longitude	0-360 degrees (value/600000) 0 is 0 00' 00" E, 360 is 180 00' 00" W
19	8 bit	Speed	0-255 (km/h)
20	9 bit	Heading	0-359 degrees
21	10 bit	Running time	0-1000 (minutes) Ignition on time since previous message
22	10 bit	TimeCounter1	0-1000 (minutes) TimeCounter1 time since previous message
23	12 bit	Mileage	0-409.5km, (0.1*value) Distance since previous message (100m interval)
24	4 bit	GPS satellites	0-15, number of satellites
25	1 bit	GPS fix validity	0: No fix, 1: Valid fix
26	1 bit	GPS fix type	1: 2D, 0: 3D
27	10 bit	MCC	Mobile Country Code (GSM)
28	10 bit	MNC	Mobile Network Code (GSM)
29	16 bit	LAC	Location Area Code (GSM)
30	16 bit	CI	Cell Identification (GSM)
31	10 bit	Temperature	Temperature
32	6 bit	Fix Year	GPS Fix Time – Year
33	4 bit	Fix Month	GPS Fix Time – Month
34	5 bit	Fix Day	GPS Fix Time – Day

ID	Size	Type	Description
35	5 bit	Fix Hour	GPS Fix Time – Hour
36	6 bit	Fix Minute	GPS Fix Time – Minute
37	6 bit	Fix Second	GPS Fix Time – Second
38	5 bit	GSM Signal	GSM Signal Quality – 0-31
39	3 bit	GSM Status	GSM Registration Status
40	3 bit	GPRS Status	GPRS Registration Status
41	50 bit	IMSI	International Mobile Subscriber Identity
42	32 bit	Secondary SeqNo	Secondary sequence number
	0-7 bit	Padding	Padding to make full byte
	8 bit	Checksum	All previous bytes XOR:ed

Temperature Format

The format of the temperature is the same as used to define temperature thresholds in;

#0030 – Temperature Sensor – Threshold 1

and

#0035 – Temperature Sensor – Threshold 2.

GSM Signal Quality

Value Description

0	-113 dBm or less
1	-111 dBm
2–30	-109 to -53 dBm
31	-51 dBm or greater

GSM and GPRS Registration Status Codes

Value Description

0	Not registered on network, and currently not searching for new operator
1	Registered on home network
2	Not registered on network, and currently searching for new operator
3	Registration denied
5	Registered and roaming

Message acknowledge from server (4 bytes)

Size	Type	Description
20 bit	ID (Serial number)	Last six (6) digits of IMEI
4 bit	Sequence number	0-15 same as corresponding message
8 bit	Checksum	All previous bytes XOR:ed

DI/DO bits

Bit no.	I/O
15	Reserved
14	Reserved
13	Reserved
12	Reserved
11	Reserved
10	Reserved
9	Reserved
8	Reserved
7	Vib
6	IR
5	PB
4	AUX
3	IGNITION
2	AUXCTRL
1	PRIVACY
0	DOUT

Server initiated communication

Command from server (5+ bytes)

Size	Type	Description
20 bit	ID (Serial number)	Last six (6) digits of IMEI
4 bit	Sequence number	0-15
8 bit	Command	0-255 See Appendix B – Commands.
0-x bit	Parameter	Command parameter data, if any.
0-7 bit	-	Padding to make full byte.
8 bit	Checksum	All previous bytes XOR:ed

Command acknowledge from unit (5+ bytes)

Size	Type	Description
20 bit	ID (Serial number)	Last six (6) digits of IMEI
4 bit	Sequence number	0-15 same as from incoming command.
8 bit	Command	0-255 See Appendix B – Commands.
0-x bit	Data	Response data, if any.
0-7 bit	-	Padding to make full byte.
8 bit	Checksum	All previous bytes XOR:ed

Appendix A1 – Message Reasons

ID	Description	Flag name
0	Information / Request	
1	AUX alarm on	
2	AUX alarm off	AUXAlarmOffMsgEnable
3	Vibration sensor alarm on	
4	Motion (vibration) start	VSControlMsgEnable
5	Motion (vibration) stop	VSControlMsgEnable
6	IR alarm on	
7	Pushbutton alarm on	
8	Pushbutton alarm off	PBAlarmOffMsgEnable
9	Battery low	BATLowMsgEnable
10	Battery disconnected	BATDisconnectMsgEnable
11	Battery good	BATLowMsgEnable
12	Battery connected	BATDisconnectMsgEnable
13	Battery absent	BATAbsentMsgEnable
14	Battery attached	BATAbsentMsgEnable
15	Main power low	MPLowMsgEnable
16	Main power disconnected	MPDisconnectMsgEnable
17	Main power good	MPLowMsgEnable
18	Main power connected	MPDisconnectMsgEnable
19	Main power absent	MPAbsentMsgEnable
20	Main power attached	MPAbsentMsgEnable
21	AIN1 absent	AIN1AbsentMsgEnable
22	AIN1 low	
23	AIN1 high	
24	AIN1 good	AIN1GoodMsgEnable
25	AIN1 attached	AIN1AbsentMsgEnable
26	AIN2 absent	AIN2AbsentMsgEnable
27	AIN2 low	
28	AIN2 high	
29	AIN2 good	AIN2GoodMsgEnable
30	AIN2 attached	AIN2AbsentMsgEnable
31	Ignition on	IGNMsgEnable
32	Ignition off	IGNMsgEnable
33	AUXCTRL on	AUXCTRLMsgEnable
34	AUXCTRL off	AUXCTRLMsgEnable
35	Temperature alarm 1 Low-High	
36	Temperature alarm 1 High-Low	
37	Temperature alarm 2 Low-High	
38	Temperature alarm 2 High-Low	
39	Temperature sensor absent	TSAbsentMsgEnable
40	Temperature sensor attached	TSAbsentMsgEnable
41	Tow alarm on	
42	GPS fix in timer mode (wakeup / alarm)	GPSFixMsgEnable
43	Reserved	
44	HW reset	HWResetMsgEnable
45	Low voltage mode	LVMMsgEnable
46	Power on message	PWROnMsgEnable

ID	Description	Flag name
47	GPS fix on	
48	Distance report	
49	Periodic report	
50	Idle speed start	IdleSpeedMsgEnable
51	Idle speed end	IdleSpeedMsgEnable
52	Overspeed start	OverspeedMsgEnable
53	Overspeed end	OverspeedMsgEnable
54	Geozone area enter	GeozoneAlarmEnableEnter
55	Geozone area leave	GeozoneAlarmEnableLeave
56	Counters reset	
57	GPS fix off	
58	GPRS lost	
59	SIM Card Change	
60	GPRS OK	
61	Link Reconnected	
62	Privacy On	
63	Privacy Off	
64	Alarm Call Answered By	
65	Alarm Call Not Answered	

Appendix A2 – Message Reasons OVLS Mapping

ID	Description	Priority	Type	Text
0	Information / Request	9	3	Info
1	AUX alarm on	6	0	AuxAlarmOn
2	AUX alarm off	6	0	AuxAlarmOff
3	Vibration sensor alarm on	3	3	VibrationSensor
4	Motion (vibration) start	3	3	MotionStart
5	Motion (vibration) stop	3	3	MotionStop
6	IR alarm on	3	1	IrAlarmOn
7	Pushbutton alarm on	3	4	PbAlarmOn
8	Pushbutton alarm off	3	4	PbAlarmOff
9	Battery low	4	9	BatteryLow
10	Battery disconnected	4	9	BatteryDisconnected
11	Battery good	4	9	BatteryGood
12	Battery connected	4	9	BatteryConnected
13	Battery absent	4	9	BatteryAbsent
14	Battery attached	4	9	BatteryAttached
15	Main power low	4	9	MainPowerLow
16	Main power disconnected	4	9	MainPowerDisconnected
17	Main power good	4	9	MainPowerGood
18	Main power connected	4	9	MainPowerConnected
19	Main power absent	4	9	MainPowerAbsent
20	Main power attached	4	9	MainPowerAttached
21	AIN1 absent	6	2	Ain1Absent
22	AIN1 low	6	2	Ain1Low
23	AIN1 high	6	2	Ain1High
24	AIN1 good	6	2	Ain1Good
25	AIN1 attached	6	2	Ain1Attached
26	AIN2 absent	6	2	Ain2Absent
27	AIN2 low	6	2	Ain2Low
28	AIN2 high	6	2	Ain2High
29	AIN2 good	6	2	Ain2Good
30	AIN2 attached	6	2	Ain2Attached
31	Ignition on	6	1	IgnitionOn
32	Ignition off	6	1	IgnitionOff
33	AUXCTRL on	6	3	AuxctrlOn
34	AUXCTRL off	6	3	AuxctrlOff
35	Temperature alarm 1 Low-High	3	2	TempAlarm1LowToHigh
36	Temperature alarm 1 High-Low	3	2	TempAlarm1HighToLow
37	Temperature alarm 2 Low-High	3	2	TempAlarm2LowToHigh
38	Temperature alarm 2 High-Low	3	2	TempAlarm2HighToLow
39	Temperature sensor absent	3	2	TempSensorAbsent
40	Temperature sensor attached	3	2	TempSensorAttached
41	Tow alarm on	9	8	TowAlarmOn
42	GPS fix in timer mode (wakeup / alarm)	4	6	GpsFixInTimerMode
43	Reserved			-
44	HW reset	6	9	HwReset
45	Low voltage mode	4	8	LowVoltageMode
46	Power on message	9	1	PowerOn

ID	Description	Priority	Type	Text
47	GPS fix on	4	6	GpsFix
48	Distance report	9	7	Distance
49	Periodic report	9	9	Periodic
50	Idle speed start	6	6	IdleSpeedStart
51	Idle speed end	6	6	IdleSpeedEnd
52	Overspeed start	6	6	OverspeedStart
53	Overspeed end	6	6	OverspeedEnd
54	Geozone area enter	9	8	GeozoneEnter
55	Geozone area leave	9	8	GeozoneLeave
56	Counters reset	9	9	CounterReset
57	GPS fix off	4	7	GpsFixLost
58	GPRS lost	9	9	GprsLost
59	SIM Card Change	9	4	NewSim
60	GPRS OK	9	9	GprsOk
61	Link Reconnected	9	9	LinkReconnect
62	Privacy On	6	5	PrivacyOn
63	Privacy Off	6	5	PrivacyOff
64	Alarm Call Answered By	9	5	AlarmCallsAnsweredBy
65	Alarm Call Not Answered	9	5	AlarmCallsNotAnswered

Appendix A3 – Message Reasons – SRT# mapping

ID	Description	SRT# Report Cause
0	Information / Request	2
1	AUX alarm on	22
2	AUX alarm off	22
3	Vibration sensor alarm on	10
4	Motion (vibration) start	1004
5	Motion (vibration) stop	1005
6	IR alarm on	9
7	Pushbutton alarm on	4
8	Pushbutton alarm off	4
9	Battery low	5
10	Battery disconnected	1010
11	Battery good	1011
12	Battery connected	1012
13	Battery absent	1013
14	Battery attached	1014
15	Main power low	1015
16	Main power disconnected	1016
17	Main power good	1017
18	Main power connected	1018
19	Main power absent	1019
20	Main power attached	1020
21	AIN1 absent	1021
22	AIN1 low	1022
23	AIN1 high	1023
24	AIN1 good	1024
25	AIN1 attached	1025
26	AIN2 absent	1026
27	AIN2 low	1027
28	AIN2 high	1028
29	AIN2 good	1029
30	AIN2 attached	1030
31	Ignition on	1031
32	Ignition off	1032
33	AUXCTRL on	1033
34	AUXCTRL off	1034
35	Temperature alarm 1 Low-High	12
36	Temperature alarm 1 High-Low	12
37	Temperature alarm 2 Low-High	12
38	Temperature alarm 2 High-Low	12
39	Temperature sensor absent	12
40	Temperature sensor attached	12
41	Tow alarm on	1041
42	GPS fix in timer mode (wakeup / alarm)	1042
43	Reserved	
44	HW reset	1044
45	Low voltage mode	1045
46	Power on message	1046

ID	Description	SRT# Report Cause
47	GPS fix on	1047
48	Distance report	14
49	Periodic report	3
50	Idle speed start	1050
51	Idle speed end	1051
52	Overspeed start	1052
53	Overspeed end	1053
54	Geozone area enter	16
55	Geozone area leave	16
56	Counters reset	1056
57	GPS fix off	1057
58	GPRS lost	1058
59	SIM Card Change	7
60	GPRS OK	1060
61	Link Reconnected	1061
62	Privacy On	1062
63	Privacy Off	1063
64	Alarm Call Answered By	8
65	Alarm Call Not Answered	8

Appendix B – Commands

#000 – Counter Reset

This command resets the odometer (mileage), ignition and auxctrl counters immediately. A **Counters reset** message will be generated automatically, containing the last set of values before resetting them.

