

RSDB	PDS Keyword	HK-Mnemonic old	Description	HK Type	Std./Ex t. Pack.	Monitoring if	Sampl ing frequ ency	Transmi ssion frequen cy S/C	Range	Criti- calit y	Action, if outside range	Used for regulati on	Remarks
NRNAC101		COPS Std. HK Header											
		Range Status											
	ROSINA_COPS_COMMAND_ERR OR_FLAG	Command Error	COPS command Error	Flag	Std.	Measurement	2s	1min	On / Off	TBD			
		Spare											
	ROSINA_COPS_FIL_ION_R_FLAG	Filament Ion Range	Config of the electrometer for the Ion current in Nude Gauge	Flag	Std.	Measurement with Nude Gauge	2s	1min	Low / Medium / High	4	no action		
	ROSINA_COPS_MIC_ION_R_FLA G	Microtip Ion Range	Config of the electrometer for the Ion current in Ram Gauge	Flag	Std.	Measurement with Ram Gauge	2s	1min	Low / Medium / High	4	no action		
	ROSINA_COPS_FIL_EMISSION_R _FLAG	Filament Imission Range	Config for the Immision current measurement in Nude Gauge	Flag	Std.	Measurement with Nude Gauge	2s	1min	Low / High	4	no action		
	ROSINA_COPS_MIC_EMISSION_ R_FLAG	Microtip Imission Range	Config for the Immision current measurement in Ram Gauge	Flag	Std.	Measurement with Ram Gauge	2s	1min	Low / High	4	no action		
NRNAC102	ROSINA_COPS_HK_COUNTER	COPS HK counter	Housekeeping counter	counter	Std.	Measurement	2s	1min	not applicable	TBD			
NRNAC103	ROSINA_COPS_CMD_COUNTER	COPS Cmd counter	Command counter	counter	Std.	Measurement	2s	1min	not applicable	TBD			
NRNAC104	ROSINA_COPS_CMD_ERROR_C OUNTER	COPS Cmd Error counter	Command error counter	counter	Std.	Measurement	2s	1min	not applicable	TBD			
NRNAC105	ROSINA_COPS_CMD_ERROR_P OSITION	COPS Cmd Error position											
NRNAC106	ROSINA_COPS_HK_ERROR_COU NTER	COPS HK Error counter	Housekeeping errors counter	counter	Std.	Measurement	2s	1min	not applicable	TBD			

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	ROSINA_COPS_MIC_ARRAY1_FL AG ROSINA_COPS_MIC_ARRAY2_FL AG ROSINA_COPS_MIC_ARRAY3_FL AG ROSINA_COPS_MIC_ARRAY4_FL AG ROSINA_COPS_MIC_ARRAY5_FL AG ROSINA_COPS_MIC_ARRAY6_FL AG ROSINA_COPS_MIC_ARRAY7_FL AG ROSINA_COPS_MIC_ARRAY8_FL AG	Microtips Array	Microtips configuration, shows which Microtip groups are enabled or not	Flag array		Measurement with Ram Gauge							
		Spare			Std.		2s	1min	1 to 8 Micotips On /Off		4 no action		
	ROSINA_COPS_FILAMENT_FLAG	Filament	Filament configuration, left or right filament enabled	Flag		Measurement with Nude Gauge							
		Spare			Std.		2s	1min	Left / Right		4 no action		
NRNAC10E		Spare											
NRNAC10F	ROSINA_COPS_ION_I_FILAMENT	Ion I Filament	Ion current in the Nude Gauge	Measured		Measurement with Nude Gauge							
					Std.		2s	1min	> 0pA		3	3	
NRNAC110	ROSINA_COPS_ION_I_MICROTIP	Ion I Microtip	Ion current in the Ram Gauge	Measured		Measurement with Ram Gauge							
					Std.		2s	1min	> 0pA		3	4	

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NRNAC11B		COPS Ext. HK Header											
		Spare											
NRNAC11C	ROSINA_COPS_ELECTR_TEMP	Electr. Temp	Temperature of the electronic (board2)	Measured	Ext.	Measurement	2s	1min	-30 to +60 °C (TBC)	3	TBD		
NRNAC11D	ROSINA_COPS_SENSOR_TEMP	Sensor Temp	Temperature of the Ram Gauge	Measured	Ext.	Measurement	2s	1min	-30 to +60 °C (TBC)	3	TBD		
NRNAC11E	ROSINA_COPS_P12V_FILAMENT	+12V Filament	+12V power supply for Nude Gauge electronic	Measured	Ext.	Measurement with Nude Gauge	2s	1min	Nominal value ± 3%	3	5		
NRNAC11F	ROSINA_COPS_M12V_FILAMENT	-12V Filament	-12V power supply for Nude Gauge electronic	Measured	Ext.	Measurement with Nude Gauge	2s	1min	Nominal value ± 3%	3	5		
NRNAC120	ROSINA_COPS_P12V_MICROTIP	+12V Microtip	+12V power supply for Ram Gauge electronic	Measured	Ext.	Measurement with Ram Gauge	2s	1min	Nominal value ± 3%	3	5		
NRNAC121	ROSINA_COPS_M12V_MICROTIP	-12V Microtip	-12V power supply for Ram Gauge electronic	Measured	Ext.	Measurement with Ram Gauge	2s	1min	Nominal value ± 3%	3	5		

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NRNAD101	ROSINA_DFMS_ISHEATER_FLAG	DFMS IS Heater	Ion source heater Enabled	Flag	Std.	No measurement with IS heater operation	2s	1 min	On/Off	3	9		
NRNAD101	ROSINA_DFMS_GCU1_ENABLED_FLAG	DFMS Flag GCU 1	GCU 1 heater Enabled	Flag	Std.	Measurement with GCU operation	200 ms /synchronized	1 min	On/Off, switching	3	10		
NRNAD101	ROSINA_DFMS_GCU2_ENABLED_FLAG	DFMS Flag GCU 2	GCU 2 heater Enabled	Flag	Std.	Measurement with GCU operation	200 ms /synchronized	1 min	On/Off, switching	3	10		
NRNAD101	ROSINA_DFMS_COV_MOT_DIS_FLAG	DFMS Flag Cover	Cover motor Disabled	Flag	Std.	Measurement	2s / synchronized	1 min	On	3	TBD		
NRNAD101	ROSINA_DFMS_NOP_FLAG	DFMS Flag NOP	Non operational mode Enabled	Flag	Std.	Measurement	2s / synchronized with	1 min	On	TBD			
NRNAD101	ROSINA_DFMS_CMD_ERROR_FLAG	DFMS Flag Cmd Err	Command Error	Flag	Std.	Measurement	2s / synchronized with	1 min		TBD			
NRNAD101	ROSINA_DFMS_HV_SAFE_FLAG	DFMS FLag HV Safe	HV Safe Status	Flag	Std.	Measurement	2s / synchronized with	1 min	Off	3	TBD		
NRNAD101	ROSINA_DFMS_HV_REDUCED_FLAG	DFMS Flag HV Reduced	HV Reduced Status	Flag	Std.	Measurement	2s / synchronized with	1 min	Off	3			
NRNAD103	ROSINA_DFMS_HK_COUNTER	DFMS HK counter	number of HK packets sent		Std.	DPU generated		1 min	not applicable	n.a.			
NRNAD104	ROSINA_DFMS_CMD_COUNTER	DFMS Cmd counter	number of DFMS commands processed		Std.	DPU generated		1 min	not applicable	n.a.			
NRNAD105	ROSINA_DFMS_CMD_ERROR_CNT	DFMS Cmd Error cnt	number of wrong DFMS commands		Std.	DPU generated		1 min	not applicable	n.a.			
NRNAD106	ROSINA_DFMS_CMD_ERROR_POS	DFMS Cmd Error pos			Std.	DPU generated		1 min	not applicable	n.a.			
NRNAD107	ROSINA_DFMS_SCI_COUNTER	DFMS Science counter	number of DFMS science packets sent by DPU		Std.	DPU generated		1 min	not applicable	n.a.			
NRNAD108	ROSINA_DFMS_SCI_ERROR_COUNTER	DFMS Science Error counter			Std.	DPU generated		1 min	not applicable	n.a.			
NRNAD109	ROSINA_DFMS_SCI_ERROR_POSITION	DFMS Science Error position			Std.	DPU generated		1 min	not applicable	n.a.			
NRNAD10A	ROSINA_DFMS_MODE_TABLE	DFMS S/W mode			Std.	DPU generated		1 min	not applicable	n.a.			
NRNAD10B	ROSINA_DFMS_STATUS	DFMS S/W status			Std.	DPU generated		1 min	not applicable	n.a.			
NRNAD10C	ROSINA_DFMS_LEDA_CEM_ACCU_TM	Leda/CEM Accu Time	Accumulation time of MCP or CEM detector		Std.	DPU generated		1 min	not applicable	n.a.			

