

Telemetry protocol

KONTRONIK telemetry protocol

Mode:	8-bit transmission
Baud rate:	115200
Start bit:	1
Stop bit:	1
Parity:	even
Interval:	10 ms
Transmission:	Two-Wire
Order:	Little-Endian

Telemetry protocol

Live Data

Name	Comment	Min value	Max value	Resolution	Unit	Bit size	Sign	KOSMIK	KOLIBRI	JIVEPro	KONTROL-X
Header 1	'K'	-	-	-	ID	8	unsigned	X	X	X	
Header 2	'O'	-	-	-	ID	8	unsigned	X	X	X	
Header 3	'D' - Data	-	-	-	ID	8	unsigned	X	X	X	
Header 4	'L' - Livedata	-	-	-	ID	8	unsigned	X	X	X	
Revolution speed	Electrical revolution speed	0	300000	1	RPM	32	unsigned	X	X	X	
Battery voltage	Voltage of the DC side	0	10.000	10	mV	16	unsigned	X	X	X	
Battery current	Current of the DC side	-10000	10.000	0,1	A	16	signed	X	X	X	
Motor current	Medium value	-10000	10.000	0,1	A	16	signed	X	X	X	
Peak current	Maximum peak motor (KOSMIK, KOLIBRI, KONTROL-X) or battery power (JIVEPro)	-10000	10.000	0,1	A	16	signed	X	X	X	
Capacity	Calculated consumption	0	65535	1	mAh	16	unsigned	X	X	X	
BEC current	Current of the Battery Eliminator Circuit	0	60000	1	mA	16	unsigned	X	X	-	
BEC voltage	Voltage of the Battery Eliminator Circuit	5000	10000	1	mV	16	unsigned	X	X	X	
PWM_in	External encoder signal	500	2500	1	µs	16	unsigned	X	X	X	
Gas_in	Gas opening (-100% - 0 = brake, 0 - 100% = engine running)	-100	100	1	%	8	signed	X	X	X	
PWM opening	Power stage opening (0 - 100% = motor running)	0	100	1	%	8	unsigned	X	X	X	
Power amp temperature	Temperature of the power amp	-128	127	1	°C	8	signed	X	X	X	
BEC temperature	Temperature of the Battery Eliminator Circuit	-128	127	1	°C	8	signed	X	X	X	
Operation error	Temperature of the Battery Eliminator Circuit	0									
	Unterspannung 0.Bit // Undervoltage on the battery										
	UeberstromE 1.Bit // Overvoltage on the battery										
	UeberstromW 2.Bit // Overcurrent integral error has responded										
	Uebertemp_EndstufeW 3.Bit // Overcurrent integral-Warning has addressed										
	Uebertemp_EndstufeE 4.Bit // Overtemperature warning of the power amplifier										
	Unterspannung_BEC 5.Bit // Overtemperature error of the power amplifier										
	Ueberstrom_BEC 6.Bit // Undervoltage at the BEC										
	Uebertemp_BEC 7.Bit // overvoltage at the BEC										
	Runterfahren 8.Bit // overcurrent at the BEC										
	Kapazitaetsgrenze 9.Bit // Overtemperature at the BEC										
	BetriebsFehler 10.Bit // Shutdown by driving on the ground (with speed control)										
	BetriebsWarning 11.Bit // preset discharge capacity has been reached										
	SelbsttestFehler 12.Bit // An error has been found in the operation										
	EEPROMFehler 13.Bit // a warning was found in the company										
	Watchdog 14.Bit // an error was found during the self-test										
	ProgAllow 15.Bit // an EEPROM error was found										
	TelmeW_Umin 16.Bit // Watchdog error had occurred										
	TelmeW_maxStrom 17.Bit // Programming is still allowed										
	TelmeW_maxTempESC 18.Bit // preset undervoltage on the battery has been reached										
	TelmeW_maxTempBEC 19.Bit // preset overcurrent limit has been reached										
	TelmeW_maxStromBEC 20.Bit // Preset overtemperature of the output stage reached										
	TelmeW_maxDischarge 21.Bit // preset overtemperature at the BEC has been reached										
	22.Bit // preset overcurrent limit at the BEC has been reached										
	23.Bit // preset discharge capacity has been reached		16777215	1	Bit	32	unsigned	X	X	X	
Operating condition	"WaitForSignal", // 1										
	"WaitForMotorOff", // 2										
	"WaitForMotorOff2", // 3										
	"", // 4										
	"", // 5										
	"", // 6										
	"Selftest", // 7										
	"", // 8										
	"Error_Selftest", // 9										
	"CutOffDuringOperation", // 10										
	"AcousticSignal", // 11										
	"MotorOff", // 12										
	"StandBy", // 13										
	"Brake", // 14										
	"BrakeTargetBackward", // 15										
	"BrakeTargetForward", // 16										
	"Programming", // 17										
	"Sync_Forward", // 18										
	"Sync_Backward", // 19										
	"Sync_StandBy", // 20										
	"Forward", // 21										
	"Backward", // 22										
	"SpoolUpFromStill", // 23										
	"SpoolUpFromTurn", // 24										
	"SpoolUpQuick", // 25										
	"RPMcontrol", // 26										
Timing	Pre commutation	0	30	1	°	8	unsigned	X	X	X	
CRC32	Cyclic redundancy check	0	4294967295	1	-	32	unsigned	X	X	X	

