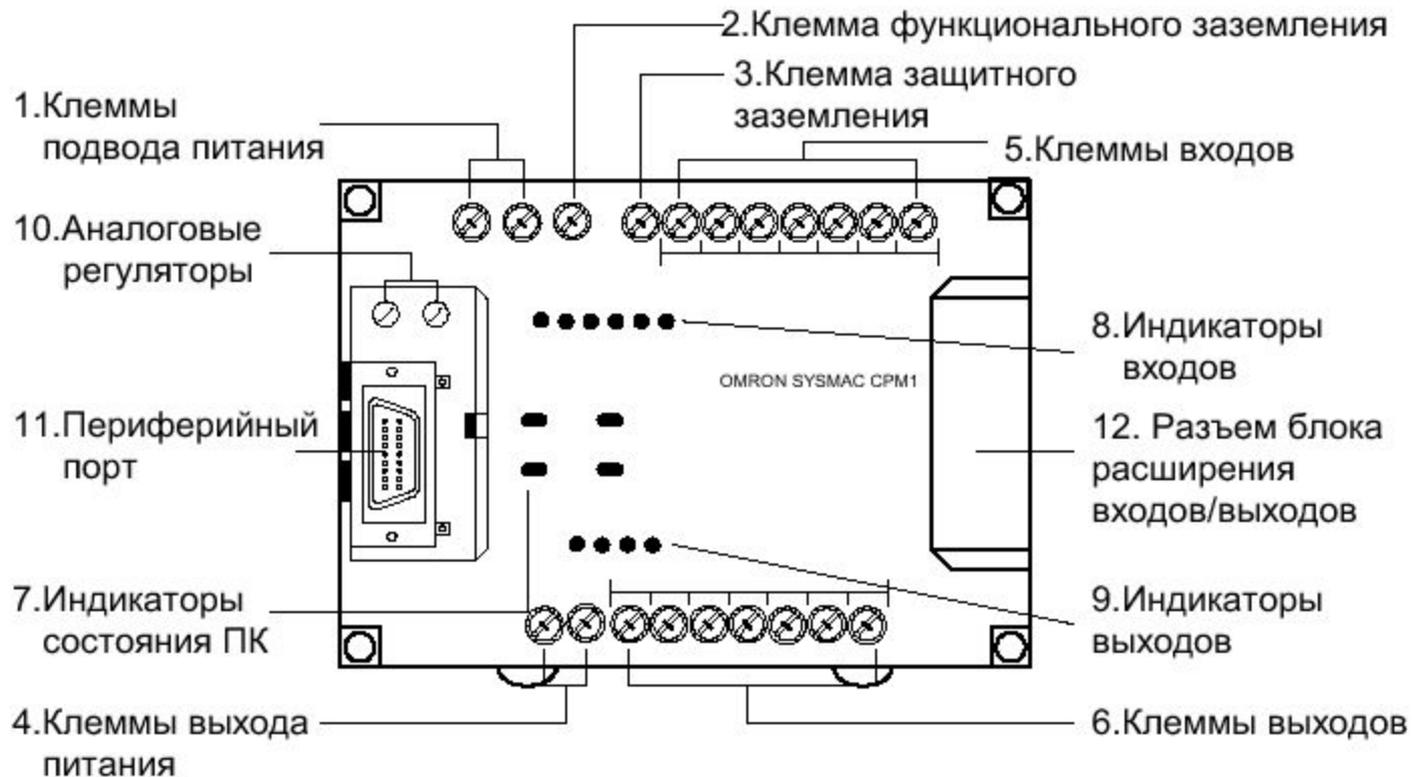