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NRNAD10D	ROSINA_DFMS_ACCU_SCAN_COUNTS	Accu/Scan Counts	Total number of counts on detector		Std.	DPU generated		1 min	not applicable	n.a.			
NRNAD10E	ROSINA_DFMS_MODE_TABLE	MEP CEM DTA			Std.	DPU generated		1 min	not applicable	n.a.			
NRNAD10F	ROSINA_DFMS_SEQUENCE_TABLE	Spare 1			Std.	DPU generated		1 min	not applicable	n.a.			
NRNAD110	ROSINA_DFMS_MASS_HK	Spare 2			Std.	DPU generated		1 min	not applicable	n.a.			
NRNAD111	ROSINA_DFMS_SENT_CMDS_COUNTS	Spare 3			Std.	DPU generated		1 min	not applicable	n.a.			
NRNAD112	ROSINA_DFMS_MEP_MAIN_CURRENT	MEP I MEP	MEP main current monitor (all loads except ASP, FDP)	Measured	Std.	Measurement	2s / synchronized with	1 min	< 0.4 A	2	TBD		Monitored for power consumption
NRNAD113	ROSINA_DFMS_MEP_FLOAT_CURRENT	MEP I Float	MEP floating voltage current monitor (ASP, FDP)	Measured	Std.	Measurement	2s / synchronized with	1 min	< 0.3 A	2	TBD		Monitored for power consumption
NRNAD114	ROSINA_DFMS_MEP_MESHED_GRID	MEP MG	Meshed grid voltage	Measured	Std.	Measurement	2s /synchronized with	1 min/with science data	Nominal value ± TBD %	2	set flag low or high		transmitted only as off/low/high/ok flag
NRNAD115	ROSINA_DFMS_MEP_ION_SOURCE_BOX	MEP ISB	Ion source box voltage	Measured	Std.	Measurement	2s /synchronized	1 min/with science data	Nominal value ± TBD %	2	set flag low or high		transmitted only as off/low/high/ok flag
NRNAD116	ROSINA_DFMS_MEP_GCU1_INPRESSURE	MEP GCU PIn 1	Gas calibration unit 1 input pressure (high pressure)	Measured	Std.	Measurement with GCU operation	200 ms /synchronized	1 min	TBD	3	6		Monitored for extensive gas loss
NRNAD117	ROSINA_DFMS_MEP_GCU1_CURRENT	MEP GCU I 1	Gas calibration unit 1 valve heater current	Measured	Std.	Measurement with GCU operation	200 ms /synchronized	1 min		3	5		
NRNAD118	ROSINA_DFMS_MEP_GCU1_OUTPRESSURE	MEP GCU POut 1	Gas calibration unit 1 output pressure (Mini Pirani)	Measured	Std.	Measurement with GCU operation	200 ms /synchronized	1 min	TBD range	3	06. Jul	GCU operation	Monitored for uncontrolled pressure
NRNAD119	ROSINA_DFMS_MEP_GCU2_INPRESSURE	MEP GCU PIn 2	Gas calibration unit 2 input pressure (high pressure)	Measured	Std.	Measurement with GCU operation	200 ms /synchronized	1 min	TBD	3	6		Monitored for extensive gas loss
NRNAD11A	ROSINA_DFMS_MEP_GCU2_CURRENT	MEP GCU I 2	Gas calibration unit 2 valve heater current	Measured	Std.	Measurement with GCU operation	200 ms /synchronized	1 min		3	5		
NRNAD11B	ROSINA_DFMS_MEP_GCU2_OUTPRESSURE	MEP GCU POut 2	Gas calibration unit 2 output pressure (Mini Pirani)	Measured	Std.	Measurement with GCU operation	200 ms /synchronized	1 min	TBD range	3	06. Jul	GCU operation	Monitored for uncontrolled pressure
NRNAD11C	ROSINA_DFMS_MEP_GCU1_TEMP1	MEP GCU Temp 11	Gas calibration unit 1 temperature sensor 1 (*tank)	Measured	Std.	Measurement with GCU operation	200 ms /synchronized	1 min	-30 to +60 °C (TBC)	3	5		
NRNAD11D	ROSINA_DFMS_MEP_GCU1_TEMP2	MEP GCU Temp 12	Gas calibration unit 1 temperature sensor 2	Measured	Std.	Measurement with GCU operation	200 ms /synchronized	1 min	-30 to +60 °C (TBC)	3	5		
NRNAD11E	ROSINA_DFMS_MEP_GCU2_TEMP1	MEP GCU Temp 21	Gas calibration unit 2 temperature sensor 1 (*tank)	Measured	Std.	Measurement with GCU operation	200 ms /synchronized	1 min	-30 to +60 °C (TBC)	3	5		
NRNAD11F	ROSINA_DFMS_MEP_GCU2_TEMP2	MEP GCU Temp 22	Gas calibration unit 2 temperature sensor 2	Measured	Std.	Measurement with GCU operation	200 ms /synchronized	1 min	-30 to +60 °C (TBC)	3	5		
NRNAD120	ROSINA_DFMS_MEP_CEM_CURRENT	MEP CEM I	Strip current flowing in the channeltron	Measured	Std.	Measurement	2s /synchronized	1 min/with science data	TBD range	3	TBD		
NRNAD121	ROSINA_DFMS_MEP_CEM_ANALOG_H	MEP CEM ANA	Current collected at	Measured	Std.	Not applicable	science data	science data	not applicable	n.a.	no action	CEM gain	will be high gain
NRNAD122	ROSINA_DFMS_MEP_COV_MOT_CURRENT	MEP MOT I	Cover motor current	Measured	Std.	No measurement with cover operation	2s	1 min		2	4		
NRNAD123	ROSINA_DFMS_MEP_HALL_COUNTER	Hall Counter	Cover Hall Counter	Flag ?	Std.	No measurement with cover operation	2s	1 min		2	TBD		
NRNAD124	ROSINA_DFMS_MEP_MOT_COUNTER	Motor Counter	Cover Motor Counter	Flag ?	Std.	No measurement with cover operation	2s	1 min		2	TBD		

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NRNAD125	ROSINA_DFMS_MEPCOVER_OPEN_FL	MEC_MOT_STAT COV OPEN	Cover Open Status	Flag	Std.	No measurement with cover operation	2s	1 min		2	TBD		
NRNAD125	ROSINA_DFMS_MEPCOVER_CLOSE_	MEC_MOT_STAT COV CLOSED	Cover Closed Status	Flag	Std.	Measurement without cover operation	2s / synchronized	1 min	True/False	2	TBD		
NRNAD126	ROSINA_DFMS_CEM_THRESHOLD	MEP DAC THR	CEM threshold setting	DAC	Std.	Measurement	2s /synchronized	1 min/with science data	Nominal value \pm TBD %	2	2/set flag low or high		transmitted only as off/low/high/ok flag
NRNAD127	ROSINA_DFMS_CEM_FRONT	MEP HVCEM DAC	CEM front side high voltage setting	DAC	Std.	Measurement	2s /synchronized	1 min/with science data	Nominal value \pm 50V (TBC)	2	1 / 2 /set flag low or high		transmitted only as off/low/high/ok flag
NRNAD128	ROSINA_DFMS_MEPCEM_CURRENT	MEP HVCEM I	CEM high voltage current of regulation loop	Measured	Std.	Measurement	2s / synchronized	1 min	Nominal value \pm TBD % or	3 (TBC)	TBD		
NRNAD129	ROSINA_DFMS_ISC_HV	MEP HVACC DAC	Acceleration voltage setting	DAC	Std.	Measurement	2s /synchronized	1 min/with science data	Nominal value \pm TBD %	2	1 / 2 /set flag low or high		transmitted only as off/low/high/ok flag
NRNAD12A	ROSINA_DFMS_ISC_HV_CURRENT	MEP HVACC I	Acceleration voltage current of regulation loop	Measured	Std.	Measurement	2s / synchronized	1 min	Nominal value \pm TBD % or	3 (TBC)	TBD		
NRNAD12B	ROSINA_DFMS_IONSRC_TEMPRATUR	MEP IS Temp	Temperature measured for the ion source	Measured	Std.	Measurement	2s	1 min	-80 to +500 °C	2	set flag low or high	IS heater operation	
NRNAD12C	ROSINA_DFMS_MEPCACCEL_VOLT_ER	MEP HVACC ERR	Acceleration voltage error output of regulation loop	Measured	Std.	Measurement	2s / synchronized	1 min	Nominal value \pm TBD % or	3 (TBC)	TBD		
NRNAD12D	ROSINA_DFMS_CEM_FRONT_ERROR	MEP HVCEM ERR	CEM high voltage error output of regulation loop	Measured	Std.	Measurement	2s / synchronized	1 min	Nominal value \pm TBD % or	3 (TBC)	TBD		
NRNAD12E	ROSINA_DFMS_MEPCEM_GND	MEP CEM GND	Reference Ground of channeltron output	Measured	Std.	Measurement	2s / synchronized	2 min	n/a				
NRNAD12F	ROSINA_DFMS_FIL1_BIAS	ISC FIL 1 Bias	Filament 1 biasing	Measured	Std.	Measurement	2s /synchronized	1 min/with science data	Nominal value \pm TBD %	2	3 / set flag low or high		
NRNAD130	ROSINA_DFMS_FIL2_BIAS	ISC FIL 2 Bias	Filament 2 biasing	Measured	Std.	Measurement	2s /synchronized	1 min/with science data	Nominal value \pm TBD %	2	3 / set flag low or high		

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NRNAD130	ROSINA_DFMS_ISC_HV_FLAG	Fil 2 Bias ISC HVx	HV Ion source Enabled	Flag	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD130	ROSINA_DFMS_ISC_TL_FLAG	Fil 2 Bias TLx	HV Transfer Lens Enabled	Flag	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD131	ROSINA_DFMS_FIL1_EMISSION	ISC FIL 1 E	Filament 1 emission current	Measured	Std.	Measurement	2s /synchronized with	1 min/with science data	Nominal value \pm TBD %	3	3 / set flag low or high		
NRNAD131	ROSINA_DFMS_ISC_SL_FLAG	Fil 1 Emis SLx	HV Source Lens Enabled	Flag	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD131	ROSINA_DFMS_ISC_SE_FLAG	Fil 1 Emis Sex	HV Source Entrance Slit Enabled	Flag	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD132	ROSINA_DFMS_FIL_EMISSION	ISC FIL 1 I	Filament 1 current	Measured	Std.	Measurement	2s /synchronized with	1 min/with science data	Nominal value \pm TBD %	3	TBD / set flag low or high		
NRNAD132	ROSINA_DFMS_FIL1_ENABLED_FLAG	Fil 1 Curr Fil1	Filament 1 Enabled	Flag	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD132	ROSINA_DFMS_FIL2_ENABLED_FLAG	Fil 1 Curr Fil2	Filament 2 Enabled	Flag	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD133	ROSINA_DFMS_FIL2_EMISSION	ISC FIL 2 E	Filament 2 emission current	Measured	Std.	Measurement	2s /synchronized with	1 min/with science data	Nominal value \pm TBD %	3	TBD / set flag low or high		
NRNAD134	ROSINA_DFMS_ISC_FIL2_CURRENT	ISC FIL 2 I	Filament 2 current	Measured	Std.	Measurement	2s /synchronized with	1 min/with science data	Nominal value \pm TBD %	3	TBD / set flag low or high		
NRNAD135	ROSINA_DFMS_ELLECTRON_REPELLE	ISC ERP	Electron repeller voltage	Measured	Std.	Measurement	2s /synchronized with	1 min/with science data	Nominal value \pm TBD %	2	set flag low or high		
NRNAD136	ROSINA_DFMS_ION_REPELLER1	ISC IRP1	Ion repeller 1 voltage	Measured	Std.	Measurement	2s /synchronized with	1 min/with science data	Nominal value \pm TBD %	2	set flag low or high		transmitted only as off/low/high/ok flag
NRNAD137	ROSINA_DFMS_ION_REPELLER2	ISC IRP2	Ion repeller 2 voltage	Measured	Std.	Measurement	2s /synchronized with	1 min/with science data	Nominal value \pm TBD %	2	set flag low or high		transmitted only as off/low/high/ok flag
NRNAD138	ROSINA_DFMS_ION_SUPRESSOR	ISC ISP	Ion suppressor voltage	Measured	Std.	Measurement	2s /synchronized with	1 min/with science data	Nominal value \pm TBD %	2	set flag low or high		transmitted only as off/low/high/ok flag
NRNAD139	ROSINA_DFMS_SOURCE_LENS_LEFT	ISC SLL VMON	Source lens left output voltage	Measured	Std.	Measurement	2s /synchronized with	1 min/with science data	Nominal value \pm TBD %	3	TBD / set flag low or high		
NRNAD13A	ROSINA_DFMS_SOURCE_LENS_RIGHT	ISC SLR VMON	Source lens right output voltage	Measured	Std.	Measurement	2s /synchronized with	1 min/with science data	Nominal value \pm TBD %	2	set flag low or high		transmitted only as off/low/high/ok flag
NRNAD13B	ROSINA_DFMS_SOURCE_EXIT_SLIT	ISC SES VMON	Source exit slit output voltage	Measured	Std.	Measurement	2s /synchronized with	1 min/with science data	Nominal value \pm TBD %	2	set flag low or high		transmitted only as off/low/high/ok flag
NRNAD13C	ROSINA_DFMS_BETA_DEFLECTOR	ISC SEB VMON	Beta deflector output voltage	Measured	Std.	Measurement	2s /synchronized with	1 min/with science data	Nominal value \pm TBD %	2	set flag low or high		transmitted only as off/low/high/ok flag
NRNAD13D	ROSINA_DFMS_TRANSFER_LENS_RIG	ISC TLR VMON	Transfer lens right output voltage	Measured	Std.	Measurement	2s /synchronized with	1 min/with science data	Nominal value \pm TBD %	2	set flag low or high		transmitted only as off/low/high/ok flag
NRNAD13E	ROSINA_DFMS_TRANSFER_LENS_LEF	ISC TLL VMON	Transfer lens left output voltage	Measured	Std.	Measurement	2s /synchronized with	1 min/with science data	Nominal value \pm TBD %	2	set flag low or high		transmitted only as off/low/high/ok flag
NRNAD13F	ROSINA_DFMS_ASP_HV_BIAS	ASP E HVB DAC	Internal ASP HV Bias setting	DAC	Std.	Measurement	2s / synchronized	1 min		4	no action		
NRNAD140	ROSINA_DFMS_ASP_HV_BIAS_CURR	ASP E HVB I	Internal ASP HV Bias current of regulation loop	Measured	Std.	Measurement	2s / synchronized	1 min	TBD (provided by T.	3	TBD		
NRNAD141	ROSINA_DFMS_POSTACCEL_VOLTAGE	ASP E FDP DAC	HV FDP reference setting	DAC	Std.	Measurement	2s / synchronized	1 min		4	no action		

