

Modbus Mapping, RobotControl V14

Commonplace Robotics GmbH

Mapping Version

3

read only access
read/write access

Type explanation
rising edge action will be executed on rising edge. Note: Some coils are overlaid with a readable state value, you are not able to read the last written value there.
bool action will be enabled on writing 1 and disabled on writing 0
string 2 characters per register, end marked by 0 byte unless all bytes are used
int32 / uint32 1st register contains lower bytes, 2nd contains upper byte

Category	1 Bit coils					16 Bit input registers (read only)					16 Bit holding registers (read + write access)					Notes	
	Address	Count	Access	Action Type	Description	Address	Count	Type	Precision	Description	Address	Count	Type	Precision	Description		
I/O	First	Last				First	Last				First	Last					
	200	299	100	RO/RW	Gsig	207	210	4	Bitfield	Dis	200	206	7	Bitfield	Gsig		
	300	363	64	RO/RW	DOut						207	210	4	Bitfield	Dout		
364	427	64	RO	In													
Software Info																	
Statistics						0		1	uint16	Software ID					CPReq=902, TinyCtrl=980		
						1		1	uint16	Software version major					e.g. 12		
						2		1	uint16	Software version minor					e.g. 6		
						3		1	uint16	Modbus Mapping Version					See top left corner of this document		
						4	5	2	uint32	minutes	Uptime complete						
						6	7	2	uint32	minutes	Uptime last						
						8	9	2	uint32	minutes	Uptime enabled						
						10	11	2	uint32	minutes	Uptime motion						
						12		1	uint16	Program starts							
						13		1	uint16	0.1ms	Cycle time target						
Configuration Info						14		1	uint16	0.1ms	Cycle time max (last 50 cycles)						
						15		1	uint16	0.01Hz	Cycle frequency (average)						
						16		1	uint16	0.01%	Work load						
	10		1	RO	Has robot axis	20		1	uint16	Count of robot joints						0-6	
	11		1	RO	Has external axis	21		1	uint16	Count of external axes						0-3	
	12		1	RO	Has gripper axis	22		1	uint16	Count of gripper joints						0-3	
	13		1	RO	Has platform axis	23		1	uint16	Count of platform axes						0-4	
	14		1	RO	Has I/O module	24		1	uint16	Count of I/O modules						0-3	
	20		1	RO	Module - No error	25	30	6	Bitfield	Module error codes of robot axis						Error codes of each axis	
	21		1	RO	Module error - Temperature	31	33	3	Bitfield	Module error codes of external axis							
Error and State Info	22		1	RO	Module error - Estop / Low voltage	34	36	3	Bitfield	Module error codes of gripper axis							
	23		1	RO	Module error - Motor not enabled	37	40	4	Bitfield	Module error codes of platform axis							
	24		1	RO	Module error - Communication	41	43	3	Bitfield	Module error codes of I/O modules							
	25		1	RO	Module error - Position lag												
	26		1	RO	Module error - Encoder error	44	49	6	int16	0.1°C	Temperatures of robot joint electronics						
	27		1	RO	Module error - Overcurrent	50	52	3	int16	0.1°C	Temperatures of external axis electronics						
	28		1	RO	Module error - Driver error	53	55	3	int16	0.1°C	Temperatures of gripper joint electronics						
	29		1	RO	Module error - Bus dead	56	59	4	int16	0.1°C	Temperatures of platform axis electronics						
	30		1	RO	Module error - Module dead												
	31	36	6	RO	Module error - reserved for future use	60	65	6	int16	0.1°C	Temperatures of robot joint motors					only available for some robots	
Connection etc.						66	68	3	int16	0.1°C	Temperatures of external axis motors					only available for some robots	
	37		1	RO	Kinematics - No error	69	71	3	int16	0.1°C	Temperatures of gripper joints motors					only available for some robots	
	38		1	RO	Kinematics - Joint limit min	72	75	4	int16	0.1°C	Temperatures of platform axis motors					only available for some robots	
	39		1	RO	Kinematics - Joint limit max												
	40		1	RO	Kinematics - Center singularity	76	81	6	uint16	mA	Currents of robot joints						
	41		1	RO	Kinematics - Out of Reach	82	84	3	uint16	mA	Currents of external axis						
	42		1	RO	Kinematics - Wrist singularity	85	87	3	uint16	mA	Currents of gripper joints						
	43		1	RO	Kinematics - Virtual box reached	88	91	4	uint16	mA	Currents of platform axis						
	44		1	RO	Kinematics - Motion not allowed												
	45	49	5	RO	Kinematics - reserved for future use	92		1	uint16	0.01V	Voltage						