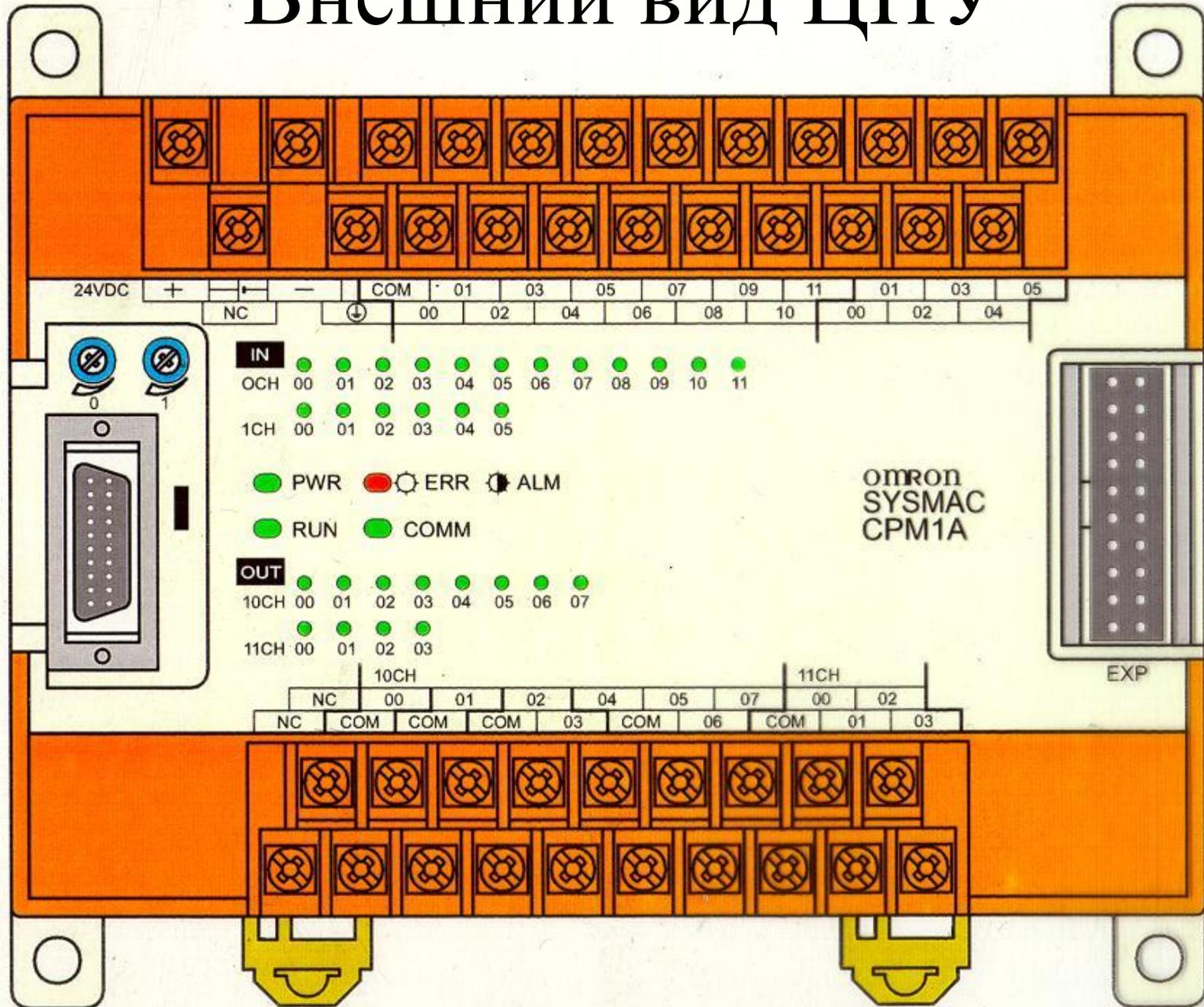