Command #000 Parameters		
Size	Type	Description
- bit	-	Command #000 has no parameters.

#001 – GPS Reset

This command forces a restart of the GPS while the unit is running.

Command #001 Parameters		
Size	Type	Description
- bit	-	Command #001 has no parameters.

#002 – GSM Reset

This command forces a restart of the unit while it is running.

Command #002 Parameters		
Size	Type	Description
- bit	-	Command #002 has no parameters.

#003 – Version Enquiry

This command retrieves the firmware and hardware information from the unit.

Command #003 Parameters (Command)		
Size	Type	Description
- bit	-	Command #000 has no command parameters.

Command #003 Parameters (Response)		
Size	Type	Description
8 bit	Version, GSM major	Range 0-255
8 bit	Version, GSM minor	Range 0-255
8 bit	Version, GSM build	Range 0-255
8 bit	Version, PIC	Range 0-255
8 bit	Version, hardware	Range 0-255

#004 – Configuration

This command sets or retrieves the unit's configuration.

Configuration Parameters		
<i>Note! The parameter is comprised of a sequence of one or more of the following grouping, and the response will contain all sub-parameters of the command sent.</i>		
Size	Type	Description
1 bit	Read or write	0 if the parameter is a read request, 1 if the parameter is a write request.
10 bit	Sub-parameter ID	0-1023. See Appendix C – Configuration Parameters for a list.
0-x bit	Parameter	Sub-parameter data, if any. <i>Note! If a parameter doesn't have any Read section, then there is no sub-parameter data for read requests.</i>

#005 – RLI20

This command is used to manually set the digital output (which is a relay output) high (that is, connect **RLIN** input to **RLOUT** output internally) or low (disconnect).

Note: If Time is not included in the command, the default will be used. TBD seconds.

Command #005 Parameters (Command/Response)		
Size	Type	Description
1 bit	Enable/Disable	1: Set digital output high 0: Set digital output low
16 bit	Time	1-65535 seconds (optional)

#006 – Message Request

Firmware Version 7.0.0

Not available.

Firmware Version 7.0.1 and later

This command is used to manually request a binary format message. The message will be sent to the sender of this command in place of a regular response.

Command #006 Parameters (Command)		
Size	Type	Description
4 bit	Profile Mask	0-15

Appendix C – Configuration Parameters

For parameters or sub-parameters that have the type “Enable/Disable”, “set” means that the bit is 1, and “cleared” means that the bit is 0.

Appendix C – Parameters

#0000 – Profile Select

This parameter determines which GSM profile to use.

Configuration parameters affected are;

#0001 – Profile Configure APN

#0002 – Profile Configure Server

#0067 – SMS Server Primary Number

#0068 – SMS Server Secondary Number

Configuration Parameter #0000 – Write/Response		
Size	Type	Description
4 bit	Profile	Active profile, 0-15

#0001 – Profile Configure APN

This parameter determines the GPRS APN settings for a specific profile.

Configuration Parameter #0001 – Read		
Size	Type	Description
1 bit	Use current	If set to 0, use profile selected by next 4 bits If set to 1, use current profile. Requires next for bits set to 0000
4 bit	Profile	Profile to read, 0-15

Configuration Parameter #0001 – Write/Response		
Size	Type	Description
1 bit	Use current	If set to 0, use profile selected by next 4 bits If set to 1, use current profile. Requires next four bits set to 0000
4 bit	Profile	Profile to configure, 0-15
6 bit	APN server length	0-63. Number of characters in APN server.
x bit	APN server	APN server in clear ASCII, 8 bits per character, and number of characters as above.
6 bit	APN user length	0-63. Number of characters in APN user name.
x bit	APN user	APN user in clear ASCII, 8 bits per character, and number of characters as above.
6 bit	APN password length	0-63. Number of characters in APN user name.
x bit	APN password	APN password in clear ASCII, 8 bits per character, and number of characters as above.

#0002 – Profile Configure Server

This parameter determines the IP server settings for a specific profile.

Configuration Parameter #0002 – Read		
Size	Type	Description
1 bit	Use current	If set to 0, use profile selected by next 4 bits If set to 1, use current profile. Requires next four bits set to 0000
4 bit	Profile	Profile to read, 0-15

Configuration Parameter #0002 – Write/Response		
Size	Type	Description
1 bit	Use current	If set to 0, use profile selected by next 4 bits If set to 1, use current profile. Requires next four bits set to 0000
4 bit	Profile	Profile to configure, 0-15
32 bit	Server IP	IP in network byte order
16 bit	Server Port	Server port number
1 bit	Server Protocol	0 for UDP 1 for TCP (not implemented)
16 bit	Command Port	Local command port number
1 bit	Command Protocol	0 for UDP 1 for TCP (not implemented)

#0003 – GSM Always On Mode

If *GSMAAlwaysOn* is set, both GSM and GPS are on all the time in GSM Always On Mode, until a new command which cancels this configuration is received.

To disable GSM Always On Mode, leave *GSMAAlwaysOn* cleared.

Configuration Parameter #0003 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	GSMAAlwaysOn

#0004 – GSM Ignition Mode

If *GSMIgnitionModeEnable* is set, detection of an off-to-on transition on the **IGN** input turns GSM and GPS on, assuming no other mode takes priority. GSM and GPS are turned off when an on-to-off transition is detected. To disable GSM Ignition Mode, leave *GSMIgnitionModeEnable* cleared.

Configuration Parameter #0004 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	GSMIgnitionModeEnable

#0005 – GSM Timer Mode

This parameter enables or disables the GSM Timer Mode of the unit, together with *GSMOnTime* and *GSMOffTime*.

If *GSMWakeUpEnable* is set, the unit will work in GSM Timer Mode, assuming no other mode takes priority.

To disable GSM Timer Mode, clear *GSMWakeUpEnable*.

Configuration Parameter #0005 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	GSMWakeUpEnable

#0006 – GSM On Time

This parameter defines the GSM On Time used when the unit is in GSM Timer Mode.

Allowed range is 1-65535 for an effective *GSMOnTime* range of 10 seconds to more than 7 days.

Configuration Parameter #0006 – Write/Response		
Size	Type	Description
16 bit	Time	GSMOnTime – 1-65535 in 10s units

#0007 – GSM Off Time

This parameter defines the GSM Off Time used when the unit is in GSM Timer Mode.

Allowed range is 1-65535 for an effective *GSMOffTime* range of 10 seconds to more than 7 days.

Configuration Parameter #0007 – Write/Response		
Size	Type	Description
16 bit	Time	GSMOffTime – 1-65535 in 10s units

#0008 – GPS Timer Mode

This parameter enables or disables the GPS Timer Mode of the unit, together with *GPSONTime* and *GPSOffTime*.

If *GPSWakeUpEnable* is set, the unit will work in GPS Timer Mode, if the GSM is not currently active. The GPS will always be on if the GSM is on.

To disable GPS Timer Mode, clear *GPSWakeUpEnable*.

Configuration Parameter #0008 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	GPSWakeUpEnable

#0009 – GPS On Time

This parameter defines the GPS On Time when the GPS is controlled by the GPS Timer Mode.

Allowed range is 1-65535 for an effective *GPSONTime* range of 10 seconds to more than 7 days.

Configuration Parameter #0009 – Write/Response		
Size	Type	Description
16 bit	Time	GPSONTime – 1-65535 in 10s units

#0010 – GPS Off Time

This parameter defines the GPS Off Time when the GPS is controlled by the GPS Timer Mode.

Allowed range is 1-65535 for an effective *GPSOffTime* range of 10 seconds to more than 7 days.

Configuration Parameter #0010 – Write/Response		
Size	Type	Description
16 bit	Time	GPSOffTime – 1-65535 in 10s units

#0011 – Vibration Sensor Mode Select

These parameters define the conditions under which the **VSALARM** input is used as an alarm input or as an input used to control the GSM Motion Mode.

VSAlarmEnable:

If *VSAlarmEnable* is set, the mode of operations is controlled by the *VSControlsGSM* and *VSAlarmInverted* parameters.

If this parameter is cleared, *VSControlsGSM* and *VSAlarmInverted* must also be cleared.

VSAlarmInverted:

If *VSAlarmInverted* is set, *VSControlsGSM* must be cleared. In this mode, it is the absence of vibrations for the time defined by *VSAlarmIdleTime* that generates the **Vibration sensor alarm on** message.

If *VSAlarmInverted* is cleared, and *VSControlsGSM* is cleared, it is the presence of vibrations that generates the **Vibration sensor alarm on** message. After a vibration has been detected, the unit discards all further vibrations for a time determined by *VSAlarmIdleTime* before it will generate a new message.

Even if sending of the **Vibration sensor alarm on** message is disabled, it is still generated so that it can be used to control DOUT.

VSControlsGSM:

If *VSControlsGSM* is set, any vibrations cause the unit to be put into GSM Motion Mode, and will remain in that mode as long as vibrations continue. *VSAlarmIdleTime* determines the time needed without vibrations to clear the GSM Motion Mode state.

Motion start and **Motion stop** messages may be sent at the beginning respective end of the vibration if the *VSControlMsgEnable* parameter is set.

If the parameter is cleared, how the input is used is determined by *VSAlarmEnable* and *VSAlarmInverted*.

Configuration Parameter #0011 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	VSControlsGSM
1 bit	Enable/Disable	VSAlarmInverted
1 bit	Enable/Disable	VSAlarmEnable

#0012 – Vibration Sensor Alarm Idle Time

This parameter determines the time needed after a **Vibration sensor alarm on** has been generated before a new such message may be generated. It is also the time needed without any vibrations after a **Motion start** message, before a **Motion stop** message may be generated.

Configuration Parameter #0012 – Write/Response		
Size	Type	Description
16 bit	Time	VSAlarmIdleTime – 1-65535 in 1s units

#0013 – VS Alarm DOUT Activation

If VSAlarmActivatesDOUT is set, DOUT will be activated when **Vibration sensor alarm on** is generated, assuming DOUT is not already activated.

Leave this parameter cleared if no DOUT activation is wanted when a **Vibration sensor alarm on** message is generated.

Configuration Parameter #0013 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	VSAlarmActivatesDOUT

#0014 – IR Mode Select

These parameters define the conditions under which the **IRALARM** input may be used to generate messages.

IRAlarmEnable:

If IRAlarmEnable is set, the mode of operations is controlled by IRAlarmInverted.

If IRAlarmEnable is cleared, no messages are generated by activity on the **IRALARM** input.