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NRNAD142	ROSINA_DFMS_ASPD_REF_VOLT	ASP D VREF	ASP D reference voltage	Measured	Std.	Measurement	2s / synchronized	1 min		4	no action		
NRNAD143	ROSINA_DFMS_ENTR_SLIT_SWITCH2	ASP D ESS2 DAC	Entrance slit switch condenser 1 setting	DAC	Std.	Measurement	2s /synchronized	1 min/with science data	Nominal value \pm TBD %	2	set flag low or high		transmitted only as off/low/high/ok flag
NRNAD144	ROSINA_DFMS_ENTR_SLIT_SWITCH1	ASP D ESS1 DAC	Entrance slit switch condenser 2 setting	DAC	Std.	Measurement	2s /synchronized	1 min/with science data	Nominal value \pm TBD %	2	set flag low or high		transmitted only as off/low/high/ok flag
NRNAD145	ROSINA_DFMS_ZOOM_QUAD2	ASP D ZQ DAC	Zoom quadruple 2 setting	DAC	Std.	Measurement	2s /synchronized	1 min/with science data	Nominal value \pm TBD %	2	set flag low or high		transmitted only as off/low/high/ok flag
NRNAD146	ROSINA_DFMS_ELSTAT_INNER_PLATE	ASP C ESAIT DAC	Electrostatic analyzer inner toroid fine setting	DAC	Std.	Measurement	2s /synchronized	1 min/with science data	Nominal value \pm TBD %	2	set flag low or high		transmitted only as off/low/high/ok flag
NRNAD146		ASP C ESAIT DAC	Electrostatic analyzer ???	DAC	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD147	ROSINA_DFMS_ELSTAT_OUTER_PLATE	ASP C ESAOT DAC	Electrostatic analyzer outer toroid fine setting	DAC	Std.	Measurement	2s /synchronized	1 min/with science data	Nominal value \pm TBD %	2	set flag low or high		transmitted only as off/low/high/ok flag
NRNAD148	ROSINA_DFMS_ELSTAT_INNER_TOROID	ASP C ESAC DAC	Electrostatic analyzer coarse setting	DAC	Std.	Measurement	2s /synchronized	1 min/with science data	Nominal value \pm TBD %	2	set flag low or high		transmitted only as off/low/high/ok flag
NRNAD149	ROSINA_DFMS_ZOOM_QUAD1	ASP C Z1QV DAC	Zoom quadruple 1 setting	DAC	Std.	Measurement	2s /synchronized	1 min/with science data	Nominal value \pm TBD %	2	set flag low or high		transmitted only as off/low/high/ok flag
NRNAD14A	ROSINA_DFMS_HEXAPOLE	ASP A HP DAC	Hexapole setting	DAC	Std.	Measurement	2s /synchronized	1 min/with science data	Nominal value \pm TBD %	2	set flag low or high		transmitted only as off/low/high/ok flag
NRNAD14B	ROSINA_DFMS_RATION_QUAD	ASP A RQ DAC	Rotation quadruple setting	DAC	Std.	Measurement	2s /synchronized	1 min/with science data	Nominal value \pm TBD %	2	set flag low or high		transmitted only as off/low/high/ok flag
NRNAD14C	ROSINA_DFMS_MATSUDA_PLATE	ASP A MP DAC	Matsuda plates setting	DAC	Std.	Measurement	2s /synchronized	1 min/with science data	Nominal value \pm TBD %	2	set flag low or high		transmitted only as off/low/high/ok flag
NRNAD14D	ROSINA_DFMS_CEM_REPELLER	ASP A CEM DAC	CEM repeller setting	DAC	Std.	Measurement	2s /synchronized	1 min/with science data	Nominal value \pm 10V (TBC)	2	2/set flag low or high		transmitted only as off/low/high/ok flag
NRNAD150	ROSINA_DFMS_MAGNET_TEMPERATURE	ASP B MAG Temp	Temperature measured on the sector magnet	Measured	Std.	Measurement	2s /synchronized with	1 min/with science data		4		mass settings (calculation of VACCL)	transmitted as value
NRNAD152	ROSINA_DFMS_MCP_BACKVOLTAGE1	FDP MCP Back 1	MCP back side high-voltage 1	Measured	Std.	Measurement	2s /synchronized with	1 min/with science data	Nominal value \pm 10V (TBC)	2	1/2/set flag low or high		Nominal value for Back \geq -300V and \leq 40V ! (TBC)
NRNAD153	ROSINA_DFMS_MCP_BACKVOLTAGE2	FDP MCP Back 2	MCP back side high-voltage 2	Measured	Std.	Measurement	2s /synchronized with	1 min/with science data	Nominal value \pm 10V (TBC)	2	1/2/set flag low or high		Nominal value for Back \geq -300V and \leq 40V ! (TBC)
NRNAD154	ROSINA_DFMS_RDP_TEMPERATURE	FDP RDP Temp	Temperature measured in detector proximity electronics	Measured	Std.	Measurement	2s / synchronized with	1 min	> +50 °C	3	Deactivate RDP heater	RDP heater operation	If LEDA temperature measurement fails, LEDA temperature will be set to +50 °C
NRNAD155	ROSINA_DFMS_LEDA_TEMPERATURE	FDP LEDA Temp	Temperature measured internally in LEDA512 chip	Measured	Std.	Measurement	2s /synchronized	1 min	< +20-TBD °C	3	Activate RDP heater if RDP	RDP heater operation	
NRNAD156	ROSINA_DFMS_FARADAY_SIGNAL	FDP Cup Out	Output signal of faraday cup	Measured	Std.	Measurement	2s /synchronized	1 min/with science data	n/a	4			
NRNAD157	ROSINA_DFMS_FARADAY_LOW_FLAG	FDP Low Range Status	Status of Faraday cup electrometer low range relay	Flag	Std.	Measurement	2s / synchronized	1 min	-3 to +3 V	4			
NRNAD158	ROSINA_DFMS_FARADAY_MED_FLAG	FDP Medium Range Status	Status of Faraday cup electrometer medium range	Flag	Std.	Measurement	2s / synchronized	1 min	-3 to +3 V	4			
NRNAD159	ROSINA_DFMS_MCP_FRONTVOLTAGE	FDP MCP HV	MCP front side high-voltage	Measured	Std.	Measurement	2s /synchronized	1 min/with science data	Nominal value \pm 50V (TBC)	2	1/2/set flag low or high		
NRNAD15A	ROSINA_DFMS_FDPC_CURRENT	FDP FDPC_I	MCP high voltage convertor primary current	Measured	Std.	Measurement	2s / synchronized	1 min	< TBD upper limit (provided)	2	1		
NRNAD15B		FDP Cup Rep V	Repeller voltage on Faraday cup	Measured	Std.	Measurement	2s / synchronized	2 min	TBD	4			
NRNAD15C	ROSINA_DFMS_FAR_REP_ENABL_FLAG	FDP_STAT FC Rep. Ena	Faraday Cup Repeller Enabled	Flag	Std.	Measurement	2s /synchronized	with science data	On/Off	2	set flag low or high		transmitted only as off/on flag
NRNAD15C	ROSINA_DFMS_RDP_HEATER_FLAG	FDP_STAT RDP Heater	Remote detector pack heater Enabled	Flag	Std.	Measurement	2s / synchronized	1 min	On/Off	3	8		RDP heating successful ?