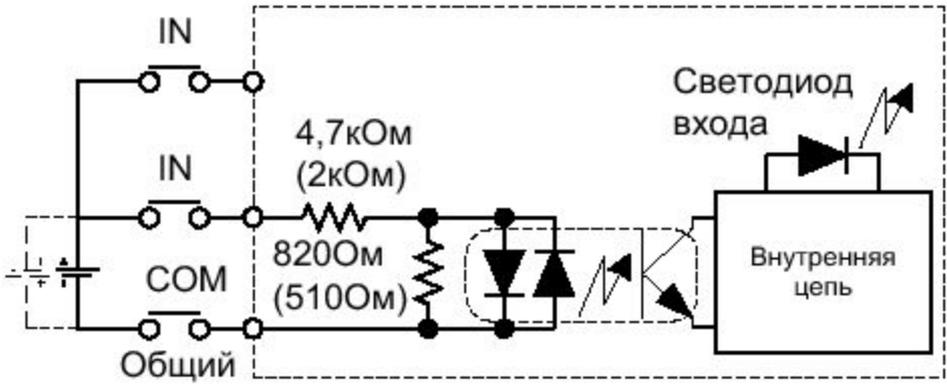
Внешний вид ЦПУ



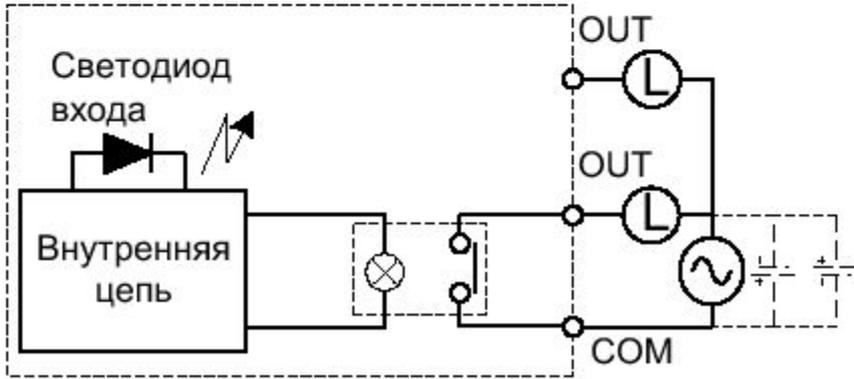
Внешний вид ЦПУ



Характеристика ВХОДОВ

Параметр	Спецификация
Входное напряжение	24 В пост. тока +10% / -15 %
Входной импеданс	Входы IN 0000 ... IN 00002: 2 кОм, другие входы 4.7 кОм
Входной ток	Входы IN 0000 ... IN 00002: 12 мА другие входы 5 мА
Напряжение уровня 1	Минимум 14.4 В пост. тока
Напряжение уровня 0	Максимум 5.0 В пост. тока
Задержка включения в 1	Максимум 8 мс.
Задержка выключения в 0	Максимум 8 мс.
Функциональная схема	 <p>Прим.: Цифры в скобках- для IN00000 ... IN00002</p>

Релейный выход

Параметр	Значение
Тип выхода	Все выходы релейные
Макс. переключаемая нагрузка	2 А, 250 В пер. тока ($\cos \phi = 1$) 2 А, 24 В пост. тока (4А / общий)
Мин. переключаемая мощность	10 мА, 5 В пост. тока
Тип реле	G6D-1A
Прочность реле	Электрическая: 300 000 операций (активная нагрузка) 100 000 операций (индуктивная нагрузка) Механическая: 20 000 000 операций
Задержка включения в 1	макс. 10 мс
Задержка выключения в 0	макс. 5 мс
Функциональная схема	

Транзисторный NPN выход

Item	Specification			
	CPM1A-10CDT-D	CPM1A-20CDT-D /-20EDT /-8ET	CPM1A-30CDT-D	CPM1A-40CDT-D
Max. switching capacity	24 VDC ^{+10%} / _{-15%} , 0.3 A/point (see note)			
	0.9 A/Unit	0.9 A/common 1.8 A/Unit	0.9 A/common 2.7 A/Unit	0.9 A/common 3.6 A/Unit
Leakage current	0.1 mA max.			
Residual voltage	1.5 V max.			
ON delay	0.1 ms max.			
OFF delay	OUT01000/01001: 0.2 ms max. (load current: 100 to 300 mA) 0.5 ms max. (load current: 5 to 100 mA) Other than OUT01000/01001: 1 ms max. (load current: 5 to 300 mA)			
Fuse	1.25 A/common (cannot be replaced by the user)			
Circuit configuration				