IRAlarmInverted must also be cleared if this is cleared.

IRAlarmInverted:

If IRAlarmInverted is set and no activity is detected on the **IRALARM** input for a time determined by IRAlarmDetectionTime, an **IR alarm on** message will be generated.

If IRAlarmInverted is cleared, it is activity on the **IRALARM** input for a time determined by IRAlarmDetectionTime that generates the **IR alarm on** message.

After the message has been generated, the unit will wait for a time determined by IRAlarmIdleTime before a new message may be generated.

Even if sending of the **IR alarm on** message is disabled, it will still be generated so that it can be used to control DOUT.

Configuration Parameter #0014 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	IRAlarmInverted
1 bit	Enable/Disable	IRAlarmEnable

#0015 – IR Alarm Detection Time

This parameter determines the time needed to detect presence or absence of activity on the **IRALARM** input. If an actual IR sensor is connected to this input, this parameter should be kept 0 to properly detect activity on the input.

Configuration Parameter #0015 – Write/Response		
Size	Type	Description
16 bit	Time	IRAlarmDetectionTime – 0-65535 in 125ms units

#0016 – IR Alarm Idle Time

This parameter determines the time needed after an **IR alarm on** message has been generated, before a new such message may be generated.

Configuration Parameter #0016 – Write/Response		
Size	Type	Description
16 bit	Time	IRAlarmIdleTime – 1-65535 in 1s units

#0017 – IR Alarm DOUT Activation

If IRAlarmActivatesDOUT is set, DOUT will be activated when **IR alarm on** message is generated, assuming DOUT is not already activated.

Leave this parameter cleared if no DOUT activation is wanted when an **IR alarm on** message is generated.

Configuration Parameter #0017 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	IRAlarmActivatesDOUT

#0018 – PB Mode Select

These parameters define the conditions under which a **PBALARM** input may be used to generate messages.

PBAlarmEnable

If *PBAlarmEnable* is set, the mode of operation is controlled by *PBAlarmInverted*.

If *PBAlarmEnable* is cleared, no messages are generated by activity on the **PBALARM** input. *PBAlarmInverted* must also be cleared if this is cleared.

PBAlarmInverted

If *PBAlarmInverted* is set and **PBALARM** is low (connected to **GND**) for a time determined by *PBAlarmOnDetectionTime*, a **Pushbutton alarm on** message will be generated.

If *PBAlarmInverted* is cleared and **PBALARM** is floating for a time determined by *PBAlarmOnDetectionTime*, a **Pushbutton alarm on** message will be generated.

When a **Pushbutton alarm on** message has been generated, the **PBALARM** input has to be left floating or be connected to **GND**, depending on how *PBAlarmInverted* is set, for a time determined by *PBAlarmOffDetectionTime* before any new such messages may be generated. Even if sending of the **Pushbutton alarm on** message is disabled, it will still be generated so that it can be used to control DOUT.

Configuration Parameter #0018 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	PBAlarmInverted
1 bit	Enable/Disable	PBAlarmEnable

#0019 – PB Alarm On Detection Time

This parameter determines the time needed to detect that the **PBALARM** input is on.

Configuration Parameter #0019 – Write/Response		
Size	Type	Description
16 bit	Time	PBAlarmOnDetectionTime – 1-65535 in 125ms units

#0020 – PB Alarm Off Detection Time

This parameter determines the time needed to detect that the **PBALARM** input is no longer on. A **Pushbutton alarm off** message may be generated at the time when the **PBALARM** input is no longer on, if the *PBAlarmOffMsgEnable* message flag is set.

Configuration Parameter #0020 – Write/Response		
Size	Type	Description
16 bit	Time	PBAlarmOffDetectionTime – 1-65535 in seconds

#0021 – PB Alarm DOUT Activation

If *PBAlarmActivatesDOUT* is set, DOUT will be activated when a **Pushbutton alarm on** message is generated, assuming DOUT is not already activated.

Leave this parameter cleared if no DOUT activation is wanted when a **Pushbutton alarm on** message is generated.

Configuration Parameter #0021 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	PBAlarmActivatesDOUT

#0022 – AUX Mode Select

These parameters define the conditions under which an **AUXALARM** input may be used to generate messages.

AUXAlarmEnable:

If *AUXAlarmEnable* is set, the mode of operation is controlled by *AUXAlarmInverted*.

If *AUXAlarmEnable* is cleared, no messages are generated by activity on the **AUXALARM** input. *AUXAlarmInverted* must also be cleared if this is cleared.

AUXAlarmInverted:

If *AUXAlarmInverted* is set and **AUXALARM** is low (connected to **GND**) for a time determined by *AUXAlarmOnDetectionTime*, an **AUX alarm on** message will be generated.

If *AUXAlarmInverted* is cleared and **AUXALARM** is floating for a time determined by *AUXAlarmOnDetectionTime*, an **AUX alarm on** message will be generated.

When an **AUX alarm on** message has been generated, the **AUXALARM** input has to be left floating or be connected to **GND**, depending on how *AUXAlarmInverted* is set, for a time determined by *AUXAlarmOffDetectionTime* before any new such messages may be generated.

Even if sending of the **AUX alarm on** message is disabled, it will still be generated so that it can be used to control DOUT.

Configuration Parameter #0022 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	AUXAlarmInverted
1 bit	Enable/Disable	AUXAlarmEnable

#0023 – AUX Alarm On Detection Time

This parameter determines the time needed to detect that the **AUXALARM** input is on.

Configuration Parameter #0023 – Write/Response		
Size	Type	Description
16 bit	Time	AUXAlarmOnDetectionTime – 1-65535 in 125ms units

#0024 – AUX Alarm Off Detection Time

This parameter determines the time needed to detect that the **AUXALARM** input is no longer on. An **AUX alarm off** message may be generated at the time when the **AUXALARM** input is no longer on, if the *AUXAlarmOffMsgEnable* message flag is set.

Configuration Parameter #0024 – Write/Response		
Size	Type	Description
16 bit	Time	AUXAlarmOffDetectionTime – 1-65535 in seconds

#0025 – AUX Alarm DOUT Activation

If *AUXAlarmActivatesDOUT* is set, DOUT will be activated when an **AUX alarm on** message is generated, assuming DOUT is not already activated.

Leave this parameter cleared if no DOUT activation is wanted when an **AUX alarm on** message is generated.

Configuration Parameter #0025 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	AUXAlarmActivatesDOUT

#0026 – Temp Sensor – LH-Alarm 1

This parameter determines if a Temp1LH Alarm should be generated when temperature goes from lower than the threshold to higher than, or equal to, the threshold.

To allow for small variations in temperature around the threshold, the actual threshold value used is *Temp1AlarmThreshold+0.5* degrees Celsius for Low-to-High detection.

If set to 1 (enable), an alarm is generated if the temperature goes from lower than the threshold to higher than, or equal to, the threshold.

If set to 0 (disable), no alarm will be generated by the Low-to-High transition, but the new state will be remembered so that a subsequent High-to-Low transition can be detected.

Configuration Parameter #0026 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	Temp1LHAlarmEnable

#0027 – Temp Sensor – LH-Alarm 1 – DOUT Activation

This parameter determines if DOUT should be activated on Temp1LH Alarm detection.

If set to 1 (enable), then DOUT will be activated on Temp1LH Alarm, assuming DOUT is not already activated.

If set to 0 (disable), then a Temp1LH Alarm does not affect DOUT.

Configuration Parameter #0027 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	Temp1LHAlarmActivatesDOUT

#0028 – Temperature Sensor – HL-Alarm 1

This parameter determines if a Temp1HL Alarm should be generated when temperature goes from higher than the threshold to lower than, or equal to, the threshold. To allow for small variations in temperature around the threshold, the actual threshold value used is *Temp1AlarmThreshold-0.5* degrees Celsius for High-to-Low detection.

If set to 1 (enable), an alarm is generated if the temperature goes from higher than the threshold to lower than, or equal to, the threshold.

If set to 0 (disable), no alarm will be generated by the High-to-Low transition, but the new state will be remembered so that a subsequent Low-to-High transition can be detected.

Configuration Parameter #0028 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	Temp1HLAlarmEnable

#0029 – Temp Sensor – HL-Alarm 1 – DOUT Activation

This parameter determines if DOUT should be activated on Temp1HL Alarm detection.

If set to 1 (enable), then DOUT will be activated on Temp1HL Alarm, assuming DOUT is not already activated.

If set to 0 (disable), then a Temp1HL Alarm does not affect DOUT.

Configuration Parameter #0029 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	Temp1HLAlarmActivatesDOUT

#0030 – Temperature Sensor – Threshold 1

This parameter defines *Temp1AlarmThreshold*.

The allowed interval for this parameter is -55.00 to +125.00 in steps of 0.25, in degrees Celsius.

Ex: -25.75 would be 1 for sign bit, 0011001 (25) for Main Temp and 11 (3) for Sub.

Configuration Parameter #0030 – Write/Response		
Size	Type	Description
1 bit	Sign	0:+, 1:-
7 bit	Main	Main Temp
2 bit	Sub	0: x.00 1: x.25 2: x.50 3: x.75

#0031 – Temp Sensor – LH-Alarm 2

This parameter determines if a Temp2LH Alarm should be generated when temperature goes from lower than the threshold to higher than, or equal to, the threshold.

To allow for small variations in temperature around the threshold, the actual threshold value used is *Temp2AlarmThreshold+0.5* degrees Celsius for Low-to-High detection.

If set to 1 (enable), an alarm is generated if the temperature goes from lower than the threshold to higher than, or equal to, the threshold.

If set to 0 (disable), no alarm will be generated by the Low-to-High transition, but the new state will be remembered so that a subsequent High-to-Low transition can be detected.

Configuration Parameter #0031 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	Temp2LHAlarmEnable

#0032 – Temp Sensor – LH-Alarm 2 – DOUT Activation

This parameter determines if DOUT should be activated on Temp2LH Alarm detection.

If set to 1 (enable), then DOUT will be activated on Temp2LH Alarm, assuming DOUT is not already activated.

If set to 0 (disable), then a Temp2LH Alarm does not affect DOUT.

Configuration Parameter #0032 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	Temp2LHAlarmActivatesDOUT

#0033 – Temperature Sensor – HL-Alarm 2

This parameter determines if a Temp2HL Alarm should be generated when temperature goes from higher than the threshold to lower than, or equal to, the threshold.

To allow for small variations in temperature around the threshold, the actual threshold value used is *Temp2AlarmThreshold-0.5* degrees Celsius for High-to-Low detection.

If set to 1 (enable), an alarm is generated if the temperature goes from higher than the threshold to lower than, or equal to, the threshold.

If set to 0 (disable), no alarm will be generated by the High-to-Low transition, but the new state will be remembered so that a subsequent Low-to-High transition can be detected.

Configuration Parameter #0033 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	Temp2HLAlarmEnable

#0034 – Temp Sensor – HL-Alarm 2 – DOUT Activation

This parameter determines if DOUT should be activated on Temp2HL Alarm detection.

If set to 1 (enable), then DOUT will be activated on Temp2HL Alarm, assuming DOUT is not already activated.

If set to 0 (disable), then a Temp2HL Alarm does not affect DOUT.

Configuration Parameter #0034 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	Temp2HLAlarmActivatesDOUT

#0035 – Temperature Sensor – Threshold 2

This parameter defines *Temp2AlarmThreshold*.

The allowed interval for this parameter is -55.00 to +125.00 in steps of 0.25, in degrees Celsius.

Ex: -25.75 would be 1 for sign bit, 0011001 (25) for Main Temp and 11 (3) for Sub.