RSDB	PDS Keyword	HK-Mnemonic old	Description	HK Type	Std./Ext. Pack.	Monitoring if	Sampling frequency	Transmission frequency S/C	Range	Criticality	Action, if outside range	Used for regulation	Remarks
NRNAD15C	ROSINA_DFMS_MCPHV_ACC_BSY	FDP_STAT Accu Busy	MCP/LEDA Accumulation busy	Flag	ext.	Measurement	2s / synchronized	5 min	On/Off	4			
NRNAD15C	ROSINA_DFMS_MCPHV_ENABLED_FL	FDP_STAT MCP HV Ena	MCP HV Enabled	Flag	ext.	Measurement	1 min / synchronized	5 min	On/Off	4			
NRNAD15C	ROSINA_DFMS_MCPHV_REDUCED_FL	FDP_STAT MCP HV Red	MCP HV Reduced Status	Flag	ext.	Measurement	1 min / synchronized	5 min	On/Off	4			
NRNAD15C	ROSINA_DFMS_MCPHV_SAFE_FLAG	FDP_STAT HV Safe	MCP HV Safe Status	Flag	ext.	Measurement	1 min / synchronized	5 min	On/Off	4			
NRNAD161	ROSINA_DFMS_MEP_A_TEMPERATURE	MEP A Temp	Temperature measured in the MEP-A board (command)	Measured	Ext.	Measurement	2s / synchronized	5 min	-30 to +60 °C (TBC)	3	TBD		
NRNAD162	ROSINA_DFMS_MEP_N_TEMPERATURE	MEP N Temp	Temperature measured in the MEP-N board (low)	Measured	Ext.	Measurement	2s / synchronized	5 min	-30 to +60 °C (TBC)	3	TBD		
NRNAD163	ROSINA_DFMS_COV_MOT_TEMPERAT	MEP MOT Temp	Cover motor temperature	Measured	Ext.	No measurement with cover operation	2s	5 min		2	4		
NRNAD164	ROSINA_DFMS_MEPD_REFVOLT	MEP D REF RED	MEP D reference reduced	Measured	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD165	ROSINA_DFMS_MEPE_REFVOLT	MEP E REF RED	MEP E reference reduced	Measured	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD166	ROSINA_DFMS_CEM_ANALOG_LG	MEP DAC PWA	Spare										will be low gain analog output of CEM for FS
NRNAD167	ROSINA_DFMS_MEP_DAC_STIMAMP	MEP DAC STIM AMP	Spare										
NRNAD168	ROSINA_DFMS_MEP_REFVOLT	MEP VREF	MEP reference voltage	Measured	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD169	ROSINA_DFMS_MEPG_TEMPERATURE	MEP G Temp	Temperature measured in the MEP-G board (Ion source)	Measured	Ext.	Measurement	2s / synchronized	5 min	-30 to +60 °C (TBC)	3	TBD		
NRNAD16A	ROSINA_DFMS_ISC_SLL_REFVOLT	ISC SLL RMON	Source lens left reference program voltage	Measured	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD16B	ROSINA_DFMS_ISC_SLR_REFVOLT	ISC SLR RMON	Source lens right reference program voltage	Measured	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD16C	ROSINA_DFMS_ISC_SES_REFVOLT	ISC SES RMON	Source exit slit reference program voltage	Measured	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD16D	ROSINA_DFMS_ISC_SEB_REFVOLT	ISC SEB RMON	Beta deflector reference program voltage	Measured	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD16E	ROSINA_DFMS_ISC_TLR_REFVOLT	ISC TLR RMON	Transfer lens right reference program voltage	Measured	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD16F	ROSINA_DFMS_ISC_TLL_REFVOLT	ISC TLL RMON	Transfer lens left reference program voltage	Measured	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD170	ROSINA_DFMS_MEP_H_TEMPERATUR	MEP H Temp	Temperature measured in the MEP-H board (transfer)	Measured	Ext.	Measurement	2s / synchronized	5 min	-30 to +60 °C (TBC)	3	TBD		
NRNAD171	ROSINA_DFMS_ISC_HV_REFVOLT	ISC HV RMON	Raw -2.8kV reference voltage	Measured	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD172	ROSINA_DFMS_ISC_SEB_DRIVEVOLT	ISC SEB DMON	Beta deflector opto-coupler drive voltage	Measured	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD173	ROSINA_DFMS_ISC_SES_DRIVEVOLT	ISC SES DMON	Source exit slit opto-coupler drive voltage	Measured	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD174	ROSINA_DFMS_ISC_SLR_DRIVEVOLT	ISC SLR DMON	Source lens right opto-coupler drive voltage	Measured	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD175	ROSINA_DFMS_ISC_SLL_DRIVEVOLT	ISC SLL DMON	Source lens left opto-coupler drive voltage	Measured	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD176	ROSINA_DFMS_ISC_TLR_DRIVEVOLT	ISC TLR DMON	Transfer lens right opto-coupler drive voltage	Measured	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD177	ROSINA_DFMS_ISC_TLL_DRIVEVOLT	ISC TLL DMON	Transfer lens left opto-coupler drive voltage	Measured	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD178	ROSINA_DFMS_ISC_HV_DRIVEVOLT	ISC HV DMON	Raw -2.8kV converter drive voltage	Measured	Ext.	Measurement	2s / synchronized	5 min		4	no action		

RSDB	PDS Keyword	HK-Mnemonic old	Description	HK Type	Std./Ext. Pack.	Monitoring if	Sampling frequency	Transmission frequency S/C	Range	Criticality	Action, if outside range	Used for regulation	Remarks
NRNAD179	ROSINA_DFMS_ISC_PWR_DRIVEVOLT	ISC PWR DMON	Analog power monitor	Measured	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD17A	ROSINA_DFMS_ISC_HV	ISC HV VMON	Raw -2.8kV voltage	Measured	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD17B	ROSINA_DFMS_ISC_HV_CURRENT	ISC HV I	Raw -2.8kV converter current	Measured	Ext.	Measurement	2s / synchronized	5 min	TBD (provided by T.	3	TBD		
NRNAD17C	ROSINA_DFMS_ESA_COARSE_DAC	ASP C_ESAC_DAC	analyzer part, electrostatic analyzer coarse voltage,	Measured	Ext.	Measurement	2s / synchronized	6 min					
NRNAD17D	ROSINA_DFMS_ASP_HVBIAS_REFVOLT	ASP E HVB ERR	Internal ASP HV Bias monitor	Measured	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD17E	ROSINA_DFMS_ASP_HVFPD_ERROR	ASP E FDP ERR	HV FDP reference error output of regulation loop	Measured	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD17F	ROSINA_DFMS_ASP_Z2QV_ERROR	ASP D Z2QV ERR	Zoom quadruple 2 vertical error output of regulation loop	Measured	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD180	ROSINA_DFMS_ASP_Z2QH_ERROR	ASP D Z2QH ERR	Zoom quadruple 2 horizontal error output of regulation loop	Measured	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD181	ROSINA_DFMS_ASP_ESS2_ERROR	ASP D ESS2 ERR	Entrance slit switch condenser 2 error output of	Measured	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD182	ROSINA_DFMS_ASP_ESS1_ERROR	ASP D ESS1 ERR	Entrance slit switch condenser 1 error output of	Measured	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD183	ROSINA_DFMS_ASP_ESSAO_ERROR	ASP C ESAO ERR	Electrostatic analyzer error output of regulation loop	Measured	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD184	ROSINA_DFMS_ASP_ESAI_ERROR	ASP C ESAI ERR	Electrostatic analyzer error output of regulation loop	Measured	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD185	ROSINA_DFMS_ASP_Z1QV_ERROR	ASP C Z1QV ERR	Zoom quadruple 1 vertical error output of regulation loop	Measured	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD186	ROSINA_DFMS_ASP_Z1QH_ERROR	ASP C Z1QH ERR	Zoom quadruple 1 horizontal error output of regulation loop	Measured	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD187	ROSINA_DFMS_ASP_CEMREP_ERROR	ASP A CEM ERR	CEM Repeller error output of regulation loop	Measured	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD188	ROSINA_DFMS_ASP_HP_ERROR	ASP A HP ERR	Hexapole error output of regulation loop	Measured	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD189	ROSINA_DFMS_ASP_RQ_ERROR	ASP A RQ ERR	Rotation quadruple error output of regulation loop	Measured	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD18A	ROSINA_DFMS_ASP_MP_ERROR	ASP A MP ERR	Matsuda plates error output of regulation loop	Measured	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD18B	ROSINA_DFMS_ASPC_TEMPERATURE	ASP B ESA Temp	Temperature measured in the ASP-C board (power)	Measured	Ext.	Measurement	2s / synchronized	5 min	-30 to +60 °C (TBC)	3	TBD		
NRNAD18C	ROSINA_DFMS_ASPB_TEMPERATURE	ASP B ASP Temp	Temperature measured in the ASP-B board (digital control)	Measured	Ext.	Measurement	2s / synchronized with measurement	5 min	-30 to +60 °C (TBC)	3	TBD		
NRNAD18D	ROSINA_DFMS_ASP_15V_MONITOR	ASP B 15V Mon	ASP 15 V supply voltage	Measured	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD18E	ROSINA_DFMS_ASP_HV_ENABL_FLAG	ASP_STAT HV On	Internal ASP HV Bias turned on	Flag	Ext.	Measurement	2s / synchronized with measurement	5 min		4	no action		
NRNAD18E	ROSINA_DFMS_ASP_HV_RED_FLAG	ASP_STAT ASP A	ASP-A HV output Enabled	Flag	Ext.	Measurement	2s / synchronized with measurement	5 min		4	no action		

RSDB	PDS Keyword	HK-Mnemonic old	Description	HK Type	Std./Ext. Pack.	Monitoring if	Sampling frequency	Transmission frequency S/C	Range	Criti-cality	Action, if outside range	Used for regulation	Remarks
NRNAD18E	ROSINA_DFMS_ASPE_HV_ENABLED_F	ASP_STAT ASP C	ASP-C HV output Enabled	Flag	Ext.	Measurement	2s / synchronized with measurement	5 min		4	no action		
NRNAD18E	ROSINA_DFMS_ASPE_HV_ENABLED_F	ASP_STAT ASP D	ASP-D HV output Enabled	Flag	Ext.	Measurement	2s / synchronized with measurement	5 min		4	no action		
NRNAD18E	ROSINA_DFMS_ASPE_HV_ENABLED_F	ASP_STAT ASP E	ASP-E HV output Enabled	Flag	Ext.	Measurement	2s / synchronized with measurement	5 min		4	no action		
NRNAD18E	ROSINA_DFMS_ASPE_HV_ENABLED_F	ASP_STAT HV Safe	ASP HV Safe Status (inhibits ASP HV Ena and ASP A Ena through ASP E)	Flag	Ext.	Measurement	2s / synchronized with measurement	5 min		4	no action		
NRNAD18E	ROSINA_DFMS_ASPE_HV_SAFE_FLAG	ASP_STAT HV Red	ASP HV Reduced Status Enabled (HV reduced by 8)	Flag	Ext.	Measurement	2s / synchronized	5 min		4	no action		
NRNAD18F	ROSINA_DFMS_FDP_GROUND_VOLTAGE	FDP Ground	Floating detector pack 0 Volt reference	Measured	Ext.	Measurement	2s / synchronized	5 min	0V ± 0.5V (TBC)	3	1 / 2		
NRNAD190	ROSINA_DFMS_FDP_5NEG_VOLTAGE	FDP -5V	Floating detector pack -5 V supply voltage	Measured	Ext.	Measurement	2s / synchronized	5 min	0V ± 0.5V (TBC)	3	1 / 2		
NRNAD191	ROSINA_DFMS_FDP_5POS_VOLTAGE	FDP +5V	Floating detector pack +5 V supply voltage	Measured	Ext.	Measurement	2s / synchronized with	5 min	0V ± 0.5V (TBC)	3	1 / 2		
NRNAD192	ROSINA_DFMS_FDP_75POS_VOLTAGE	FDP +7.5V	Floating detector pack +7.5 V supply voltage	Measured	Ext.	Measurement	2s / synchronized	5 min	+7.5V ± 0.5V (TBC)	3	1 / 2		
NRNAD193	ROSINA_DFMS_FDP_75NEG_VOLTAGE	FDP -7.5V	Floating detector pack -7.5 V supply voltage	Measured	Ext.	Measurement	2s / synchronized	5 min	+7.5V ± 0.5V (TBC)	3	1 / 2		
NRNAD194	ROSINA_DFMS_FDPA_TEMPERATURE	REF43 Temp	Temperature measured in reference circuit on FDP-A	Measured	Ext.	Measurement	2s / synchronized	5 min		4	no action		
						Measurement	synchronized with	1 min	-3 to +3 V	4	TBD		

General remark: In case of filament 2 operation, the monitoring procedure for FIL 1 Emis and FIL 2 Emis have to be exchanged !

Legend

Criticality	Description	Monitoring, action items
1	emergency case	immediate switch off, emergency handling by operator
2	short time effects	immediate and appropriate action by DPU
3	long time effects	observation for a certain time, appropriate action by operator
4	not critical at all	no monitoring, no actions

Action	Description
1	operator.
2	operator.

