System State

Bit	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
0	Major version (uint8_t)								Minor version (uint8_t)								Reserved															
32	Robot milliseconds (uint16_t)																Robot seconds (uint8_t)								Robot minutes (uint8_t)							
64	Robot hours (uint8_t)								Reserved								Robot days (uint16_t)															
96	Robot current [A] (float)																															
128	Robot mode (uint8_t)								Robot state (uint8_t)								Program state (uint8_t)								Reserved							
160	EB	PB	TB	BB	Reserved				Reserved																							
192	Master Speed (float)																															
224	Safety mode (uint8_t)								Reserved																ES	PS	SS	Reserved				

Joints Monitor

Bit	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
0	Joint 1 position [rad] (float)																															
32	Joint 2 position [rad] (float)																															
64	Joint 3 position [rad] (float)																															
96	Joint 4 position [rad] (float)																															
128	Joint 5 position [rad] (float)																															
160	Joint 6 position [rad] (float)																															
192	Joint 7 position [rad] (float)																															
224	Joint 1 velocity [rad/s] (float)																															
256	Joint 2 velocity [rad/s] (float)																															
288	Joint 3 velocity [rad/s] (float)																															
320	Joint 4 velocity [rad/s] (float)																															
352	Joint 5 velocity [rad/s] (float)																															
384	Joint 6 velocity [rad/s] (float)																															
416	Joint 7 velocity [rad/s] (float)																															
448	Joint 1 current [A] (float)																															
480	Joint 2 current [A] (float)																															
512	Joint 3 current [A] (float)																															
544	Joint 4 current [A] (float)																															
576	Joint 5 current [A] (float)																															
608	Joint 6 current [A] (float)																															
640	Joint 7 current [A] (float)																															
672	Joint 1 temperature [°C] (float)																															
704	Joint 2 temperature [°C] (float)																															
736	Joint 3 temperature [°C] (float)																															
768	Joint 4 temperature [°C] (float)																															
800	Joint 5 temperature [°C] (float)																															
832	Joint 6 temperature [°C] (float)																															
864	Joint 7 temperature [°C] (float)																															

TCP Monitor

Bit	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
0	TCP position X [m] (float)																															
32	TCP position Y [m] (float)																															
64	TCP position Z [m] (float)																															
96	TCP position OR [rad] (float)																															
128	TCP position OP [rad] (float)																															
160	TCP position OY [rad] (float)																															
192	TCP velocity X [m/s] (float)																															
224	TCP velocity Y [m/s] (float)																															
256	TCP velocity Z [m/s] (float)																															
288	TCP velocity OR [rad/s] (float)																															
320	TCP velocity OP [rad/s] (float)																															
352	TCP velocity OY [rad/s] (float)																															
384	TCP force X [N] (float)																															
416	TCP force Y [N] (float)																															
448	TCP force Z [N] (float)																															
480	TCP torque X [N.m] (float)																															
512	TCP torque Y [N.m] (float)																															
544	TCP torque Z [N.m] (float)																															
576	TCP force scalar [N] (float)																															

IO Monitor

Bit	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
0	IOB digital inputs (bits)																IOB safe inputs (bits)								Reserved							
32	IOB current input 1 [A] (float)																															
64	IOB current input 2 [A] (float)																															
96	IOB voltage input 1 [V] (float)																															

Bit	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
128	IOB voltage input 2 [V] (float)																															
160	IOB quadrature 1 pulse per rev (int32_t)																															
192	IOB quadrature 2 pulse per rev (int32_t)																															
224	IOB quadrature idx availability (bits)								Reserved								IOB quadrature direction (bits)								Reserved							
256	IOB quadrature 1 pulse count (int32_t)																															
288	IOB quadrature 2 pulse count (int32_t)																															
320	IOB quadrature 1 frequency (int32_t)																															
352	IOB quadrature 2 frequency (int32_t)																															
384	IOB quadrature 1 abs pulse count (int32_t)																															
416	IOB quadrature 2 abs pulse count (int32_t)																															
448	IOB quadrature 1 pulse per sec (int32_t)																															
480	IOB quadrature 2 pulse per sec (int32_t)																															
512	IOB digital outputs (bits)								IOB relay outputs (bits)								Reserved															
544	IOB current output 1 [A] (float)																															
576	IOB current output 2 [A] (float)																															
608	IOB voltage output 1 [V] (float)																															
640	IOB voltage output 2 [V] (float)																															
672	TIO current input [A] (float)																															
704	TIO voltage input 1 [V] (float)																															
736	TIO voltage input 2 [V] (float)																															
768	TIO voltage input 3 [V] (float)																															
800	TIO voltage input 4 [V] (float)																															
832	TIO digital outputs range (bits)								TIO digital outputs (bits)								TIO power supply range (bits)								TIO power supply (bits)							
864	TIO analog outputs type (bits)								Reserved																							
896	TIO analog output 1 [A or V] (float)																															
928	TIO analog output 2 [A or V] (float)																															

64 Bit Input

Bit	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
0	0 to 31 bit input register (bits)																															
32	32 to 63 bit input register (bits)																															