Configuration Parameter #0035 – Write/Response		
Size	Type	Description
1 bit	Sign	0:+, 1:-
7 bit	Main	Main Temp
2 bit	Sub	0: x.00 1: x.25 2: x.50 3: x.75

#0036 – AIN1 Thresholds

This parameter defines the low and high thresholds used for AIN1 Low and High Alarms.

AIN1LowThreshold

This value must be lower than *AIN1HighThreshold*, and defines the level at which **AIN1** has to be lower than to generate an AIN1 Low Alarm.

Actual minimum value depends on hardware configuration, and will be limited to minimum allowed value automatically.

AIN1HighThreshold:

This value must be higher than *AIN1LowThreshold*, and defines the level at which **AIN1** has to be higher than to generate an AIN1 High Alarm.

Actual maximum value depends on hardware configuration, and will be limited to maximum allowed value automatically.

Configuration Parameter #0036 – Write/Response		
Size	Type	Description
12 bit	Low Threshold	0-40.95V in 10mV units – AIN1LowThreshold
12 bit	High Threshold	0-40.95V in 10mV units – AIN1HighThreshold

#0037 – AIN1 Low Alarm

This parameter determines if AIN1 Low Alarm should be enabled.

If set to 1 (enable), an AIN1 Low Alarm will be generated if the **AIN1** input goes below the threshold specified by *AIN1LowThreshold*.

If set to 0 (disable), no alarm will be generated if **AIN1** input goes below the threshold.

Configuration Parameter #0037 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	AIN1LAlarmEnable

#0038 – AIN1 High Alarm

This parameter determines if AIN1 High Alarm should be enabled.

If set to 1 (enable), an AIN1 High Alarm will be generated if the **AIN1** input goes above the threshold specified by *AIN1HighThreshold*.

If set to 0 (disable), no alarm will be generated if **AIN1** input goes above the threshold.

Configuration Parameter #0038 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	AIN1HAlarmEnable

#0039 – AIN1 Low Alarm DOUT Activation

This parameter determines if DOUT should be activated on AIN1 Low Alarm detection.

If set to 1 (enable), then DOUT will be activated on AIN1 Low Alarm, assuming DOUT is not already activated.

If set to 0 (disable), then an AIN1 Low Alarm does not affect DOUT.

Configuration Parameter #0039 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	AIN1LAlarmActivatesDOUT

#0040 – AIN1 High Alarm DOUT Activation

This parameter determines if DOUT should be activated on AIN1 High Alarm detection.

If set to 1 (enable), then DOUT will be activated on AIN1 High Alarm, assuming DOUT is not already activated.

If set to 0 (disable), then an AIN1 High Alarm does not affect DOUT.

Configuration Parameter #0040 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	AIN1HAlarmActivatesDOUT

#0041 – AIN2 Threshold

This parameter defines the low and high thresholds used for AIN2 Low and High Alarms.

AIN2LowThreshold

This value must be lower than AIN2HighThreshold, and defines the level at which **AIN2** has to be lower than to generate an AIN2 Low Alarm.

Actual minimum value depends on hardware configuration, and will be limited to minimum allowed value automatically.

AIN2HighThreshold

This value must be higher than AIN2LowThreshold, and defines the level at which **AIN2** has to be higher than to generate an AIN2 High Alarm.

Actual maximum value depends on hardware configuration, and will be limited to maximum allowed value automatically.

Configuration Parameter #0041 – Write/Response		
Size	Type	Description
12 bit	Low Threshold	0-40.95V in 10mV units – AIN2LowThreshold
12 bit	High Threshold	0-40.95V in 10mV units – AIN2HighThreshold

#0042 – AIN2 Low Alarm

This parameter determines if AIN2 Low Alarm should be enabled.

If set to 1 (enable), an AIN2 Low Alarm will be generated if the **AIN2** input goes below the threshold specified by *AIN2LowThreshold*.

If set to 0 (disable), no alarm will be generated if **AIN2** input goes below the threshold.

Configuration Parameter #0042 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	AIN2LAlarmActivatesDOUT

#0043 – AIN2 High Alarm

This parameter determines if AIN2 High Alarm should be enabled.

If set to 1 (enable), an AIN2 High Alarm will be generated if the **AIN2** input goes above the threshold specified by *AIN2HighThreshold*.

If set to 0 (disable), no alarm will be generated if **AIN2** input goes above the threshold.

Configuration Parameter #0043 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	AIN2HAlarmActivatesDOUT

#0044 – AIN2 Low Alarm DOUT Activation

This parameter determines if DOUT should be activated on AIN2 Low Alarm detection.

If set to 1 (enable), then DOUT will be activated on AIN2 Low Alarm, assuming DOUT is not already activated.

If set to 0 (disable), then an AIN2 Low Alarm does not affect DOUT.

Configuration Parameter #0044 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	AIN2LAlarmActivatesDOUT

#0045 – AIN2 High Alarm DOUT Activation

This parameter determines if DOUT should be activated on AIN2 High Alarm detection.

If set to 1 (enable), then DOUT will be activated on AIN2 High Alarm, assuming DOUT is not already activated.

If set to 0 (disable), then an AIN2 High Alarm does not affect DOUT.

Configuration Parameter #0045 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	AIN2HAlarmActivatesDOUT

#0046 – Ignition Detection Time

This parameter defines the time to detect that the **IGN** signal is high if it's in a low state, and the time to detect that the signal is low if it's in a high state.

Configuration Parameter #0046 – Write/Response		
Size	Type	Description
16 bit	Time	IGNDetectionTime – 1-65535 in 125ms units

#0047 – AUXCTRL Detection Time

This parameter defines the time to detect that the **AUXCTRL** signal is high if it's in a low state, and the time to detect that the signal is low if it's in a high state.

Configuration Parameter #0047 – Write/Response		
Size	Type	Description
16 bit	Enable/Disable	AUXCTRLDetectionTime – 1-65535 in 125ms units

#0048 – DOUT Activation Time

This parameter defines the time in seconds that DOUT should stay activated when triggered by an alarm that activates DOUT.

If DOUT is already activated for any reason, a subsequent alarm that may trigger activation does not increase the time it stays activated.

Configuration Parameter #0048 – Write/Response		
Size	Type	Description
16 bit	Time	DOUTActivationTime – 1-65535 in 1s units

#0049 – DIN Detection Time

This parameter defines the time to detect that the **PRV**, **VSALARM**, **IRALARM**, **PBALARM** and **AUXALARM** inputs are on, if they go from an off state to an on state, and the time to detect that the inputs are off, if the inputs goes from an on state to an off state.

This detection time is independent of other usages for these inputs and is only used to determine their on and off states.

Each input is on if it's left floating, and off if it's connected to ground (**GND**).

Configuration Parameter #0049 – Write/Response		
Size	Type	Description
16 bit	Time	DINDetectionTime – 1-65535 in 125ms units

#0050 – Privacy Mode

This parameter determines if **PRV** should be used as a privacy input.

If *PRVEnable* is set, GPS information will be removed from reports as long as **PRV** is detected to be in an on state.

If *PRVEnable* is cleared, no information will be removed from the reports, and **PRV** works as a regular digital input.

Configuration Parameter #0050 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	PRVEnable

#0051 – Main Power Threshold

These parameters define the threshold values for Main Power events.

Each value can be configured within the range 0-40.95V in 10mV units, but must adhere to the following restrictions:

MPDisconnectThreshold must be lower than *MPConnectThreshold*.

MPConnectThreshold must be lower than *MPLowThreshold*.

MPLowThreshold must be lower than *MPGoodThreshold*.

Actual minimum and maximum values depends on hardware configuration, and the values specified will be limited to stay within the allowed range automatically.

Configuration Parameter #0051 – Write/Response		
Size	Type	Description
12 bit	Threshold	MPDisconnectThreshold
12 bit	Threshold	MPConnectThreshold
12 bit	Threshold	MPLowThreshold
12 bit	Threshold	MPGoodThreshold

#0052 – Battery Power Threshold

These parameters define the threshold values Battery Power events.

Each value can be configured within the range 0-40.95V in 10mV units, but must adhere to the following restriction:

BATDisconnectThreshold must be lower than *BATLowThreshold*.

Actual minimum and maximum values depends on hardware configuration, and the values specified will be limited to stay within the allowed range automatically.

Configuration Parameter #0052 – Write/Response		
Size	Type	Description
12 bit	Threshold	BATDisconnectThreshold
12 bit	Threshold	BATLowThreshold

#0053 – Tow Distance

This parameter defines the width and height of the enclosing rectangle that the unit has to stay within when the unit is in GPS Timer Mode, and the GSM is not active, to not generate a **Tow alarm on** message.

Allowed range for the distance is 1-31 corresponding to between 100m and 3100m.

Configuration Parameter #0053 – Write/Response		
Size	Type	Description
5 bit	Distance	TowDetectionAlarmDistance – 100m units

#0054 – Periodic Message

These parameters define how often **Periodic report** messages are to be sent when the unit is in one of the four GSM working modes.

The allowed range for the time is 0s to disable **Periodic report** sending for a specific GSM working mode, and 10s to 65535s for periodic sending of the **Periodic report** message.

Configuration Parameter #0054 – Read		
Size	Type	Description
2 bit	Mode select	00: GSM Timer Mode 01: GSM Ignition Mode 10: GSM Motion Mode 11: GSM Always On Mode

Configuration Parameter #0054 – Write/Response		
Size	Type	Description
2 bit	Mode select	00: GSMTimerModePeriodicMsg 01: GSMIgnitionModePeriodicMsg 10: GSMMotionModePeriodicMsg 11: GSMAAlwaysOnModePeriodicMsg
16 bit	Time	Time between each periodic message in seconds

#0055 – Geozone Time Start

These parameters define the start time for Geozone functionality for each of the four GSM working modes.

Geozone alarms may be generated if the current time is between *GeozoneAlarmEnabledTimeStart* and *GeozoneAlarmEnabledTimeEnd*.

Allowed range for hour is 0-23 and for minute is 0-59.

If *GeozoneAlarmEnabledTimeStart* equals *GeozoneAlarmEnabledTimeEnd*, the Geozone functionality will be enabled for the full 24hour day.

Configuration Parameter #0055 – Read		
Size	Type	Description
2 bit	Mode select	00: GSM Timer Mode 01: GSM Ignition Mode 10: GSM Motion Mode 11: GSM Always On Mode

Configuration Parameter #0055 – Write/Response		
Size	Type	Description
2 bit	Mode select	00: GSM Timer Mode 01: GSM Ignition Mode 10: GSM Motion Mode 11: GSM Always On Mode
5 bit	Hour	GeozoneAlarmEnabledTimeStart
6 bit	Minute	

#0056 – Geozone Time End

These parameters define the end time for Geozone functionality for each of the four GSM working modes.

Geozone alarms may be generated if the current time is between *GeozoneAlarmEnabledTimeStart* and *GeozoneAlarmEnabledTimeEnd*.

Allowed range for hour is 0-23 and for minute is 0-59. If *GeozoneAlarmEnabledTimeStart* equals *GeozoneAlarmEnabledTimeEnd*, the Geozone functionality will be enabled for the full 24hour day.

Configuration Parameter #0056 – Read		
Size	Type	Description
2 bit	Mode select	00: GSM Timer Mode 01: GSM Ignition Mode 10: GSM Motion Mode 11: GSM Always On Mode

Configuration Parameter #0056 – Write/Response		
Size	Type	Description
2 bit	Mode select	00: GSM Timer Mode 01: GSM Ignition Mode 10: GSM Motion Mode 11: GSM Always On Mode
5 bit	Hour	GeozoneAlarmEnabledTimeEnd
6 bit	Minute	

#0057 – Geozone Center

These parameters define the Geozone center position for each of the four GSM working modes. The position can be set with two methods.