Telemetry protocol

Maximum value + info data (Every 100th package)

Name	Comment	Min value	Max value	Resolution	Unit	Bit size	Sign	KOSMIK	KOLIBRI	JIVEPro	KONTROL-X
Header 1	'K'	-	-	-	ID	8	unsigned	X	X	X	
Header 2	'O'	-	-	-	ID	8	unsigned	X	X	X	
Header 3	'D' - Data	-	-	-	ID	8	unsigned	X		X	
Header 4	'I' - Info	-	-	-	ID	8	unsigned	X	X	X	
Device and variant	Device (High 6 Bit) 0 = Reserved, 1 = KOSMIK, 2 = KOLIBRI, 3 = JIVEPro, 4 = KONTROL-X Variant (Low 10 Bit)	0	65535	1	ID	16	unsigned	X	X	X	
Firmware version	Main number (high 8 bit) Sub number (low 8 Bit)	0	65535	1	ID	16	unsigned	X	X	X	
Self-test error	U_Motor_low // 0.Bit motor phase lowside does not switch U_Motor_high // 1.Bit engine phase highside does not switch Ruhepegel // 2.Bit short circuit to GND or open circuit U_Offset // 3.Bit BackEMF offset I_Offset // 4.Bit Zero point of the current measurement S_Unterspannung // 5.Bit undervoltage S_Überspannung // 6.Bit overvoltage S_BEC_Unterspannung // 7.Bit BEC undervoltage S_BEC_Überspannung // 8.Bit BEC overvoltage VerpolFuse // 9.Bit reverse polarity protection OvervoltageFuse // 10.Bit overvoltage protection S_UpertempEndstufe // 11.Bit over temperature output stage S_ÜbertempBEC // 12.Bit over temperature BEC Motorkontakt // 13.Bit contact with all 3 motor phases is missing EE_Iser // 14.Bit EEPROM empty EE_Kneuppelposition // 15.Bit embroidery positions of the EEPROM configuration EE_Checksumme // 16.Bit checksum of the EEPROM EE_Size // 17.Bit size of the EEPROM EE_Version // 18.Bit version of the EEPROM	0									
Cell number	Detected battery cells	0	255	1	Number	8	unsigned	X	X	X	
Max. rpm	Maximum recorded rpm (electric)	0	300000	1	RPM	32	unsigned	X	X	X	
Min. Battery voltage	Minimum logged voltage on the DC side	0	10.000	10	mV	16	unsigned	X	X	X	
Max. Battery voltage	Maximum logged voltage on the DC side	0	10.000	10	mV	16	unsigned	X	X	X	
Max. Battery current	Maximum logged current on the DC side	-10000	10.000	0,1	A	16	signed	X	X	X	
Max. Motor current	Maximum logged motor current averaged	-10000	10.000	0,1	A	16	signed	X	X	X	
Max. Peak motor current	Maximum logged motor current	-10000	10.000	0,1	A	16	signed	X	X	X	
Max. BEC current	Maximum logged current at the Battery Eliminator Circuit	0	60000	1	mA	16	unsigned	X	X	-	
Min. BEC voltage	Minimal logged voltage at the Battery Eliminator Circuit	5000	10000	1	mV	16	unsigned	X	X	X	
Max. Gas_in	Maximum recorded gas opening	-100	100	1	%	8	signed	X	X	X	
Max. Regulator opening	Maximum recorded power amp opening	0	100	1	%	8	unsigned	X	X	X	
Min. Power amp temp.	Minimum logged temperature on the power unit	-128	127	1	°C	8	signed	X	X	X	
Max. Output stages temp.	Maximum logged temperature on the power unit	-128	127	1	°C	8	signed	X	X	X	
Min. BEC temperature	Minimum logged temperature at the Battery Eliminator Circuit	-128	127	1	°C	8	signed	X	X	X	
Max. BEC temperature	Maximum logged temperature at the Battery Eliminator Circuit	-128	127	1	°C	8	signed	X	X	X	
CRC32	Cyclic redundancy check	0	4294967295	1	-	32	unsigned	X	X	X	