RSDb	PDS Keyword	HK-Mnemonic old	Description	HK Type	Std./Ext. Pack.	Monitoring if	Sampling frequency	Transmission frequency S/C	Range	Criti-cality	Action, if outside range	Used for regulation	Remarks
3			Turn off filament, try it again. If problem still exists, turn DFMS completely off until appropriate reaction by operator.										
4			TBD further action.										
5			TBD further action.										
6			Turn DFMS off, TBD further action.										
7			Stop GCU operation, if problems still exists, turn DFMS completely off, TBD further action.										
8			Stop RDP heater operation, try it again. If problems still exists, TBD further action.										
9			Stop IS heater operation, try it again. If problems still exists, TBD further action.										
10			Stop GCU operation, try it again. If problems still exists, TBD further action.										

RSDB	HK-Mnemonic old	PDS keyword	Description	HK Type	Std./Ex t. Pack.	Monitoring if	Sampling frequency	Transmission frequency S/C	Range	Criticality	Action, if outside range	Use d for regulation	Remarks
0	NRNAR101		RTOF Std. HK Header		std		2s	1 min					
1					std		2s	1 min					
			Spare		std		2s	1 min					
				Flag	std		2s	1 min					
				Flag	std		2s	1 min					
2	NRNAR103	ROSINA_RTOF_SCI_HK_COUNT	RTOF HK counter	Value	std		2s	1 min					
4	NRNAR104	ROSINA_RTOF_SCI_CMD_COUNT	RTOF Cmd counter	Value	std		2s	1 min					
6	NRNAR105	ROSINA_RTOF__SCI_CMD_ERR_CNT	RTOF Cmd Error counter	Value	std		2s	1 min					
8	NRNAR106	ROSINA_RTOF__SCI_CMD_ERR_POS	RTOF Cmd Error position	Value	std		2s	1 min					
10	NRNAR107	ROSINA_RTOF_SCI_COUNT	RTOF Science counter	Value	std		2s	1 min					
12	NRNAR108	ROSINA_RTOF_SCI_ERR_COUNT	RTOF Science Error counter	Value	std		2s	1 min					
14	NRNAR109	ROSINA_RTOF_SCI_ERR_POSITION	RTOF Science Error position	Value	std		2s	1 min					
16	NRNAR10A	ROSINA_RTOF_SCI_MODE	RTOF S/W mode	Value	std		2s	1 min					
18	NRNAR10B	ROSINA_RTOF_SCI_STAT	RTOF S/W status	Value	std		2s	1 min					
20	NRNAR10C	ROSINA_RTOF_SCI_MODE_NUMBER	RTOF Science Mode number	Value	std		2s	1 min					
22	NRNAR10D		Status Bits 1		std		2s	1 min					
		ROSINA_RTOF_SCI_PSU_9KV_FLAG	power supply 9 kV enable status	Flag	std		2s	1 min		4			
		ROSINA_RTOF_SCI_PSU_70V_FLAG	power supply 70 V enable status	Flag	std		2s	1 min		4			
		ROSINA_RTOF_SCI_PSU_OS_MCP_FLAG	power supply ortho MCP enable status	Flag	std		2s	1 min		4			
		ROSINA_RTOF_SCI_PSU_SS_MCP_FLAG	power supply storage MCP enable status	Flag	std		2s	1 min		4			
		ROSINA_RTOF_SCI_PSU_HM_POW_FLAG	power supply hard mirror enable status	Flag	std		2s	1 min		4			
		ROSINA_RTOF_SCI_PSU_PULS_FLAG	power supply pulser enable status	Flag	std		2s	1 min		4			

RSDB	HK-Mnemonic old	PDS keyword	Description	HK Type	Std./Ex t. Pack.	Monitoring if	Sampling frequency	Transmission frequency S/C	Range	Criticality	Action, if outside range	Use d for regulation	Remarks
			Spare	Flag	std		2s	1 min					
		ROSINA_RTOF_SCI_ETS_RAM_T_ACT_F	ETS Ram Test Active	Flag	std		2s	1 min		4			
		ROSINA_RTOF_SCI_ETS_RAM_T_STA_F	ETS Ram Test Status	Flag	std		2s	1 min		4			
		ROSINA_RTOF_SCI_ETS_RAM_T_DATA	ETS Ram Test Data	Flag	std		2s	1 min		4			
		ROSINA_RTOF_SCI_ETS_INPUT_STAT_F	Input Selection: Ion, Gas or Calibrator (Input Select)	Flag	std		2s	1 min		4			
		N.U	ETS Output Enable	Flag	std		2s	1 min		4			
		ROSINA_RTOF_SCI_ETS_CAL_TRIG_F	Equivalent Time Sampling_Controller	Flag	std		2s	1 min		4			
24	NRNAR10E	ROSINA_RTOF_SCI_LOWERREADADDRESS	ETS Lower Readout Address	Value	std		2s	1 min		4			
26	NRNAR10F	ROSINA_RTOF_SCI_UPPERREADADDRESS	ETS Upper Readout Address	Value	std		2s	1 min		4			
28	NRNAR110		Status Bits 2		std		2s	1 min		4			
			Spare	Flag	std		2s	1 min					
		ROSINA_RTOF_SCI_FEC_FIL2_SS_FLAG	Filament emission controller Fil 2 Storage Status	Flag	std		2s	1 min		4			
		ROSINA_RTOF_SCI_FEC_FIL1_SS_FLAG	Filament emission controller Fil 1 Storage Status	Flag	std		2s	1 min		4			
		ROSINA_RTOF_SCI_FEC_FIL2_OS_FLAG	Filament emission controller Fil 2 Ortho Status	Flag	std		2s	1 min		4			
		ROSINA_RTOF_SCI_FEC_FIL1_OS_FLAG	Filament emission controller Fil 1 Ortho Status	Flag	std		2s	1 min		4			
		ROSINA_RTOF_SCI_FEC_I_STATUS_FLAG	Filament emission controller I Status	Flag	std		2s	1 min		4			

RSDB	HK-Mnemonic old	PDS keyword	Description	HK Type	Std./Ext. Pack.	Monitoring if	Sampling frequency	Transmission frequency S/C	Range	Criticality	Action, if outside range	Used for regulation	Remarks
		ROSINA_RTOF_SCI_FEC_EH_OS_FLAG	Filament emission controller EH Ortho Status	Flag	std		2s	1 min		4			
		ROSINA_RTOF_SCI_FEC_EH_SS_FLAG	Filament emission controller EH Storage Status	Flag	std		2s	1 min		4			
		ROSINA_RTOF_SCI_LRA_BIT16	Equivalent Time Sampling_Postprocessor (ETS Lower Readout Address Bit 16)	Flag	std		2s	1 min		4			
		ROSINA_RTOF_SCI_URA_BIT16	Equivalent Time Sampling_Postprocessor (ETS upper Readout Address Bit 16)	Flag	std		2s	1 min		4			
		ROSINA_RTOF_SCI_ETSLOWERRANGE_F	Equivalent Time Sampling_Postprocessor (ETS Lower Range)	Flag	std		2s	1 min		4			
		ROSINA_RTOF_SCI_ETSUPPERRANGE_F	Equivalent Time Sampling_Postprocessor (ETS Upper Range)	Flag	std		2s	1 min		4			
30	NRNAR111		Spare		std		2s	1 min					
32	NRNAR112	ROSINA_RTOF_SCI_OS_FIHEAT_I	Filament emission controller_Orthosource_Filament Heater_current [mA] (MC_FEC_ION_FIHEAT_I)	measured		FEC is running	2s	1 min	?	2	11		nominal range TBD ???
34	NRNAR113	ROSINA_RTOF_SCI_SS_FIHEAT_I	Filament emission controller_Storageource_Filament Heater_current [mA] (MC_FEC_GAS_FIHEAT_I)	measured		FEC is running	2s	1 min	?	2	11		nominal range TBD ???

RSDB	HK-Mnemonic old	PDS keyword	Description	HK Type	Std./Ext. Pack.	Monitoring if	Sampling frequency	Transmission frequency S/C	Range	Criticality	Action, if outside range	Used for regulation	Remarks
36	NRNAR114	ROSINA_RTOF_SCI_OS_REP_V_A	Orthosource repeller voltage #A	measured	std		2s	1 min	?	3			
38	NRNAR115	ROSINA_RTOF_SCI_OS_REP_V_B	Ortho source repeller voltage #B	measured	std		2s	1 min	?	3			
40	NRNAR116	ROSINA_RTOF_SCI_SS_REP_V_A	Storage source repeller voltage #A	measured	std		2s	1 min	?	3			
42	NRNAR117	ROSINA_RTOF_SCI_SS_REP_V_B	Storage source repeller voltage #B	measured	std		2s	1 min	?	3			
44	NRNAR118	ROSINA_RTOF_SCI_OS_FIL_V	Orthosource filament voltage	measured	std		2s	1 min	?	3			
46	NRNAR119	ROSINA_RTOF_SCI_SS_FIL_V	Storage source filament voltage	measured	std		2s	1 min	?	3			
48	NRNAR11A	ROSINA_RTOF_SCI_SS_FIL_I	Filament emission controller_Storage_source_Filament emission_current [μA] (MC_Filament emission controller_Storage_FIL_I)	measured	std		2s	1 min	? +-15uA	3	27		
50	NRNAR11B	ROSINA_RTOF_SCI_OS_ENT1_V	Filament emission controller_Orthosource Entrance1_voltage (MC_Filament emission controller_Ortho_ENT1_V)	measured	std		2s	1 min	? +-5V	3	28		
52	NRNAR11C	ROSINA_RTOF_SCI_OS_FIL_I	Filament emission controller_Orthosource Entrance1_current = Emission current [μA] (MC_Filament emission controller_Ortho_ENT1_I)	measured	std		2s	1 min	? +-15uA	3	27		
54	NRNAR11D	ROSINA_RTOF_SCI_SS_TRAP_V	Storage source trap voltage	measured	std		2s	1 min	? +-30V	3	28		

RSDB	HK-Mnemonic old	PDS keyword	Description	HK Type	Std./Ext. Pack.	Monitoring if	Sampling frequency	Transmission frequency S/C	Range	Criticality	Action, if outside range	Used for regulation	Remarks
56	NRNAR11E	ROSINA_RTOF_SCI_HVVG_V	Filament emission controller_voltage_~+24V (MC_Filament emission controller_HVVG_V)	Flag On or off; measured			2s	1 min	? 24+-6V	3	29		
58	NRNAR11F	ROSINA_RTOF_SCI_HEAT_VG_V	Filament emission controller_voltage_~+24V (MC_Filament emission controller_HEAT_VG_V)	Flag On or off; measured			2s	1 min	? 24+-6V	3	29		
60	NRNAR120	ROSINA_RTOF_SCI_FEC_TEMP	Temperature of Filament emission controller	measured			2s	1 min	?<50 °C	3	29		
62	NRNAR121	ROSINA_RTOF_SCI_GCU_POW_1	GCU_Storage_source_Power On or Off (MC_GCU_POW_#1)	measured			200 ms	1 min		4			
64	NRNAR122	ROSINA_RTOF_SCI_GCU_POW_2	GCU_Ortho_source_Power On or Off (MC_GCU_POW_#2)	measured			200 ms	1 min		4			
66	NRNAR123	ROSINA_RTOF_SCI_GCU_1_I	Current in gas calibration unit 1	measured		GCU POWER ON	200 ms	1 min	?	2	12		has to be 0 in standby On time maximum TBD