0: Use supplied position: Latitude and Longitude needs to be supplied using the same encoding as in messages sent.

1: Use current position: the unit will set Latitude and Longitude to the last known position automatically. The supplied Lat/Lon values should in this case be zeroed, while the response will include the actual used. (Not yet implemented)

Configuration Parameter #0057 – Read		
Size	Type	Description
2 bit	Mode select	00: GSM Timer Mode 01: GSM Ignition Mode 10: GSM Motion Mode 11: GSM Always On Mode

Configuration Parameter #0057 – Write/Response		
Size	Type	Description
2 bit	Mode select	00: GSM Timer Mode 01: GSM Ignition Mode 10: GSM Motion Mode 11: GSM Always On Mode
1 bit	Position method	0: Use supplied position 1: Use current position (not implemented)
27 bit	Latitude	GeozoneAlarmCenter
28 bit	Longitude	

#0058 – Geozone Distance

These parameters determine the distance from the center position to the sides of the rectangle that the unit has to stay inside or outside of, for each of the four GSM working modes.

Allowed range for the distance is 1-1023, corresponding to between 100m and 102.3km. It may also be set to 0 to disable Geozone for a specific working mode.

If the *GeozoneAlarmEnableEnter* message flag is set, **Geozone area enter** messages may be sent. And likewise, if the *GeozoneAlarmEnableLeave* message flag is set, **Geozone area leave** messages may be sent. If both flags are cleared, no Geozone messages will be sent.

Configuration Parameter #0058 – Read		
Size	Type	Description
2 bit	Mode select	00: GSM Timer Mode 01: GSM Ignition Mode 10: GSM Motion Mode 11: GSM Always On Mode

Configuration Parameter #0058 – Write/Response		
Size	Type	Description
2 bit	Mode select	00: GSM Timer Mode 01: GSM Ignition Mode 10: GSM Motion Mode 11: GSM Always On Mode
10 bit	Distance	GeozoneAlarmDistance – 100m units

#0059 – Idle Speed Start/Stop

These parameters define the Idle speed start/stop values for each of the four GSM working modes, if the *IdleSpeedMsgEnable* message flag is set.

IdleSpeedStart define the speed at which if the unit detects that it is moving slower than this for a time determined by *IdleSpeedStartTolerance*, may generate an **idle speed start** message.

IdleSpeedStop define the speed at which the unit clears a previous **idle speed start** state and generates an **idle speed stop** message, if the unit moves faster than this for a time determined by *IdleSpeedStopTolerance*.

To disable message generation for only some of the working modes, set the speeds to 0. If only one of the speeds is set to 0, both will be set to 0 by the unit.

Configuration Parameter #0059 – Read		
Size	Type	Description
2 bit	Mode select	00: GSM Timer Mode 01: GSM Ignition Mode 10: GSM Motion Mode 11: GSM Always On Mode

Configuration Parameter #0059 – Write/Response		
Size	Type	Description
2 bit	Mode select	00: GSM Timer Mode 01: GSM Ignition Mode 10: GSM Motion Mode 11: GSM Always On mode
8 bit	Speed	IdleSpeedStart – km/h
8 bit	Speed	IdleSpeedStop – km/h

#0060 – Idle Speed Tolerance

These parameters define the times needed to detect **idle speed start** and **idle speed stop** conditions for each of the four GSM working modes.

Configuration Parameter #0060 – Read		
Size	Type	Description
2 bit	Mode select	00: GSM Timer Mode 01: GSM Ignition Mode 10: GSM Motion Mode 11: GSM Always On Mode

Configuration Parameter #0060 – Write/Response		
Size	Type	Description
2 bit	Mode select	00: GSM Timer Mode 01: GSM Ignition Mode 10: GSM Motion Mode 11: GSM Always On Mode
8 bit	Time	IdleSpeedStartTolerance – seconds
8 bit	Time	IdleSpeedStopTolerance – seconds

#0061 – Overspeed Start/Stop

These parameters define the Overspeed start/stop values for each of the four GSM working modes, if the *OverspeedMsgEnable* message flag is set.

OverspeedStart define the speed at which if the unit detects that it is moving faster than this for a time determined by *OverspeedStartTolerance*, may generate an **Overspeed start** message.

OverspeedStop define the speed at which the unit clears a previous **Overspeed start** state and generates an **Overspeed stop** message, if the unit moves slower than this for a time determined by *OverspeedStopTolerance*.

To disable message generation for only some of the working modes, set the speeds to 0. If only one of the speeds is set to 0, both will be set to 0 by the unit.

Configuration Parameter #0061 – Read		
Size	Type	Description
2 bit	Mode select	00: GSM Timer Mode 01: GSM Ignition Mode 10: GSM Motion Mode 11: GSM Always On Mode

Configuration Parameter #0061 – Write/Response		
Size	Type	Description
2 bit	Mode select	00: GSM Timer Mode 01: GSM Ignition Mode 10: GSM Motion Mode 11: GSM Always On Mode
8 bit	Speed	OverspeedStart – km/h
8 Bit	Speed	OverspeedStop – km/h

#0062 – Overspeed Tolerance

These parameters define the times needed to detect **Overspeed start** and **Overspeed stop** conditions for each of the four GSM working modes.

Configuration Parameter #0062 – Read		
Size	Type	Description
2 bit	Mode select	00: GSM Timer Mode 01: GSM Ignition Mode 10: GSM Motion Mode 11: GSM Always On Mode

Configuration Parameter #0062 – Write/Response		
Size	Type	Description
2 bit	Mode select	00: GSM Timer Mode 01: GSM Ignition Mode 10: GSM Motion Mode 11: GSM Always On Mode
8 bit	Time	OverspeedStartTolerance – seconds
8 bit	Time	OverspeedStopTolerance – seconds

#0063 – Distance

These parameters determine, for the four GSM working modes, the distance that the unit needs to move before generating a **Distance report** message.

To disable generation of this message for a working mode, set *DistMsgDistance* to 0.

Allowed range for *DistMsgDistance* is 0-1023, corresponding to 0 – disabled and range 100m to 102.3km.

Configuration Parameter #0063 – Read		
Size	Type	Description
2 bit	Mode select	00: GSM Timer Mode 01: GSM Ignition Mode 10: GSM Motion Mode 11: GSM Always On Mode

Configuration Parameter #0063 – Write/Response		
Size	Type	Description
2 bit	Mode select	00: GSM Timer Mode 01: GSM Ignition Mode 10: GSM Motion Mode 11: GSM Always On Mode
10 bit	Distance interval	DistMsgDistance – 100m units

#0064 – GPS Fix On Message Filtered

This parameter controls the **GPS fix on** message generation for each of the four GSM working modes.

Allowed range for *GPSFixMsgOnFilter* is 0-255 seconds.

A value of 0 means that no **GPS fix on** messages will be generated, while 1-255 means the time with fix required to generate a **GPS fix on** message. If a **GPS fix on** message has been generated, a **GPS fix off** message is required to be generated before a new **GPS fix on** message can be sent.

Configuration Parameter #0064 – Read		
Size	Type	Description
2 bit	Mode select	00: GSM Timer Mode 01: GSM Ignition Mode 10: GSM Motion Mode 11: GSM Always On Mode

Configuration Parameter #0064 – Write/Response		
Size	Type	Description
2 bit	Mode select	00: GSM Timer Mode 01: GSM Ignition Mode 10: GSM Motion Mode 11: GSM Always On Mode
8 bit	Time	GPSFixMsgOnFilter – seconds

#0065 – GPS Fix Off Message Filtered

This parameter controls the **GPS fix off** message generation for each of the four GSM working modes.

Allowed range for *GPSFixMsgOffFilter* is 0-255 seconds.

A value of 0 means that no **GPS fix off** messages will be generated, while 1-255 means the time without fix required to generate a **GPS fix off** message. If a **GPS fix off** message has been generated, a **GPS fix on** message is required to be generated before a new **GPS fix off** message can be generated.

Configuration Parameter #0065 – Read		
Size	Type	Description
2 bit	Mode select	00: GSM Timer Mode 01: GSM Ignition Mode 10: GSM Motion Mode 11: GSM Always On Mode

Configuration Parameter #0065 – Write/Response		
Size	Type	Description
2 bit	Mode select	00: GSM Timer Mode 01: GSM Ignition Mode 10: GSM Motion Mode 11: GSM Always On Mode
8 bit	Time	GPSFixMsgOffFilter – seconds

#0066 – Maximum GSM Extra On-Time

This parameter defines the maximum extra time that the unit can be forced to stay active when it would normally turn off, in order to finish processing commands or finish sending messages.

If no commands need processing or messages need to be sent, the unit will be kept forced active.

Allowed range is 0-15 minutes.

Configuration Parameter #0066 – Write/Response		
Size	Type	Description
4 bit	Time	GSMEExtraOnTime – minutes

#0067 – SMS Server Primary Number

This parameter defines the number that an SMS will be sent to if GPRS is lost. It is also the number used to send alarm classed reports to, that needs to be sent right away instead of buffered and sent when GPRS returns.

This number also serves as an access number for incoming SMS.

Configuration Parameter #0067 – Read		
Size	Type	Description
1 bit	Use current	If set to 0, use profile selected by next 4 bits If set to 1, use current profile. Requires next four bits set to 0000
4 bit	Profile	Profile to read, 0-15

Configuration Parameter #0067 – Write/Response		
Size	Type	Description
1 bit	Use current	If set to 0, use profile selected by next 4 bits If set to 1, use current profile. Requires next 4 bits set to 0000.
4 bit	Profile	Profile to configure, 0-15
5 bit	Number length	0-19. Number of characters in number string
x bit	Number	Number in clear ASCII, 8 bits per character, and number of characters as above.

#0068 – SMS Server Secondary Number

This parameter defines a secondary number that an SMS will be sent to if GPRS is lost. It is also the secondary number used to send alarm classed reports to, that needs to be sent right away instead of buffered and sent when GPRS returns.

This number also serves as a secondary access number for incoming SMS.

Configuration Parameter #0068 – Read		
Size	Type	Description
1 bit	Use current	If set to 0, use profile selected by next 4 bits If set to 1, use current profile. Requires next four bits set to 0000
4 bit	Profile	Profile to read, 0-15

Configuration Parameter #0068 – Write/Response		
Size	Type	Description
1 bit	Select	If set to 0, use profile selected by next 4 bits If set to 1, use current profile. Requires next 4 bits set to 0000.
4 bit	Profile	Profile to configure, 0-15
5 bit	Number length	0-19. Number of characters in number string
x bit	Number	Number in clear ASCII, 8 bits per character, and number of characters as above.

#0069 – GPRS Roaming Settings

These parameters control the behavior for when the unit is roaming.

RoamAllowIP:

If set to 1 (enable), behavior is controlled by RoamPreferredOnly.

If set to 0 (disable), reports will not be sent over GPRS while the unit is roaming.

RoamPreferredOnly:

If set to 1 (enable), the unit will only use GPRS with operators listed in the list of preferred operators, if RoamAllowIP is set to 1.

If set to 0 (disable), and RoamAllowIP is set to 1, the unit will use GPRS whenever available even when roaming.

Configuration Parameter #0069 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	RoamAllowIP
1 bit	Enable/Disable	RoamPreferredOnly

#0070 – Preferred Operator Settings

With this parameter, up to 16 lists of preferred operators can be configured for four operators per list for a total of 64 possible preferred operators.

This could be used to keep one list of preferred operators for each country the unit is supposed to be in, but each list can also hold operators for four countries if so desired.

For each operator, MCC and MNC need to be specified.