Referencing						93		1	uint16	mA	Current total					not implemented	
						94		1	uint16	0.1%	Battery charge						
						95		1	enum	Kinematics - Error code							
	50		1	RO/RW	rising edge read: Is Connected, edge toggles: Connect / Disconnect												
	51		1	RW	rising edge Shutdown computer (power off)												
	52		1	RW	rising edge Reset												
	53		1	RO/RW	rising edge read: Is Enabled, edge toggles: Enable / Disable												
	54		1	RO	rising edge Is operating okay												
						96		1	enum	Operation mode						Standard=0, serious fail=1, CAN bridge=2	
	Position + Motion	60		1	RO/RW	rising edge read: Is referenced, edge: reference all											
61		66	6	RO/RW	rising edge read: IsRefId, edge: reference robot joint												
67		69	3	RO/RW	rising edge read: IsRefId, edge: reference external joint												
70		72	3	RO/RW	rising edge read: IsRefId, edge: reference gripper joint												
73			1	RW	rising edge Set all joints to zero												
74			1	RW	rising edge Start referencing program, then reference all											Robot must be refd and enabled	
100			1	RW	rising edge Start MoveTo cart	130	135	6	int32	0.01mm	Current position cartesian	130	135	6	int32	0.01mm	Target position cartesian
101			1	RW	rising edge Start MoveTo cart relative base	136	141	6	int32	0.01°	Current orientation cartesian	136	141	6	int16	0.01°	Target orientation cartesian
102			1	RW	rising edge Start MoveTo cart relative tool	142	153	12	int32	0.01 units	Current position robot joints	142	153	12	int32	0.01 units	Target position robot joints
103			1	RW	rising edge Start MoveTo joint	154	159	6	int32	0.01 units	Current position external axis	154	159	6	int32	0.01 units	Target position external axis
Program	104		1	RW	rising edge Start MoveTo joint relative	160	165	6	int32	0.01 units	Current position gripper joints						
	105		1	RW	rising edge Start MoveTo platform pos												
	106		1	RW	rising edge Start MoveTo platform pos+ori												
	107		1	RW	rising edge Stop MoveTo motion	174	177	4	int32	0.01mm	Current position platform cartesian						not implemented
						178	179	2	int32	0.01°	Current orientation platform cartesian						not implemented
	110		1	RO	Zero Torque mode (teach by hand) available												
	111		1	RO/RW	bool Zero Torque mode (teach by hand) is enabled / enable												not implemented
	112		1	RO	Is Moving												not implemented
																	default 500 (50% or 50mm/s)
																	Target velocities external axes in velocity mode
Program selection						187		1	uint16	0.01%	Override						
						188		1	enum	Jog mode							Joint=0, CartBase=1, CartTool=2, Platform=3, Invalid=OffH
	120		1	RO	Is robot program loaded												
	121		1	RO	Is logic program loaded												
	122		1	RO/RW	rising edge read: Is program running, edge: start program	262		1	uint16	Loaded robot programs count							Program Run/State
	123		1	RO/RW	rising edge read: Is program paused, edge: pause program	263		1	int16	Currently executed robot program number							Recall Mode
	124		1	RO/RW	rising edge read: Is program not running (and not paused), edge: stop program	264		1	uint16	Number of the selected directory entry							NotRunning=0, Running=1, Paused=2
						265		1	int16	Count of commands in currently executed program							Simple=0, Repeat=1, Step=2, Fast=3 (not used)
						266		1	enum	Currently executed command number in program							
Teach programming																	
Program selection	130		1	RW	rising edge Next directory entry	331		1	uint16	Count of entries in current directory							
	131		1	RW	rising edge Previous directory entry	332		1	uint16	Number of the selected directory entry							0-77; if current dir is not the base dir entry 0 is "..."
	132		1	RO	Is directory entry a file (Does not validate content)	333	364	32	string	Name of the selected directory entry							Up to 64 ASCII characters
	133		1	RW	rising edge Load selected program / open selected directory	365	396	32	string	Name of the current directory							Up to 64 ASCII characters
	134		1	RW	rising edge Go to base directory (../Data/Programs)												
Teach programming	140		1	RW	rising edge Save program												
	141		1	RW	rising edge Remove last command (from main program)												