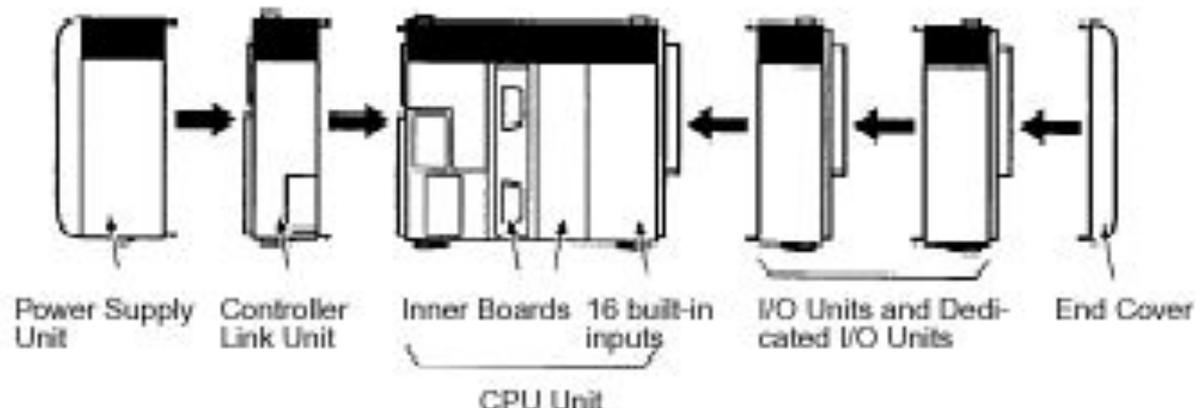
Транзисторный PNP выход

Item	Specification			
	CPM1A-10CDT1-D	CPM1A-20CDT1-D /-20EDT1 /-8ET1	CPM1A-30CDT1-D	CPM1A-40CDT1-D
Max. switching capacity	24 VDC $+10\%/_{-15\%}$, 0.3 A/point (see note)			
	0.9 A/Unit	0.9 A/common 1.8 A/Unit	0.9 A/common 2.7 A/Unit	0.9 A/common 3.6 A/Unit
Leakage current	0.1 mA max.			
Residual voltage	1.5 V max.			
ON delay	0.1 ms max.			
OFF delay	OUT01000/01001: 0.2 ms max. (load current: 100 to 300 mA) 0.5 ms max. (load current: 5 to 100 mA) Other than OUT01000/01001: 1 ms max. (load current: 5 to 300 mA)			
Fuse	1.25 A/common (cannot be replaced by the user)			
Circuit configuration				