RSDB	HK-Mnemonic old	PDS keyword	Description	HK Type	Std./Ext. Pack.	Monitoring if	Sampling frequency	Transmission frequency S/C	Range	Criticality	Action, if outside range	Used for regulation	Remarks
68	NRNAR124	ROSINA_RTOF_SCI_GCU_2_I	Current in gas calibration unit 2	measured	std	GCU POWER ON	200 ms	1 min	?	2	12		has to be 0 in standby On time maximum TBD
70	NRNAR125	ROSINA_RTOF_SCI_GCU_OUT_PRES_1	Output pressure of gas calibration unit 1	measured	std	GCU POWER ON	200 ms	1 min	?	2	12	yes	
72	NRNAR126	ROSINA_RTOF_SCI_GCU_OUT_PRES_2	Output pressure of gas calibration unit 2	measured	std	GCU POWER ON	200 ms	1 min	?	2	12	yes	
74	NRNAR127	ROSINA_RTOF_SCI_GCU_TEMP_PIRAN_1	Temperature of pirani in gas calibration unit 1	measured	std		200 ms	1 min	?<50 °C	1	20		
76	NRNAR128	ROSINA_RTOF_SCI_GCU_TEMP_PIRAN_2	Temperature of pirani in gas calibration unit 2	measured	std		200 ms	1 min	?<50 °C	1	20		
78	NRNAR129	ROSINA_RTOF_SCI_GEX_TEMP	Gas Extraction Pulser_Temperature (MC_GEX_TEMP)	measured	std		2 s	1 min	?<50 °C	3	29		
80	NRNAR12A	ROSINA_RTOF_SCI_HM_PW	Hard mirror_Pulse width (MC_HM_PW)	measured	std		2 s	1 min		4			
82	NRNAR12B	ROSINA_RTOF_SCI_HM_DEL	hard mirror pulse delay	measured	std		2 s	1 min		4			
84	NRNAR12C	ROSINA_RTOF_SCI_HM_TEMP	hard mirror pulser temperature	measured	std		2 s	1 min	?<50 °C	3	29		
86	NRNAR12D	ROSINA_RTOF_SCI_MOT_TORQUE	Torque on cover opening mechanism motor	measured	std		2 s	1 min	?	3			????
88	NRNAR12E	ROSINA_RTOF_SCI_MOT_TEMP	Temperature on cover opening mechanism motor	measured	std		2 s	1 min	?<100 °C	3	29		
90	NRNAR12F		Cover opening mechanism Motor Position		std		2 s	1 min					

RSDB	HK-Mnemonic old	PDS keyword	Description	HK Type	Std./Ext. Pack.	Monitoring if	Sampling frequency	Transmission frequency S/C	Range	Criticality	Action, if outside range	Used for regulation	Remarks
		ROSINA_RTOF_SCI_MOT_ON_FLAG	Motor On	Flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_MOT_POSITION_F	Motor Positioning	Flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_VELOCITY_FLAG	Motor Velocity	Flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_OPEN_SWITCH_F	Open Switch	Flag									
					std		2 s	1 min		2	13		May only be reached in Search Switch Function
		ROSINA_RTOF_SCI_CLOSED_SWITCH_F	Closed Switch	Flag									
					std		2 s	1 min		2	13		May only be reached in Search Switch Function
		ROSINA_RTOF_SCI_HALL_ERR_FLAG	Hall sensor in motor Error	Flag									
					std		2 s	1 min		3			
		ROSINA_RTOF_SCI_HALL_ERR_FATAL_F	Hall sensor Error Fatal	Flag									
					std		2 s	1 min		2	14		

RSDB	HK-Mnemonic old	PDS keyword	Description	HK Type	Std./Ext. Pack.	Monitoring if	Sampling frequency	Transmission frequency S/C	Range	Criticality	Action, if outside range	Use for regulation	Remarks
		ROSINA_RTOF_SCI_MOT_POSITION	Motor Position	Flag									Measured ! FLAG ?? When Position exceeds range TBD ?
92	NRNAR130		Main controller Power State 2		std		2 s	1 min		2	13		
				Flag	std		2 s	1 min					
				Flag	std		2 s	1 min					
				Flag	std		2 s	1 min					
				Flag	std		2 s	1 min					
		ROSINA_RTOF_SCI_HEATER_GAS_ON_F	Heater Storage source On	Flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_HEATER_GAS_OFF_F	Heater Storage source Off	Flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_HEATER_OS_ON_F	Heater Ortho source On	Flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_HEATER_OS_OFF_F	Heater Ortho source Off	Flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_MOT_HALL_ENA_F	Motor Hall sensor Enable	Flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_MOT_HALL_DIS_F	Motor Hall sensor Disable	Flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_MOT_DIR_OPEN_F	Motor Direction Open	Flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_MOT_DIR_CLOSE_F	Motor Direction Close	Flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_MOT_POW_ON_F	Motor Power On	Flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_MOT_POW_OFF_F	Motor Power Off	Flag	std		2 s	1 min		4			

RSDB	HK-Mnemonic old	PDS keyword	Description	HK Type	Std./Ex t. Pack.	Monitoring if	Sampli ng freque ncy	Transmi ssion frequen cy S/C	Range	Criti- cality	Action, if outside range	Use d for regula tion	Remar ks
		ROSINA_RTOF_SCI_MOT_HIG_TOR_ON_F	Motor High Torque On	Flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_MOT_HIG_TOR_OFF_F	Motor High Torque Off	Flag	std		2 s	1 min		4			
94	NRNAR131		Main controller Pulser State		std		2 s	1 min					
		ROSINA_RTOF_SCI_SS_PULS_ON_F	Storage Pulser On	flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_SS_PULS_OFF_F	Storage Pulser Off	flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_HM_PULS_ON_F	Hard mirror Pulser On	flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_HM_PULS_OFF_F	Hard mirror Pulser Off	flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_OS_PULS_ON_F	Ortho Pulser On	flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_OS_PULS_OFF_F	Ortho Pulser Off	flag	std		2 s	1 min		4			
			Spare	flag	std		2 s	1 min		4			
96	NRNAR132		Main controller Power State 6		std		2 s	1 min					
			Spare	Flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_DISABLE_ETS_LU_F	Disable ETS Latch Up (Disable ETS LU)	Flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_ENABLE_ETS_LU_F	Enable ETS Latch Up (Enable ETS LU)	Flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_ETS_VCA_ON_FLAG	Equivalent Time Sampling_analog voltage_On (ETS VCA On)	Flag									
					std		2 s	1 min		4			
		ROSINA_RTOF_SCI_ETS_VCA_OFF_FLAG	Equivalent Time Sampling_analog voltage_Off (ETS VCA Off)	Flag									
					std		2 s	1 min		4			
		ROSINA_RTOF_SCI_ETS_VDD_ON_FLAG	Equivalent Time Sampling_15V_On (ETS VDD On)	Flag									
					std		2 s	1 min		4			
		ROSINA_RTOF_SCI_ETS_VDD_OFF_FLAG	Equivalent Time Sampling_15V_Off (ETS VDD Off)	Flag									
					std		2 s	1 min		4			

RSDB	HK-Mnemonic old	PDS keyword	Description	HK Type	Std./Ext. Pack.	Monitoring if	Sampling frequency	Transmission frequency S/C	Range	Criticality	Action, if outside range	Use for regulation	Remarks
		ROSINA_RTOF_SCI_ETS_VCC_ON_FLAG	Equivalent Time Sampling_5V_On (ETS VCC On)	Flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_ETS_VCC_OFF_FLAG	Equivalent Time Sampling_5V_Off (ETS VCC Off)	Flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_ETS_VSH_VE_ON_FLAG	Equivalent Time Sampling_operation voltage_~58V_On (ETS VSH/VE On)	Flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_ETS_VSH_VE_OFF_FLAG	Equivalent Time Sampling_operation voltage_~58V_Off (ETS VSH/VE Off)	Flag	std		2 s	1 min		4			
98	NRNAR133		Main controller Power State 8		std			1 min					
		ROSINA_RTOF_SCI_GCU1_ON_FLAG	Gas calibration unit 1 On	Flag	std		200 ms	1 min		4			
		ROSINA_RTOF_SCI_GCU1_OFF_FLAG	Gas calibration unit 1 Off	Flag	std		200 ms	1 min		4			
		ROSINA_RTOF_SCI_GCU2_ON_FLAG	Gas calibration unit 2 On	Flag	std		200 ms	1 min		4			
		ROSINA_RTOF_SCI_GCU2_OFF_FLAG	Gas calibration unit 2 Off	Flag	std		200 ms	1 min		4			
		ROSINA_RTOF_SCI_GCU1_VALVE_ON_FLAG	Gas calibration unit 1 Valve On	Flag	std		200 ms	1 min		4			
		ROSINA_RTOF_SCI_GCU1_VALVE_OFF_FLAG	Gas calibration unit 1 Valve Off	Flag	std		200 ms	1 min		4			
		ROSINA_RTOF_SCI_GCU2_VALVE_ON_FLAG	Gas calibration unit 2 Valve On	Flag	std		200 ms	1 min		4			
		ROSINA_RTOF_SCI_GCU2_VALVE_OFF_FLAG	Gas calibration unit 2 Valve Off	Flag	std		200 ms	1 min		4			

RSDB	HK-Mnemonic old	PDS keyword	Description	HK Type	Std./Ext. Pack.	Monitoring if	Sampling frequency	Transmission frequency S/C	Range	Criticality	Action, if outside range	Used for regulation	Remarks
		ROSINA_RTOF_SCI_FEC_VCC_ON_FLAG	Filament emission controller_5V_On (Filament emission controller VCC On)	Flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_FEC_VCC_OFF_FLAG	Filament emission controller_5V_Off (Filament emission controller VCC Off)	Flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_FEC_VDD_ON_FLAG	Filament emission controller_15V_On (Filament emission controller VDD On)	Flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_FEC_VDD_OFF_FLAG	Filament emission controller_15V_Off (Filament emission controller VDD Off)	Flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_FEC_HEAT_VG_ON_F	Filament emission controller_24V_On (Filament emission controller Heater VG On)	Flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_FEC_HEAT_VG_OFF_F	Filament emission controller_24V_Off (Filament emission controller Heater VG Off)	Flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_FEC_HV_VG_ON_F	Filament emission controller_24V_On (Filament emission controller HV VG On)	Flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_FEC_HV_VG_OFF_F	Filament emission controller_24V_Off (Filament emission controller HV VG Off)	Flag	std		2 s	1 min		4			