Configuration Parameter #0070 – Read		
Size	Type	Description
4 bit	Select	Operator list to read, 0-15

Configuration Parameter #0070 – Write/Response		
Size	Type	Description
4 bit	Select	Preferred operator list 0-15
10 bit	MCC1	MCC for first operator in selected list
10 bit	MNC1	MNC for first operator in selected list
10 bit	MCC2	MCC for second operator in selected list
10 bit	MNC2	MNC for second operator in selected list
10 bit	MCC3	MCC for third operator in selected list
10 bit	MNC3	MNC for third operator in selected list
10 bit	MCC4	MCC for fourth operator in selected list
10 bit	MNC4	MNC for fourth operator in selected list

#0071 – Report Profile Select

With this parameter, the report profile is selected.

This profile is different from the GSM profile.

Configuration Parameter #0071 – Write/Response		
Size	Type	Description
4 bit	Profile	Active report profile, 0-15

#0072 – Idle speed Ignition Delay

This parameter defines the time from that the **IGN** signal is on before idle speed detection is started, for each of the four GSM working modes.

Configuration Parameter #0072 – Read		
Size	Type	Description
2 bit	Mode select	00: GSM Timer Mode 01: GSM Ignition Mode 10: GSM Motion Mode 11: GSM Always On Mode

Configuration Parameter #0072 – Write/Response		
Size	Type	Description
2 bit	Mode select	00: GSM Timer Mode 01: GSM Ignition Mode 10: GSM Motion Mode 11: GSM Always On Mode
4 bit	Time	IdleSpeedIgnitionDelay – minutes

#0073 – Vibration Sensor Alarm On Detection Time

This parameter defines the time needed to detect that vibrations are occurring when *VSArmEnable* is set, *VSArmInverted* is cleared and *VSControlsGSM* is set or cleared. When this is set to 0, there is no detection time and any vibrations cause immediate detection.

When set to 1-99, the actual detection time is 20-30 seconds plus the value configured for an effective range of 21-129 seconds.

To count as vibration, there must be vibrations more often than every 10 seconds during the detection time prior to 20 seconds plus the set value, as well as at least one vibration in the interval 20-30 seconds plus the set value.

If 10 seconds or more pass since last vibration and the detection timer is still running, the timer will be reset.

Configuration Parameter #0073 – Write/Response		
Size	Type	Description
8 bit	Time	VSArmOnDetectionTime

#0074 – DOUT Default State

This parameter defines the default state for DOUT. When DOUT is activated through command or in conjunction with an event, the DOUT state will be inverted.

Configuration Parameter #0074 – Write/Response		
Size	Type	Description
1 bit	DOUT State	DOUTDefaultState

#0075 – DOUT Timer Control

This parameter enables or disables timer based DOUT control.

Configuration Parameter #0075 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	DOUTTimerControl

#0076 – DOUT Timer Control Start Time

This parameter defines the time when DOUT is activated while under DOUT timer control.

Configuration Parameter #0076 – Write/Response		
Size	Type	Description
8 bit	Time	DOUTTimerControlStartTimeHour
8 bit	Time	DOUTTimerControlStartTimeMinute

#0077 – DOUT Timer Control Stop Time

This parameter defines the time when DOUT is de-activated while under DOUT timer control.

Configuration Parameter #0077 – Write/Response		
Size	Type	Description
8 bit	Time	DOUTTimerControlStopTimeHour
8 bit	Time	DOUTTimerControlStopTimeMinute

#0078 – DOUT Timer Control Weekday Mask

This parameter defines for which weekdays the DOUT timer control is enabled.

b_6 : Monday, b_5 : Tuesday, ... b_1 : Saturday, b_0 : Sunday

Configuration Parameter #0078 – Write/Response		
Size	Type	Description
7 bit	Day mask	DOUTTimerControlWeekdayMask

#0079 – Privacy Input Toggle Mode

This parameter is part of the Driver's Log functionality.

To enable driver's log functionality, this parameter needs to be set to enable.

Note: Only for use with units that has been delivered with driver's log functionality enabled (hardware modifications required).

Configuration Parameter #0079 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	PrivacyToggleMode

#0080 – AIn1 and AIn2 Disable

This parameter is part of the Driver's Log functionality.

This parameter needs to be set to true for driver's log functionality to work.

Note: Only for use with units that has been delivered with driver's log functionality enabled (hardware modifications required).

Configuration Parameter #0080 – Write/Response		
Size	Type	Description
1 bit	True/False	AIN1AndAIN2Disable

#0081 – Vibration Sensor Alarm off Detection Time

Configuration Parameter #0081 – Write/Response		
Size	Type	Description
8 bit	Time	VSArmOffDetectionTime

#0082 – DOUT Alarm State

This parameter defines the DOUT state when DOUT is triggered by an alarm.

Configuration Parameter #0082 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	DOUTAlarmState

#0083 – Ignition Off to Unit Off Delay

This parameter is used to set a delay time to keep the unit on for some additional time after IGN off is detected, in GSM Ignition Mode.

The delay time is set in 10 second units, for a maximum delay time of 42.5 minutes.

Configuration Parameter #0083 – Write/Response		
Size	Type	Description
8 bit	Time	IgnitionOffToUnitOffDelay

#0084 – Automatic Reset on GPRS Error

Configuration Parameter #0084 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	GPRSAutoreset

#0085 – Include Google Maps in Custom Text Format

This parameter determines if a Google Maps link should be included in reports when Custom Text is set as report format.

Configuration Parameter #0085 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	Include Google Maps

#0100 – Message Enable Mask

Message number X corresponds to bit X (b_X) in the 256-bit long *MsgEnableMask* $b_{255}b_{254} \dots b_2b_1b_0$. Set a bit ($b_X = 1$) to enable a message, and clear a bit ($b_X = 0$) to disable a message. The full configure bit-string will then be for a write:

1 0001100100 $b_{255}b_{254} \dots b_2b_1b_0$

A read will similarly be:

0 0001100100

Disabling a message does not correspond to actually disabling the alarm that generates the message.

For message numbers that no message has yet been defined, the bit should be cleared.

Some messages, when enabled, set a flag as well. If more than one message can set a certain flag, the flag will remain set until all those messages are cleared. For a list of message/flag correspondence, see

Appendix A1 – Message Reasons.

Configuration Parameter #0100 – Write/Response		
Size	Type	Description
256 bit	Bitmask	MsgEnableMask – $b_{255}b_{254} \dots b_2b_1b_0$

#0101 – Message Alarm Classification Full

To mark a message as alarm classed so that it will be sent over SMS if GPRS is not available, set the bit in *MsgAlarmClassification* ~~*MsgClassificationMask*~~ $b_{255}b_{254} \dots b_2b_1b_0$ that corresponds to the message number that is to be selected as alarm classed. Clear any bits that are not to be alarm classified. The full configure bit-string will then be for a write:

1 0001100101 $b_{255}b_{254} \dots b_2b_1b_0$

A read will similarly be:

0 0001100101

Configuration Parameter #0101 – Write/Response		
Size	Type	Description
256 bit	Bitmask	MsgAlarmClassification – $b_{255}b_{254} \dots b_2b_1b_0$

#0102 – Report Profile Mask

With this parameter, report message fields can be enabled or disabled unless they are marked as mandatory and are always marked enabled.

The padding and checksum fields are not part of this report mask.

The unit can hold 16 different configurations for the report message, but only 15 are user configurable, with the last (15) having all messages enabled.

The format of the *MsgReportMask* is $b_{63}b_{62} \dots b_1b_0$ where b_X corresponds to field ID X .

The full configure bit-string will then be for a write:

1 0001100110 0001 $b_{63}b_{62} \dots b_1b_0$

A read will similarly be:

0 0001100110 0001

Configuration Parameter #0102 – Read		
Size	Type	Description
4 bit	Profile number	Profile to read, 0-15

Configuration Parameter #0102 – Write/Response		
Size	Type	Description
4 bit	Profile number	0-14 user configurable 15 all messages enabled and can't be changed
64 bit	Bitmask	MsgReportMask – $b_{63}b_{62} \dots b_4b_3111$

#0103 – Message Redundancy Classification Threshold

Firmware Version 7.0.0

Not available.

Firmware Version 7.0.1 and later

This parameter defines the amount of already buffered messages before the unit ceases to generate messages classed as redundant in *MsgRedundancyMask*. The amount is specified as percent of the maximum buffer capacity.

Allowed range for the percentage is 0-100, where 0 means that no messages classified as redundant will be generated unless the message buffer is completely empty. If set to 100, messages will always be generated regardless of *MsgRedundancyMask*.

Configuration Parameter #0103 – Write/Response		
Size	Type	Description
7 bit	Percentage	MsgRedundancyThreshold – 1% units, 0-100.

#0104 – Message Redundancy Classification Mask

Firmware Version 7.0.0

Not available.

Firmware Version 7.0.1 and later

To mark a message as redundant so that it won't be generated unless GPRS is functioning satisfactory at the moment, set the bit in *MsgRedundancyMask* $b_{255}b_{254} \dots b_2b_1b_0$ that corresponds to the message number that is to be selected as redundant. Clear any bits that are not to be classified as redundant.

The full configure bit-string will then be for a write:

1 0001101000 $b_{255}b_{254} \dots b_2b_1b_0$

A read would similarly be:

0 0001101000

Configuration Parameter #0104 – Write/Response		
Size	Type	Description
256 bit	Bitmask	MsgRedundancyMask – $b_{255}b_{254} \dots b_2b_1b_0$

#0105 – Report Format GPRS

Firmware Version 7.0.0

Not available.

Firmware Version 7.0.1 and later

This parameter specifies what protocol to use for outgoing alarm and report messages that are sent with GPRS. If a protocol supports or requires acknowledgements for sent messages, the acknowledgements are required to match the requirements for the selected protocol.

Allowed values for protocols are the Protocol ID:s listed in Appendix D – Protocols as either “Supported” or with “Limited Support” for Messages.

Configuration Parameter #0105 – Write/Response		
Size	Type	Description
6 bit	Protocol ID	MsgProtocolGPRS

#0106 – Custom Message Text Format GPRS

Not available.

Firmware Version 7.0.0

Firmware Version 7.0.1 and later

This parameter determines the custom message text to use for reports and alarm messages if the currently active message protocol supports custom text.

Configuration Parameter #0106 – Write/Response		
Size	Type	Description
1 bit	Priority class	If set to 0, configure text for messages not flagged in the <i>MsgAlarmClassification</i> mask. If set to 1, configure text for messages flagged in the <i>MsgAlarmClassification</i> mask.
8 bit	Prefix length	0-160. Number of characters in text prefix.
x bit	Prefix text	Prefix text in clear ASCII, 8 bits per character, and number of characters as defined by Prefix length above.
8 bit	Custom text length	0-160. Number of characters in main text.
x bit	Custom text	Custom text in clear ASCII, 8 bits per character, and number of characters as defined by Custom text length above.
8 bit	Suffix length	0-160. Number of characters in text suffix.
x bit	Suffix text	Suffix text in clear ASCII, 8 bits per character, and number of characters as defined by Suffix length above.

Note! The sum of the Prefix, Custom Text and Suffix lengths may not exceed 160 characters!

#0107 – Report Format SMS

This parameter specifies what protocol to use for outgoing alarm and report messages that are sent with SMS. If a protocol supports or requires acknowledgements for sent messages, the acknowledgements are required to match the requirements for the selected protocol.

Allowed values for protocols are the Protocol ID:s listed in Appendix D – Protocols as either “Supported” or with “Limited Support” for Messages.

Configuration Parameter #0107 – Write/Response		
Size	Type	Description
6 bit	Protocol ID	MsgProtocolSMS

#0108 – Custom Message Text Format SMS

This parameter determines the custom message text to use for reports and alarm messages if the currently active message protocol supports custom text.