24 Int Input

Bit	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
0	Int 0 (int32_t)																															
32	Int 1 (int32_t)																															
64	Int 2 (int32_t)																															
96	Int 3 (int32_t)																															
128	Int 4 (int32_t)																															
160	Int 5 (int32_t)																															
192	Int 6 (int32_t)																															
224	Int 7 (int32_t)																															
256	Int 8 (int32_t)																															
288	Int 9 (int32_t)																															
320	Int 10 (int32_t)																															
352	Int 11 (int32_t)																															
384	Int 12 (int32_t)																															
416	Int 13 (int32_t)																															
448	Int 14 (int32_t)																															
480	Int 15 (int32_t)																															
512	Int 16 (int32_t)																															
544	Int 17 (int32_t)																															
576	Int 18 (int32_t)																															
608	Int 19 (int32_t)																															
640	Int 20 (int32_t)																															
672	Int 21 (int32_t)																															
704	Int 22 (int32_t)																															
736	Int 23 (int32_t)																															

24 Real Input

Bit	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
0	Real 0 (int32_t)																															
32	Real 1 (int32_t)																															
64	Real 2 (int32_t)																															
96	Real 3 (int32_t)																															
128	Real 4 (int32_t)																															
160	Real 5 (int32_t)																															
192	Real 6 (int32_t)																															
224	Real 7 (int32_t)																															
256	Real 8 (int32_t)																															
288	Real 9 (int32_t)																															

Bit	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
320	Real 10 (int32_t)																															
352	Real 11 (int32_t)																															
384	Real 12 (int32_t)																															
416	Real 13 (int32_t)																															
448	Real 14 (int32_t)																															
480	Real 15 (int32_t)																															
512	Real 16 (int32_t)																															
544	Real 17 (int32_t)																															
576	Real 18 (int32_t)																															
608	Real 19 (int32_t)																															
640	Real 20 (int32_t)																															
672	Real 21 (int32_t)																															
704	Real 22 (int32_t)																															
736	Real 23 (int32_t)																															

System Control

Bit	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
0	SSM	Reserved																														
32	Master Speed																															

IO Control

Bit	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
0	IOB digital outputs mask (bits)								IOB relay outputs mask (bits)								IOB digital outputs (bits)								IOB relay outputs (bits)							
32	IOB current outputs mask (bits)								IOB voltage outputs mask (bits)								Reserved															
64	IOB current output 1 [A] (float)																															
96	IOB current output 2 [A] (float)																															
128	IOB voltage output 1 [V] (float)																															
160	IOB voltage output 2 [V] (float)																															
192	TIO digital outputs mask (bits)								TIO power supply mask (bits)								TIO digital outputs range (bits)								TIO power supply range (bits)							
224	TIO digital outputs (bits)								TIO power supply (bits)								Reserved															
256	TIO analog outputs mask (bits)								TIO analog outputs type (bits)								Reserved															
288	TIO analog output 1 [A or V] (float)																															
320	TIO analog output 2 [A or V] (float)																															

64 Bit Output

Bit	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
0	0 to 31 bit output register (bits)																															
32	32 to 63 bit output register (bits)																															

24 Int Output

Bit	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
0	Int 0 (int32_t)																															
32	Int 1 (int32_t)																															
64	Int 2 (int32_t)																															
96	Int 3 (int32_t)																															
128	Int 4 (int32_t)																															
160	Int 5 (int32_t)																															
192	Int 6 (int32_t)																															
224	Int 7 (int32_t)																															
256	Int 8 (int32_t)																															
288	Int 9 (int32_t)																															
320	Int 10 (int32_t)																															
352	Int 11 (int32_t)																															
384	Int 12 (int32_t)																															
416	Int 13 (int32_t)																															
448	Int 14 (int32_t)																															
480	Int 15 (int32_t)																															
512	Int 16 (int32_t)																															
544	Int 17 (int32_t)																															
576	Int 18 (int32_t)																															
608	Int 19 (int32_t)																															
640	Int 20 (int32_t)																															
672	Int 21 (int32_t)																															
704	Int 22 (int32_t)																															
736	Int 23 (int32_t)																															

24 Real Output

Bit	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
0	Real 0 (int32_t)																															

Bit	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
32	Real 1 (int32_t)																															
64	Real 2 (int32_t)																															
96	Real 3 (int32_t)																															
128	Real 4 (int32_t)																															
160	Real 5 (int32_t)																															
192	Real 6 (int32_t)																															
224	Real 7 (int32_t)																															
256	Real 8 (int32_t)																															
288	Real 9 (int32_t)																															
320	Real 10 (int32_t)																															
352	Real 11 (int32_t)																															
384	Real 12 (int32_t)																															
416	Real 13 (int32_t)																															
448	Real 14 (int32_t)																															
480	Real 15 (int32_t)																															
512	Real 16 (int32_t)																															
544	Real 17 (int32_t)																															
576	Real 18 (int32_t)																															
608	Real 19 (int32_t)																															
640	Real 20 (int32_t)																															
672	Real 21 (int32_t)																															
704	Real 22 (int32_t)																															
736	Real 23 (int32_t)																															