RSDB	HK-Mnemonic old	PDS keyword	Description	HK Type	Std./Ext. Pack.	Monitoring if	Sampling frequency	Transmission frequency S/C	Range	Criticality	Action, if outside range	Use for regulation	Remarks
100	NRNAR134	ROSINA_RTOF_SCI_MC_ETSL_TEMP	Main controller_WCS_TEMP = ETSL_TEMP	measured	std		2 s	1 min	?<50 °C	3	17		NEW: ETSLIGHT_TEMP
102	NRNAR135	ROSINA_RTOF_SCI_MC_ETS_TEMP_CLK	ETS temperature on clock circuitry	measured	std		2 s	1 min		3	15		Max Temperature TBD
104	NRNAR136	ROSINA_RTOF_SCI_MC_ETS_TEMP_DIG	ETS temperature on digital circuitry	measured	std		2 s	1 min	?<50 °C	3	15		Max Temperature TBD
106	NRNAR137	ROSINA_RTOF_SCI_PSDC_ELB_OS	Entrance Lens_B_Orthosource_voltage=lower lens (PSDC_ELB_I)	measured	std		2 s	1 min	?+-5V	3	28		
108	NRNAR138	ROSINA_RTOF_SCI_PSDC_ELA_OS	Entrance Lens_A_Orthosource_voltage=upper lens (PSDC_ELA_I)	measured	std		2 s	1 min	?+-5V	3	28		
110	NRNAR139	ROSINA_RTOF_SCI_PSDC_GR_OS	Extraction Grid_Orthosource_voltage (PSDC_GR_I)	measured	std		2 s	1 min	?+-5V	3	28		
112	NRNAR13A	ROSINA_RTOF_SCI_PSDC_BP_OS	Backplane_Orthosource_voltage (PSDC_BP_I)	measured	std		2 s	1 min	?+-5V	3	28		
114	NRNAR13B	ROSINA_RTOF_SCI_PSDC_GR_SS	Extraction Grid_Storage_source_voltage (PSDC_GR_G)	measured	std		2 s	1 min	?+-5V	3	28		
116	NRNAR13C	ROSINA_RTOF_SCI_PSDC_BP_SS	Backplane_Storage_source_voltage (PSDC_BP_G)	measured	std		2 s	1 min	?+-5V	3	28		
118	NRNAR13D	ROSINA_RTOF_SCI_HV1_SL_SS	high voltage Storage Source lense	measured	std		2 s	1 min	?+-200V		28		

RSDB	HK-Mnemonic old	PDS keyword	Description	HK Type	Std./Ext. Pack.	Monitoring if	Sampling frequency	Transmission frequency S/C	Range	Criticality	Action, if outside range	Used for regulation	Remarks
120	NRNAR13E	ROSINA_RTOF_SCI_HV1_A2_SS	Accerleration_2_Storage source_voltage (high voltage1_A2_G)	measured	std		2 s	1 min	?+-200V	3	28		
122	NRNAR13F	ROSINA_RTOF_SCI_HV1_A1_SS	Acceleration_1_Storage source_voltage (high voltage1_A1_G)	measured	std		2 s	1 min	?+-100V	3	28		
124	NRNAR140	ROSINA_RTOF_SCI_HV1_SL_OS	high voltage on ortho source lense	measured	std		2 s	1 min	?+-200V		28		
126	NRNAR141	ROSINA_RTOF_SCI_HV1_A2_OS	Acceleration_2_Ortho source_voltage (high voltage1_A2_I)	measured	std		2 s	1 min	?+-200V	3	28		
128	NRNAR142	ROSINA_RTOF_SCI_HV1_A1_OS	Accleration_1_Ortho source_voltage (high voltage1_A1_I)	measured	std		2 s	1 min	?+-100V	3	28		
130	NRNAR143	ROSINA_RTOF_SCI_HV2_P_SS	high voltage on storage source pulser	measured	std		2 s	1 min	?+-50V	3	28		
132	NRNAR144	ROSINA_RTOF_SCI_HV2_P_OS	high voltage on ortho source pulser	measured	std		2 s	1 min	?+-50V	3	28		
134	NRNAR145	ROSINA_RTOF_SCI_HV1_D	Drift_voltage (high voltage1_D)	measured	std		2 s	1 min	?+-100V	3	28		
136	NRNAR146	ROSINA_RTOF_SCI_HV2_HM3	high voltage Hard mirror3	measured	std		2 s	1 min	?+-50V	3	28		PSU_H M3
138	NRNAR147	ROSINA_RTOF_SCI_HV1_R1	high voltage reflectron 1	measured	std		2 s	1 min	?+-50V	3	28		PSU_R 1
140	NRNAR148	ROSINA_RTOF_SCI_HV1_R2	high voltage reflectron 2	measured	std		2 s	1 min	?+-200V	3	28		PSU_R 2
142	NRNAR149	ROSINA_RTOF_SCI_HV1_RL	high voltage on reflectron lense	measured	std		2 s	1 min	?+-200V	3	28		PSU_R L
144	NRNAR14A	ROSINA_RTOF_SCI_HV1_HM1	high voltage Hard mirror1	measured	std		2 s	1 min	?+-100V	3	28		PSU_H M1
146	NRNAR14B	ROSINA_RTOF_SCI_HV2_HM2	high voltage Hard mirror2	measured	std		2 s	1 min	?+-50V	3	28		PSU_H M2
148	NRNAR14C	ROSINA_RTOF_SCI_HV1_HML	high voltage Hard mirror lense	measured	std		2 s	1 min	?+-200V	3	28		PSU_H ML

RSDB	HK-Mnemonic old	PDS keyword	Description	HK Type	Std./Ext. Pack.	Monitoring if	Sampling frequency	Transmission frequency S/C	Range	Criticality	Action, if outside range	Used for regulation	Remarks
150	NRNAR14D	ROSINA_RTOF_SCI_HV2_M_OS	high voltage on ortho source detector	measured	std		2 s	1 min	?+-150V	2	18		M_I
152	NRNAR14E	ROSINA_RTOF_SCI_HV2_M_SS	high voltage on storage source detector	measured	std		2 s	1 min	?+-150V	2	18		M_G
154	NRNAR14F	ROSINA_RTOF_SCI_PSDC_E2_OS	Entrance2_Orthosource_voltage (PSDC_E2_I)	measured	std		2 s	1 min	?+-5V	3	28		
156	NRNAR150	ROSINA_RTOF_SCI_PSDC_TEMP_BP_OS	Temperature_Backplane_Orthosource (PSDC_Temp_BP_I)	measured	std		2 s	1 min		4			
158	NRNAR151	ROSINA_RTOF_SCI_PSDC_TEMP_BP_SS	Temperature_Backplane_StorageSource (PSDC_Temp_BP_G)	measured	std		2 s	1 min		4			
160	NRNAR152	ROSINA_RTOF_SCI_PSU_TEMP_MCP_OS	Temperature_Multi channel plates_Orthosource (PSU_Temp_MCP_I)	measured	std		2 s	1 min	?<50 °C	3	30		
162	NRNAR153	ROSINA_RTOF_SCI_SPARE2_FLAG	Temperature_Multi channel plates_StorageSource (PSU_Temp_MCP_G)	measured	std		2 s	1 min		4			
164	NRNAR154	ROSINA_RTOF_SCI_PSU_TEMP_HV1	Temperature of high voltage board 1	measured	std		2 s	1 min	?<50 °C	3	19		
166	NRNAR155	ROSINA_RTOF_SCI_PSU_TEMP_LVPS	Temperature of low	measured	std		2 s	1 min	?<50 °C	3	19		
168	NRNAR156				std		2 s	1 min					Not used -- ETS LIGHT version
					std		2 s	1 min					
					std		2 s	1 min					
					std		2 s	1 min					
					std		2 s	1 min					
					std		2 s	1 min					

RSDB	HK-Mnemonic old	PDS keyword	Description	HK Type	Std./Ex t. Pack.	Monitoring if	Sampli ng freque ncy	Transmi ssion frequen cy S/C	Range	Criti- cality	Action, if outside range	Use d for regula tion	Remar ks
					std		2 s	1 min					
					std		2 s	1 min					
169					std		2 s	1 min					
170	NRNAR157		ETS Status 1		std		2 s	1 min					
		ROSINA_RTOF_SCI_ETSL_OSP_STAT_F	ETS Ortho Pulser Status	flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_ETSL_TRIG_F	ETS Storage Pulser Status	flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_ETSL_SYNC_STAT_F	ETS Synchronization Status	flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_ETSL_CAL_TRIG_F	ETS Trigger Status	flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_ETSL_DAT_READ_F	ETS Data Readout Status	flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_ETSL_ACQ_STAT_F	ETS Acquisition Status	flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_ETSL_DTS_CANC_F	ETS Delayed time sampling Status Cancel	flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_ETSL_DTS_STAT_F	ETS Delayed time sampling Status	flag	std		2 s	1 min		4			
171			ETS Status 2		std		2 s	1 min		4			
		ROSINA_RTOF_SCI_ETSL_INPUT_F	ETS Input Status	flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_ETSL_CAL_POW_F	ETS Cal. Power Status	flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_ETSL_ADC_HIRM_F	ETS ADC High resolution mode Status	flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_ETSL_RAM_THR_F	ETS RAM Threshold	Value	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_ETSL_FIFO_THR_F	ETS FIFO Threshold	Value	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_ETSL_LU_ENA_F	ETS Latchup Enabled	flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_ETSL_LU_DETECT_F	ETS Latchup Detected	flag	std		2 s	1 min		3	16		
172	NRNAR158		ETS Status 3		std		2 s	1 min					

RSDB	HK-Mnemonic old	PDS keyword	Description	HK Type	Std./Ext. Pack.	Monitoring if	Sampling frequency	Transmission frequency S/C	Range	Criticality	Action, if outside range	Used for regulation	Remarks
		ROSINA_RTOF_SCI_ETSL_ADC_POW_F	ETS ADC Power Status	flag	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_ETSL_ADC_THR_F	ETS ADC Threshold	Value	std		2 s	1 min		4			
		ROSINA_RTOF_SCI_ETSL_ML_MODE_F	ETS mass line mode Mode	Value	std		2 s	1 min		4			
			Spare		std		2 s	1 min					
173		ROSINA_RTOF_SCI_ETSL_THR_LEVEL_F	ETS Threshold Level	Value	std		2 s	1 min		4			
174	NRNAR159	ROSINA_RTOF_SCI_ETSL_EX_DEL	ETS Extraction Delay	Value	std		2 s	1 min		4			
176	NRNAR15A	ROSINA_RTOF_SCI_ETSL_TOF	ETS Time of flight	Value	std		2 s	1 min		4			
178	NRNAR15B	ROSINA_RTOF_SCI_ETSL_CAL_DEL	ETS Cal. Start Delay	Value	std		2 s	1 min		4			
180	NRNAR15C	ROSINA_RTOF_SCI_ETSL_CAL_PH	ETS Cal. Pulse Height	Value	std		2 s	1 min		4			
182	NRNAR15D	ROSINA_RTOF_SCI_ETSL_CAL_PW	ETS Cal. Pulse Width	Value	std		2 s	1 min		4			
184	NRNAR15E		Spare		std		2 s	1 min					
3.5	Extended RTOF Packet block, Length 56 words												
Pos	RSDB		Name		ext								
0	NRNAR160		RTOF Ext. HK Header		ext		2 s	5 min					
1			Spare		ext		2 s	5 min					