Configuration Parameter #0108 – Write/Response		
Size	Type	Description
1 bit	Priority class	If set to 0, configure text for messages not flagged in the <i>MsgAlarmClassification</i> mask. If set to 1, configure text for messages flagged in the <i>MsgAlarmClassification</i> mask.
8 bit	Prefix length	0-160. Number of characters in text prefix.
x bit	Prefix text	Prefix text in clear ASCII, 8 bits per character, and number of characters as defined by Prefix length above.
8 bit	Custom text length	0-160. Number of characters in main text.
x bit	Custom text	Custom text in clear ASCII, 8 bits per character, and number of characters as defined by Custom text length above.
8 bit	Suffix length	0-160. Number of characters in text suffix.
x bit	Suffix text	Suffix text in clear ASCII, 8 bits per character, and number of characters as defined by Suffix length above.

Note! The sum of the Prefix, Custom Text and Suffix lengths may not exceed 160 characters!

#0109 – Report Priority GPRS Full

This parameter determines the report priority for all message reasons that may be sent over GPRS. For each individual message reason, two bits are used to specify the report priority. To specify report priority for message reason n , set or clear the bits in A_n . The following is intended to illustrate what the bitmask looks like.

$$RptPriorityGPRSFull = \overbrace{b_{511}b_{510}}^{A_{255}} \overbrace{b_{509}b_{508}}^{A_{254}} \dots \overbrace{b_3b_2}^{A_1} \overbrace{b_1b_0}^{A_0}$$

The full configure bit-string will then be for a write:

$$1\ 0001101101\ A_{255}A_{254} \dots A_2A_1A_0$$

A read will similarly be:

$$0\ 0001101101$$

Configuration Parameter #0109 – Write/Response		
Size	Type	Description
512 bit	Bitmask	RptPriorityGPRSFull

#0110 – Report Priority GPRS Single

This parameter determines the report priority for a single message reason that may be sent over GPRS.

Configuration Parameter #0110 – Read		
Size	Type	Description
8 bit	MsgReason	The message reason for which to read the report priority

Configuration Parameter #0110 – Write/Response		
Size	Type	Description
8 bit	MsgReason	The message reason for which the report priority is set
2 bit	RptPriority	Report priority

#0111 – Report Priority SMS Full

This parameter determines the report priority for all message reasons that may be sent over SMS. For each individual message reason, two bits are used to specify the report priority. To specify report priority for message reason n , set or clear the bits in A_n . The following is intended to illustrate what the bitmask looks like.

$$RptPrioritySMSFull = \overbrace{b_{511}b_{510}}^{A_{255}} \overbrace{b_{509}b_{508}}^{A_{254}} \dots \overbrace{b_3b_2}^{A_1} \overbrace{b_1b_0}^{A_0}$$

The full configure bit-string will then be for a write:

$$1\ 0001101111\ A_{255}A_{254} \dots A_2A_1A_0$$

A read will similarly be:

$$0\ 0001101111$$

Configuration Parameter #0111 – Write/Response		
Size	Type	Description
512 bit	Bitmask	RptPrioritySMSFull

#0112 – Report Priority SMS Single

This parameter determines the report priority for a single message reason that may be sent over SMS.

Configuration Parameter #0112 – Read		
Size	Type	Description
8 bit	MsgReason	The message reason for which to read the report priority

Configuration Parameter #0112 – Write/Response		
Size	Type	Description
8 bit	MsgReason	The message reason for which the report priority is set
2 bit	RptPriority	Report priority

#0113 – Message Alarm Classification Single

Configuration Parameter #0113 – Read		
Size	Type	Description
8 bit	MsgReason	

Configuration Parameter #0113 – Write/Response		
Size	Type	Description
8 bit	MsgReason	
1 bit		

#0114 – OVLS Priority and Type

This parameter determines the OVLS priority and alarm type fields for a single message reason.

The allowed values 0-9 corresponds directly to the priority meaning or alarm type defined in the OVLS standard, while the value 10 is used in place of the space character ' '.

Configuration Parameter #0114 – Read		
Size	Type	Description
8 bit	MsgReason	The message reason for which to read the OVLS priority meaning and alarm type

Configuration Parameter #0114 – Write/Response		
Size	Type	Description
8 bit	MsgReason	The message reason for which the OVLS priority meaning and alarm type is set
4 bit	OVLS Priority	OVLS priority meaning
4 bit	OVLS Type	OVLS alarm type

#0116 – SMS Number Group

With this parameter, up to three number groups can be specified, each with three numbers. These number groups may be used to allow for different alarms and reports to be sent to different numbers. These numbers do not replace the primary and secondary numbers specified in #0067 and #0068.

First number group have identifier 0, second have identifier 1 and third have identifier 2.

Configuration Parameter #0116 – Read		
Size	Type	Description
2 bit	Identifier	Number group identifier

Configuration Parameter #0116 – Write/Response		
Size	Type	Description
2 bit	Identifier	Number group identifier
5 bit	Number length	0-19. Number of characters in number string
x bit	Number	Number in clear ASCII, 8 bits per character, and number of characters as above.
5 bit	Number length	0-19. Number of characters in number string
x bit	Number	Number in clear ASCII, 8 bits per character, and number of characters as above.
5 bit	Number length	0-19. Number of characters in number string
x bit	Number	Number in clear ASCII, 8 bits per character, and number of characters as above.

#0117 – Voice Number Group

With this parameter, up to four number groups can be specified, each with three numbers. Three of the number groups may be used to allow for alarm calls to be made after an alarm or report, while the fourth group may be used as access numbers so that only the specified numbers are allowed to call in to the unit.

The number groups used for alarm calls have identifiers 0 to 2, and the number group used for access numbers have identifier 3.

Configuration Parameter #0117 – Read		
Size	Type	Description
2 bit	Identifier	Number group identifier

Configuration Parameter #0117 – Write/Response		
Size	Type	Description
2 bit	Identifier	Number group identifier
5 bit	Number length	0-19. Number of characters in number string
x bit	Number	Number in clear ASCII, 8 bits per character, and number of characters as above.
5 bit	Number length	0-19. Number of characters in number string
x bit	Number	Number in clear ASCII, 8 bits per character, and number of characters as above.
5 bit	Number length	0-19. Number of characters in number string
x bit	Number	Number in clear ASCII, 8 bits per character, and number of characters as above.

#0118 – Voice Number Group Parameters

This parameter configures the microphone and speaker settings, as well as max duration of the alarm calls, number of call attempts that should be made and the timeout for each call attempt, for the voice number groups used for alarm calls.

Configuration Parameter #0118 – Read		
Size	Type	Description
2 bit	Identifier	Number group identifier

Configuration Parameter #0118 – Write/Response		
Size	Type	Description
2 bit	Identifier	Number group identifier
1 bit	Enable/Disable	Microphone
1 bit	Enable/Disable	Speaker
8 bit	Time	Max alarm call duration in 10second units
8 bit	Tries	Number of attempts to set up call
8 bit	Time	Timeout per call attempt in seconds

#0119 – SMS Number Group per Message Type Full

This parameter determines which SMS number group to send an alarm or report to. For each individual message reason, two bits are used to specify the number group with 00 (0) corresponding to the first number group and 10 (2) corresponding to the third. When set to 11 (3) the report will be sent over GPRS or to the primary/secondary SMS numbers depending on configuration.

To specify number group for message reason n , set or clear the bits in A_n . The following is intended to illustrate what the bitmask looks like.

$$SmsNGMMsgTypeFull = \overbrace{b_{511}b_{510}}^{A_{255}} \overbrace{b_{509}b_{508}}^{A_{254}} \dots \overbrace{b_3b_2}^{A_1} \overbrace{b_1b_0}^{A_0}$$

The full configure bit-string will then be for a write:

$$1\ 0001110111\ A_{255}A_{254} \dots A_2A_1A_0$$

A read will similarly be:

$$0\ 0001110111$$

Configuration Parameter #0119 – Write/Response		
Size	Type	Description
512 bit	Bitmask	SmsNGMMsgTypeFull

#0120 – SMS Number Group Message Type Single

This parameter determines the SMS number group for a single message reason that may be sent.

Configuration Parameter #0120 – Read		
Size	Type	Description
8 bit	MsgReason	The message reason from which to read the SMS number group

Configuration Parameter #0120 – Write/Response		
Size	Type	Description
8 bit	MsgReason	The message reason for which the SMS number group is set
2 bit	SmsNGMMsgType	

#0121 – Voice Number Group Message Type Full

This parameter determines which voice number group to make an alarm call to.

For each individual message reason, two bits are used to specify the number group with 00 (0) corresponding to the first number group and 10 (2) corresponding to the third. When set to 11 (3) no alarm call will be made for the specified message reason.

To specify number group for message reason n , set or clear the bits in A_n . The following is intended to illustrate what the bitmask looks like.

$$VoiceNGMMsgTypeFull = \overbrace{b_{511}b_{510}}^{A_{255}} \overbrace{b_{509}b_{508}}^{A_{254}} \dots \overbrace{b_3b_2}^{A_1} \overbrace{b_1b_0}^{A_0}$$

The full configure bit-string will then be for a write:

$$1\ 0001111001\ A_{255}A_{254} \dots A_2A_1A_0$$

A read will similarly be:

$$0\ 0001111001$$

Configuration Parameter #0121 – Write/Response		
Size	Type	Description
512 bit	Bitmask	VoiceNGMMsgTypeFull

#0122 – Voice Number Group Message Type Single

This parameter determines the voice number group for a single message reason.

Configuration Parameter #0122 – Read		
Size	Type	Description
8 bit	MsgReason	The message reason from which to read the voice number group

Configuration Parameter #0122 – Write/Response		
Size	Type	Description
8 bit	MsgReason	The message reason for which the voice number group is set
2 bit	VoiceNGMMsgType	

#0123 – Report Format per Number Group

This parameter specifies what protocol to use for outgoing alarm and report messages that are sent to an SMS number group. If a protocol supports or requires acknowledgements for sent messages, the acknowledgements are required to match the requirements for the selected protocol.

Allowed values for protocols are the Protocol ID:s listed in Appendix D – Protocols as either “Supported” or with “Limited Support” for Messages.

Configuration Parameter #0123 – Read		
Size	Type	Description
2 bit	Identifier	Number group identifier

Configuration Parameter #0123 – Write/Response		
Size	Type	Description
2 bit	Identifier	Number group identifier
6 bit	Protocol ID	MsgProtocolSMSNumberGroup

#0124 – Microphone Gain Control

This parameter enables some control over the microphone gain. This affects alarm calls as well as incoming calls.

Currently allowed values and corresponding gain are listed below:

0 – 7dB

1 – 20dB

2 – 35dB

Configuration Parameter #0124 – Write/Response		
Size	Type	Description
8 bit	Gain	Microphone gain

#0125 – Speaker Gain Control

This parameter enables some control over the microphone gain. This affects alarm calls as well as incoming calls.

Currently allowed values and corresponding gain are listed below:

0 – -40dB 4 – -24dB 8 – -8dB 12 – 8dB

1 – -36dB 5 – -20dB 9 – -4dB

2 – -32dB 6 – -16dB 10 – 0dB

3 – -28dB 7 – -12dB 11 – 4dB

Configuration Parameter #0125 – Write/Response		
Size	Type	Description
8 bit	Gain	Speaker gain

#0126 – Incoming Call Max Duration

This parameter determines the maximum duration of an incoming voice call.

Configuration Parameter #0126 – Write/Response		
Size	Type	Description
8 bit	Time	IncomingCallMaxDuration in 10s units

#0127 – Incoming Call Speaker Enable

This parameter determines if the speaker should be enabled for incoming voice calls.
0 for disabled and 1 for enabled.

