

Commonplace Robotics GmbH
Mapping Version

read only access
read/write access

Category	1 Bit coils					Notes	16 Bit input registers (read only)					Notes	16 Bit holding registers (read + write access)					Notes				
	Address	First	Last	Count	Access		Action Type	Description	Address	First	Last		Count	Type	Precision	Description	Address		First	Last	Count	Type
I/O		200	299	100	RO/RW		Grip		200	206	7	Bitfield		Grip		200	206	7	Bitfield		Grip	
		300	363	64	RO/RW		DOut		207	210	4	Bitfield		Din		207	210	4	Bitfield		Dout	
		364	427	64	RO		Din															
Software Info									0	1	uint16		Software ID	CPHgr902, TinyCtrl-980								
									1	1	uint16		Software version major	e.s. 12								
									2	1	uint16		Software version minor	e.s. 6								
									3	2	uint16		Modbus Mapping Version	See top left corner of this document								
Statistics									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									
									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									
Configuration Info									20	1	uint16		Count of robot joints	0-6								
									21	1	uint16		Count of external axes	0-3								
									22	1	uint16		Count of gripper joints	0-3								
									23	1	uint16		Count of platform axes	0-4								
									24	1	uint16		Count of I/O modules	0-5								
Error and State Info									25	30	6	Bitfield	Module error codes of robot axis	Error codes of each axis								
									31	33	3	Bitfield	Module error codes of external axis									
									34	36	3	Bitfield	Module error codes of gripper axis									
									37	40	4	Bitfield	Module error codes of platform axis									
									41	43	3	Bitfield	Module error codes of I/O modules	Read error codes of further IO modules from 2126-2127								
									44	49	6	int16	0.1°C	Temperatures of robot joint electronics								
									50	52	3	int16	0.1°C	Temperatures of external axis electronics								
									53	55	3	int16	0.1°C	Temperatures of gripper joint electronics								
									56	59	4	int16	0.1°C	Temperatures of platform axis electronics								
									60	65	6	int16	0.1°C	Temperatures of robot joint motors	only available for some robots							
									66	68	3	int16	0.1°C	Temperatures of external axis motors	only available for some robots							
									69	71	3	int16	0.1°C	Temperatures of gripper joints motors	only available for some robots							
									72	75	4	int16	0.1°C	Temperatures of platform axis motors	only available for some robots							
									76	81	6	uint16	mA	Currents of robot joints								
									82	84	3	uint16	mA	Currents of external axis								
									85	87	3	uint16	mA	Currents of gripper joints								
									88	91	4	uint16	mA	Currents of platform axes								
									92	1	uint16	0.01V	Voltage									
									93	1	uint16	mA	Current total									
									94	1	uint16	0.1%	Battery charge	not implemented								
									95	1	enum		Kinematics - Error code									
Connection etc.									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	TinyCtrl: Enable implies reset true if opMode=standard								
									54	1	RO		Is operating okay									
									96	1	enum		Operation mode	Standard=0, serious fail=1, CAN bridge=2								
Referencing									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								
									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		RW	rising edge	Set all joints to zero									
									74		RW	rising edge	Start referencing program, then reference all	Robot must be refd and enabled								
Position + Motion									100	1	RW	rising edge	Start MoveTo cart	130 135 6 int32 0.01mm	Current position cartesian							
									101	1	RW	rising edge	Start MoveTo cart relative base	136 141 6 int32 0.01"	Current orientation cartesian							
									102	1	RW	rising edge	Start MoveTo cart relative tool	142 153 12 int32 0.01 units	Current position robot joints							
									103	1	RW	rising edge	Start MoveTo joint	154 159 6 int32 0.01 units	Current position external axis							
									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	not implemented	Current position platform cartesian	not implemented						
									106	1	RW	rising edge	Start MoveTo platform pos+ori	not implemented	Current orientation platform cartesian	not implemented						
									107	1	RW	rising edge	Stop MoveTo motion	174 177 4 int32 0.01mm	Target position cartesian	174 177 4 int32 0.01mm	Target position platform cartesian	not implemented				
														178 179 2 int32 0.01"	Target orientation cartesian	178 179 2 int32 0.01"	Target orientation platform cartesian	not implemented				
														180 1	int16	0.1% / 0.1mm/s	Velocity for MoveTo	180 1	int16	0.1% / 0.1mm/s	Velocity for MoveTo	
														181 186	6	int32	0.3um/s	Target velocities external axes in velocity mode	181 186	6	int32	0.3um/s
														187 1	uint16	0.02%	Override	187 1	uint16	0.02%	Override	
														188 1	enum		Joystick mode	188 1	enum		Joystick mode	
									110	1	RO		Zero Torque mode (teach by hand) is available									
									111	1	RO/RW	bool	Zero Torque mode (teach by hand) is enabled / enable	Requires reset after disable								
									112	1	RO		Is Moving	Program running, MoveTo or ioq								
Program									120	1	RO		Is robot program loaded									
									121	1	RO		Is logic program loaded									
Loading programs into the interpolator and state of the loaded programs									122	1	RO/RW	rising edge	read: Is program running, edge: start program									
									123	1	RO/RW	rising edge	read: Is program paused, edge: pause program	262 1	uint16	Loaded robot programs count	262 1	uint16	0= main program, 1-4 for sub programs			
									124	1	RO/RW	rising edge	read: Is program not running (and not paused), edge: stop program	263 1	uint16	Count of commands in currently executed program	263 1	uint16	count of the current program file, not total of all loaded programs			
														265 1	uint16	Currently executed command number in program	265 1	uint16	-1 (0xffff) when not running			
														266 1	enum	Reason for last program stop/pause	266 1	enum	see enum IPO Stop Reason			
Program selection									130	1	RW	rising edge	Read directory entry	331 1	uint16	Count of entries in current directory	331 1	uint16				
This uses the legacy interface of the teach pendant to select an entry in the programs folder. Alternatively you may give the entry number or a file name to load, see registers 267-332 (section "Program").									131	1	RW	rising edge	Previous directory entry	332 1	uint16	Number of the selected directory entry	332 1	uint16	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	333 364	32	string	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	365 396	32	string	Up to 64 ASCII characters	
									134	1	RW	rising edge	Go to base directory (../Data/Programs)									
									135	1	RW	rising edge	Unload robot program									
									136	1	RW	rising edge	Unload logic program									
Teach programming									140	1	RW	rising edge	Save program	not implemented								

[illegible]