RSDB	HK-Mnemonic old	PDS keyword	Description	HK Type	Std./Ext. Pack.	Monitoring if	Sampling frequency	Transmission frequency S/C	Range	Criticality	Action, if outside range	Used for regulation	Remarks
2	NRNAR161	ROSINA_RTOF_SCI_MC_FEC_PVCC	Filament emission controller_Plus VCC_voltage (Filament emission controller_PVCC_V)	measured	ext		2 s	5 min	?	3	21		FEC Supply out of range
4	NRNAR162	ROSINA_RTOF_SCI_MC_FEC_MVCC	Filament emission controller_Minus VCC_voltage (Filament emission controller_MVCC_V)	measured	ext		2 s	5 min	?	3	21		FEC Supply out of range
6	NRNAR163	ROSINA_RTOF_SCI_MC_FEC_PVDD	Filament emission controller_Plus VDD_voltage (Filament emission controller_PVDD_V)	measured	ext		2 s	5 min	?	3	21		FEC Supply out of range
8	NRNAR164	ROSINA_RTOF_SCI_MC_FEC_MVDD	Filament emission controller_Minus VDD_voltage(Filament emission controller_MVDD_V)	measured	ext		2 s	5 min	?	3	21		FEC Supply out of range
10	NRNAR165	ROSINA_RTOF_SCI_MC_GCU_T_TANK1	Temperature on gas calibration unit tank 1	measured	ext	GCU Power On	2 s	5 min	> 50 °C	3	20		
12	NRNAR166	ROSINA_RTOF_SCI_MC_GCU_T_TANK2	Temperature on gas calibration unit tank 2	measured	ext	GCU Power On	2 s	5 min	> 50 °C	3	20		
14	NRNAR167	ROSINA_RTOF_SCI_MC_GCU_PR_IN1	Gas calibration unit pressure 1 on tank side	measured	ext		2 s	5 min		4			
16	NRNAR168	ROSINA_RTOF_SCI_MC_GCU_PR_IN2	Gas calibration unit pressure 2 on tank side	measured	ext		2 s	5 min		4			
18	NRNAR169	ROSINA_RTOF_SCI_MC_GEX_PVCC	Gas Extraction Pulser_+5V (Main controller_GEX_PVCC)	measured	ext	Pulser Power On	2 s	5 min	?	3	22		Pulser Supply out of range

RSDB	HK-Mnemonic old	PDS keyword	Description	HK Type	Std./Ext. Pack.	Monitoring if	Sampling frequency	Transmission frequency S/C	Range	Criticality	Action, if outside range	Used for regulation	Remarks
20	NRNAR16A	ROSINA_RTOF_SCI_MC_GEX_VD	Gas Extraction Pulser_28V (Main controller_GEX_VD)	measured		VD ON							
					ext		2 s	5 min	?	3	22		Pulser Supply out of range
22	NRNAR16B	ROSINA_RTOF_SCI_MC_IEX_PVCC	Ion Extraction Pulser_+5V (Main controller_IEX_PVCC)	measured									
					ext		2 s	5 min	?	3	22		Pulser Supply out of range
24	NRNAR16C	ROSINA_RTOF_SCI_MC_IEX_VD	Ion Extraction Pulser_28V (Main controller_IEX_VD)	measured									
					ext		2 s	5 min	?	3	22		Pulser Supply out of range
26	NRNAR16D	ROSINA_RTOF_SCI_MC_HM_PVCA	Hard Mirror_+5V analog (Main controller_Hard mirror_PVCA)	measured									
					ext		2 s	5 min	?	3	22		Pulser Supply out of range
28	NRNAR16E	ROSINA_RTOF_SCI_MC_HM_VD	Hard Mirror_28V (Main controller_Hard mirror_VD)	measured									
					ext		2 s	5 min	?	3	22		Pulser Supply out of range
30	NRNAR16F	ROSINA_RTOF_SCI_MC_ETSL_PVCC	= ETSLIGHT PVCA		ext		2 s	5 min	?	3	23		
32	NRNAR170	ROSINA_RTOF_SCI_MC_ETSL_MVCA	= ETSLIGHT MVCA		ext		2 s	5 min	?	3	23		
34	NRNAR171	ROSINA_RTOF_SCI_MC_ETSL_PVDD	= ETSLIGHT PVDD		ext		2 s	5 min	?	3	23		
36	NRNAR172	ROSINA_RTOF_SCI_MC_ETSL_MVDD	= ETSLIGHT MVDD		ext		2 s	5 min	?	3	23		
38	NRNAR173	ROSINA_RTOF_SCI_MC_MOT_PVCC	= ETSLIGHT PVCC		ext		2 s	5 min	?	3	23		
40	NRNAR174	ROSINA_RTOF_SCI_MC_OMC_SW_OPEN	Motor_Switch_open position (Main controller_OMain controller_SW_OPEN)	measured		Motor Power On							
					ext		2 s	5 min	?	2	13		

RSDB	HK-Mnemonic old	PDS keyword	Description	HK Type	Std./Ext. Pack.	Monitoring if	Sampling frequency	Transmission frequency S/C	Range	Criticality	Action, if outside range	Used for regulation	Remarks
42	NRNAR175	ROSINA_RTOF_SCI_MC_OMC_SW_CLOSED	Motor_Switch_close position (Main controller_OMain controller_SW_CLOSED)	measured		Motor Power On							
					ext		2 s	5 min	?	2	13		
44	NRNAR176	ROSINA_RTOF_SCI_MC_HEAT_ION_V	Heater_Orthosource_24V (Main controller_HEAT_Ortho_VG)	measured		FEC Heater Power On							
					ext		2 s	5 min	?	3	24		FEC_HEAT_VG Heater Supply out of range
46	NRNAR177	ROSINA_RTOF_SCI_MC_HEAT_GAS_V	Heater_Storage_V (Main controller_HEAT_Storage_VG)	measured									
					ext		2 s	5 min	?	3	24		FEC_HEAT_VG Heater Supply out of range
48	NRNAR178	ROSINA_RTOF_SCI_MC_ETS_33V	Main controller_ETS_33V	measured									
					ext		2 s	5 min	?	3	25		ETS Supply out of range
50	NRNAR179	ROSINA_RTOF_SCI_MC_ETS_PVCA	Equivalent Time Sampling_Plus VCA_voltage (Main controller_ETS_PVCA)	measured		ETS is powered							
					ext		2 s	5 min	?	3	25		ETS Supply out of range

RSDB	HK-Mnemonic old	PDS keyword	Description	HK Type	Std./Ext. Pack.	Monitoring if	Sampling frequency	Transmission frequency S/C	Range	Criticality	Action, if outside range	Used for regulation	Remarks
52	NRNAR17A	ROSINA_RTOF_SCI_MC_ETS_MVCA	Equivalent Time Sampling_Minus VCA_voltage (Main controller_ETS_MVCA)	measured		ETS is powered							ETS Supply out of range
					ext		2 s	5 min	?	3	25		
54	NRNAR17B	ROSINA_RTOF_SCI_MC_ETS_VE	Equivalent Time Sampling_8V (Main controller_ETS_VE)	measured		NEVER !							Not used anymore !!!!
					ext		2 s	5 min					
56	NRNAR17C	ROSINA_RTOF_SCI_MC_ETS_PVDD	Equivalent Time Sampling_Plus VDD_voltage (Main controller_ETS_PVDD)	measured		ETS is powered							ETS Supply out of range
					ext		2 s	5 min	?	3	25		
58	NRNAR17D	ROSINA_RTOF_SCI_MC_ETS_MVDD	Equivalent Time Sampling_Minus VDD_voltage (Main controller_ETS_MVDD)	measured		ETS is powered							ETS Supply out of range
					ext		2 s	5 min	?	3	25		
60	NRNAR17E	ROSINA_RTOF_SCI_MC_ETS_VSH	Equivalent Time Sampling_operation voltage for Analog Digital Converter_~58V (Main controller_ETS_VSH)	measured		ETS ADC section is powered							ETS Supply out of range
					ext		2 s	5 min	?	3	25		
62	NRNAR17F	ROSINA_RTOF_SCI_MC_ETSL_PVCA	Main controller_Spare --> ETSLIGHT_PVCA	measured		ETS LIGHT is powered							ETSLIGHT PVCA ETS LIGHT supply out of range
					ext		2 s	5 min	?	3	26		
64	NRNAR180	?	Main controller_Spare		ext		2 s	5 min					

RSDB	HK-Mnemonic old	PDS keyword	Description	HK Type	Std./Ext. Pack.	Monitoring if	Sampling frequency	Transmission frequency S/C	Range	Criticality	Action, if outside range	Used for regulation	Remarks
66	NRNAR181	ROSINA_RTOF_SCI_PSU_P5V_V	Power supply unit +5_Volt value	measured	ext		2 s	5 min	?	1			
68	NRNAR182	ROSINA_RTOF_SCI_PSU_M5V_V	Power supply unit -5_Volt value	measured	ext		2 s	5 min	?	1			
70	NRNAR183	ROSINA_RTOF_SCI_PSU_P15V_V	Power supply unit +15_Volt value	measured	ext		2 s	5 min	?	1			
72	NRNAR184	ROSINA_RTOF_SCI_PSU_M15V_V	Power supply unit -15_Volt value	measured	ext		2 s	5 min	?	1			
74	NRNAR185	ROSINA_RTOF_SCI_PSU_24V_V	Power supply unit +24_Volt value	measured	ext		2 s	5 min	?	1			
76	NRNAR186	ROSINA_RTOF_SCI_PSU_8V_V	Power supply unit +8_Volt value	measured	ext		2 s	5 min	?	4			Not used anymore by ETS
78	NRNAR187	ROSINA_RTOF_SCI_PSU_5VA_V	Power supply unit +5_Add_Volt value	measured	ext		2 s	5 min	?	1			
80	NRNAR188	ROSINA_RTOF_SCI_PSU_40V_V	Power supply unit +40_Volt value	measured	ext		2 s	5 min	?	1			
82	NRNAR189	ROSINA_RTOF_SCI_PSU_70V_V	Power supply unit +70_Volt value	measured	ext		2 s	5 min	?	1			
84	NRNAR18A	ROSINA_RTOF_SCI_PSU_P5V_I	Power supply unit +5_Cur	measured	ext		2 s	5 min		4			
86	NRNAR18B	ROSINA_RTOF_SCI_PSU_M5V_I	Power supply unit -5_Cur	measured	ext		2 s	5 min		4			
88	NRNAR18C	ROSINA_RTOF_SCI_PSU_P15V_I	Power supply unit +15_Cur	measured	ext		2 s	5 min	>500 mA	1			
90	NRNAR18D	ROSINA_RTOF_SCI_PSU_M15V_I	Power supply unit -15_Cur	measured	ext		2 s	5 min	>300 mA	1			
92	NRNAR18E	ROSINA_RTOF_SCI_PSU_24V_I	Power supply unit +24_Cur	measured	ext		2 s	5 min		4			checked for sudden increase