Configuration Parameter #0127 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	IncomingCallSpeakerEnable

#0128 – Incoming Call Microphone Enable

This parameter determines if the microphone should be enabled for incoming voice calls.
0 for disabled and 1 for enabled.

Configuration Parameter #0128 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	IncomingCallMicrophoneEnable

#0129 – Include DI/DO in SRT# Protocol

This parameter enables the SRT# Protocol to include information on the I/O states.
Requires GSM software v9.1.1 or later.

Configuration Parameter #0129 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	ProtHashIncludeDiDo

#0130 – Compatibility Option – Append CR/LF

This parameter enables compatibility with SRT299/306 TCP Command Channel mode in that if it is enabled, and the current protocol is text based, carriage return and line feed characters are appended to each message sent over GPRS.
Requires GSM software v9.1.1 or later.

Configuration Parameter #0130 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	CompatOptionCRLF

#0131 – Compatibility Option – Send IMEI/IMSI

This parameter enables compatibility with SRT299/306 TCP Command Channel mode, in that if it is enabled, the unit will begin by sending a string containing IMEI and IMSI of the unit when it connects over TCP.
Requires GSM software v9.1.1 or later.

Configuration Parameter #0131 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	CompatOptionTCC

#0132 – Enable Heading Change Distance Trigger

These parameters determine, for the four GSM working modes, if heading changes should be allowed to trigger distance report.

Requires GSM software v9.1.1 or later.

Configuration Parameter #0132 – Read		
Size	Type	Description
2 bit	Mode select	00: GSM Timer Mode 01: GSM Ignition Mode 10: GSM Motion Mode 11: GSM Always On Mode

Configuration Parameter #0132 – Write/Response		
Size	Type	Description
2 bit	Mode select	00: GSM Timer Mode 01: GSM Ignition Mode 10: GSM Motion Mode 11: GSM Always On Mode
1 bit	Enable/Disable	HeadingChangeTriggerEnable

#0133 – Heading Change Distance Trigger Settings

These parameters determine, for the four GSM working modes, the settings for the heading change distance report trigger.

A reference heading will be taken if the unit is moving faster than *HeadingChangeMinSpeed*. When current heading differs from reference by at least *HeadingChangeThreshold*, a distance report will trigger.

To disable generation of this message for a working mode, set *DistMsgDistance* to 0.

Allowed range for *HeadingChangeMinSpeed* is 1-255 km/h. While it can be set to 0, the unit will enforce 1 as minimum.

Allowed range for *HeadingChangeThreshold* is 0-180 degrees. While it can be set to higher than 180 degrees, the unit will enforce 180 as maximum.

Requires GSM software v9.1.1 or later.

Configuration Parameter #0133 – Read		
Size	Type	Description
2 bit	Mode select	00: GSM Timer Mode 01: GSM Ignition Mode 10: GSM Motion Mode 11: GSM Always On Mode

Configuration Parameter #0133 – Write/Response		
Size	Type	Description
2 bit	Mode select	00: GSM Timer Mode 01: GSM Ignition Mode 10: GSM Motion Mode 11: GSM Always On Mode
8 bit	Minimum speed	HeadingChangeMinSpeed – km/h
8 bit	Change threshold	HeadingChangeThreshold – degrees

#0134 – Ignore Serial Number

This parameter enables the unit to ignore the requirement that the serial number field in incoming commands is matched to the unit.

This avoids having to customize each command specifically for each unit.

Requires GSM software v9.1.1 or later.

Configuration Parameter #0134 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	IgnoreSerialNumber

#0135 – Odometer Accumulation Minimum Distance

Requires GSM software v9.1.4 or later.

Configuration Parameter #0139 – Write/Response		
Size	Type	Description
8 bit	Distance	

#0136 – Ignition Mode Override

Requires GSM software v9.1.4 or later.

Configuration Parameter #0136 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	

#0137 – Disable Distance Calculation

Requires GSM software v9.1.4 or later.

Configuration Parameter #0137 – Read		
Size	Type	Description
2 bit	Mode select	00: GSM Timer Mode 01: GSM Ignition Mode 10: GSM Motion Mode 11: GSM Always On Mode

Configuration Parameter #0137 – Write/Response		
Size	Type	Description
2 bit	Mode select	00: GSM Timer Mode 01: GSM Ignition Mode 10: GSM Motion Mode 11: GSM Always On Mode
1 bit	Enable/Disable	0: Distance Calculations are enabled for selected mode 1: Distance Calculations are disabled for selected mode

#0138 – Include AINx in SRT# Protocol

Requires GSM software v9.1.7 or later.

Configuration Parameter #0138 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	

#0139 – Prefix Text with IMSI

Requires GSM software v9.1.7 or later.

Configuration Parameter #0139 – Write/Response		
Size	Type	Description
1 bit	Enable/Disable	

#0200 – Unit Name

Firmware Version 7.0.0

Not available.

Firmware Version 7.0.1 and later

This parameter determines the custom unit name to use for reports and alarm messages if the currently active message protocol supports custom unit names.

Configuration Parameter #0200 – Write/Response		
Size	Type	Description
5 bit	Name length	0-19. Number of characters in unit name.
x bit	Prefix text	Prefix text in clear ASCII, 8 bits per character, and number of characters as defined above.

Appendix D – Protocols

ID	Protocol Name	Commands		Messages	
0	SRT Binary Protocol	X	7.0.0	X	7.0.0
1	Reserved	R	-	R	-
2	OVLS	L	7.0.1	X	7.0.1
3	MPTP	L	7.0.1	-	-
4	SRT MMI Protocol	-	-	-	-
5	SRT # Protocol	L	7.0.1	X	7.0.1
6	Text	L	9.0.9	L	9.0.9
7+	Reserved	R	-	R	-

X	Supported
L	Limited support
-	Not supported
R	Reserved for future use
x.y.z	First supported in version x.y.z

Appendix E – Report Priority

Value	Description
0	Never send
1	Always send
2	Reserved
3	Reserved

Appendix F – OVLS Prio & Type

OVLS Priority Meaning

Value	Description
' '/10	Undefined
0	Fire
1	Assault
2	Burglary
3	Emergency
4	Operation
5	Plant breakdown
6	Emergency automatic
7	Reserved
8	Reset
9	Application specific

OVLS Alarm Type

Value	Description
' '/10	Undefined
0	Console pushbutton 1
1	External transmitter 1
2	Machine interface
3	External transmitter 2
4	External pushbutton
5	Console pushbutton 2
6	Time released automatic
7	Reserved
8	Alarm test
9	Application specific

Appendix G – Custom Text Format Codes

The format codes used for the Custom Text report format consist of four characters according to the following; **\$xyy**, where \$ marks the start of the format code, xx indicates the code identifier and y indicates format variant. If the character \$ is to be used in the text itself, it can be escaped by using \$\$.

\$00A	Serial number, 1-6 digits, no leading zeroes
\$00B	Serial number, 6 digits, leading zeroes
\$01A	Unit identifier
\$02A	Message id
\$03A	Message text (normal)
\$03B	Message text (OVLS formatted)
\$04A	Speed (km/h)
\$05E	Battery level, up to 4 digits, mV postfix
\$05G	Battery level, two decimals, V postfix
\$05I	Battery level, one decimal, V postfix
\$06E	Main power level, up to 5 digits, mv postfix
\$06G	Main power level, two decimals, V postfix
\$06I	Main power level, one decimal, V postfix
\$07E	Analog in 1 level, up to 4 digits, mV postfix
\$07G	Analog in 1 level, two decimals, V postfix
\$07I	Analog in 1 level, one decimal, V postfix
\$08E	Analog in 2 level, up to 4 digits, mV postfix
\$08G	Analog in 2 level, two decimals, V postfix
\$08I	Analog in 2 level, one decimal, V postfix
\$09A	Odometer accumulated, value in meters
\$09B	Odometer accumulated, value in km, one decimal
\$09C	Odometer accumulated, value in km
\$0AA	Odometer new, value in meters
\$0AB	Odometer new, value in km, one decimal
\$0AC	Odometer new, value in km
\$0BA	Decimal value, one to two digits
\$0BB	Decimal value, two digits, zero-padded
\$0BC	Hexadecimal value, one to two digits, uppercase letters
\$0BD	Hexadecimal value, two digits, zero-padded, uppercase letters
\$0BE	Hexadecimal value, one to two digits, lowercase letters
\$0BF	Hexadecimal value, two digits, zero-padded, lowercase letters
\$0CA	IGN high text (normal long): IGNITION
\$0CB	IGN high text (OVLS formatted long): Ignition
\$0CC	IGN high text (normal short): IGN
\$0CD	IGN high text(OVLS formatted short): Ign
\$0DA	AUXCTRL high text: AUX CTRL
\$0DB	AUXCTRL high text: AuxCtrl
\$0DC	AUXCTRL high text: AUXC
\$0DD	AUXCTRL high text: Auxc
\$0EA	AUXALARM high text: AUX ALARM
\$0EB	AUXALARM high text: AuxAlarm
\$0EC	AUXALARM high text: AUXA
\$0ED	AUXALARM high text: Auxa

\$0FA	PBALARM high text: PUSHBUTTON
\$0FB	PBALARM high text: Pushbutton
\$0FC	PBALARM high text: PB
\$0FD	PBALARM high text: Pb
\$0GA	IR high text: MOTION
\$0GB	IR high text: Motion
\$0GC	IR high text: IR
\$0GD	IR high text: Ir
\$0HA	VIB high text: VIBRATION
\$0HB	VIB high text: Vibration
\$0HC	VIB high text: VIB
\$0HD	VIB high text: Vib
\$0IA	PRV high text: PRIVACY
\$0IB	PRV high text: Privacy
\$0IC	PRV high text: PRV
\$0ID	PRV high text: Prv
\$0JA	RLOUT high text: RELAY OUT
\$0JB	RLOUT high text: RelayOut
\$0JC	RLOUT high text: RLO
\$0JD	RLOUT high text: Rlo
\$0KA	CHARGING high text: CHARGING
\$0KB	CHARGING high text: Charging
\$0KC	CHARGING high text: CHG
\$0KD	CHARGING high text: Chg
\$0LA	BATTERYUSE high text: BATTERY
\$0LB	BATTERYUSE high text: Battery
\$0LC	BATTERYUSE high text: BAT
\$0LD	BATTERYUSE high text: Bat
\$0MA	POWERSOURCE (battery) text: BATTERY
\$0MB	POWERSOURCE (battery) text: Battery
\$0MC	POWERSOURCE (battery) text: BAT
\$0MD	POWERSOURCE (battery) text: Bat
\$0MA	POWERSOURCE (main power) text: MAIN POWER
\$0MB	POWERSOURCE (main power) text: MainPower
\$0MC	POWERSOURCE (main power) text: MP
\$0MD	POWERSOURCE (main power) text: Mp

Code identifiers 0C, 0D, 0E, 0F, 0G, 0H, 0I, 0J, 0K and 0L also have format variants E to O with the following meanings;

\$xxE	signal state high: 1	signal state low: 0
\$xxF	signal state high: ON	signal state low: OFF
\$xxG	signal state high: On	signal state low: Off
\$xxH	signal state high: HIGH	signal state low: LOW
\$xxI	signal state high: High	signal state low: Low
\$xxJ	signal state high: HI	signal state low: LO
\$xxK	signal state high: Hi	signal state low: Lo
\$xxL	signal state high: TRUE	signal state low: FALSE
\$xxM	signal state high: True	signal state low: False
\$xxN	signal state high: SET	signal state low: CLEAR
\$xxO	signal state high: Set	signal state low: Clear