CQM1H



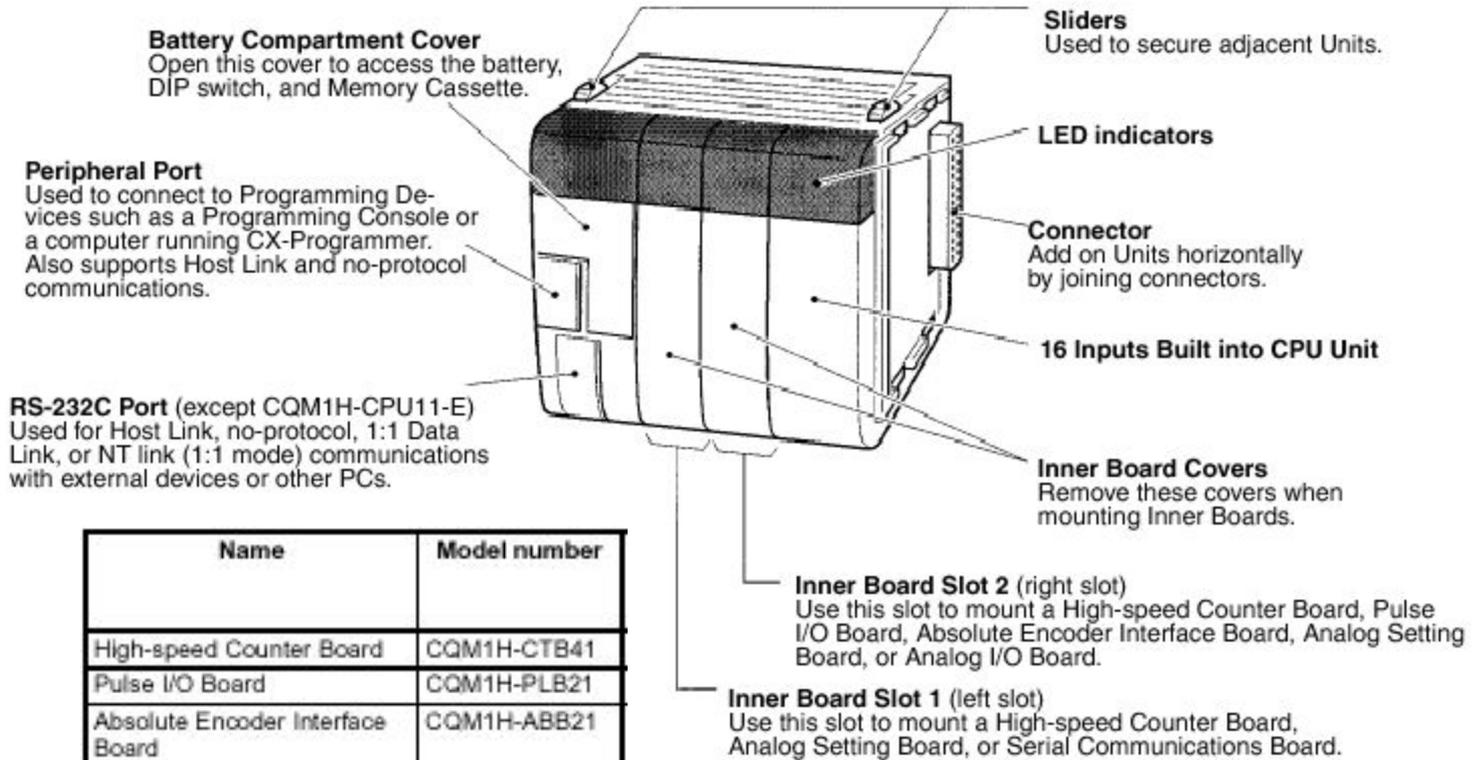
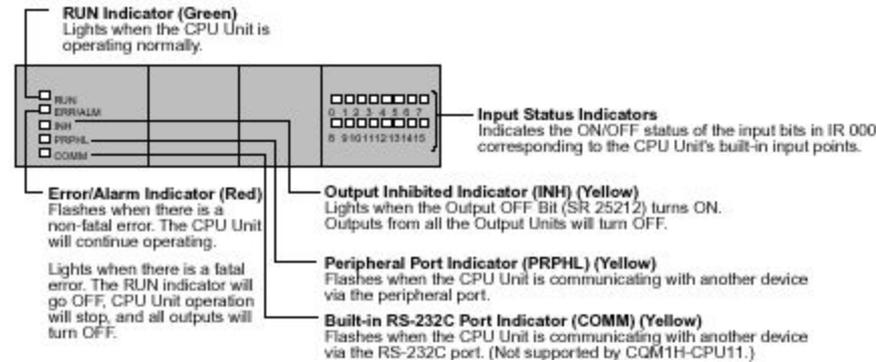
Конфигурация COM1H



Model number	Capacity
CQM1-PA203	5 V DC, 3.6 A (18 W)
CQM1-PA206, CQM1-PA216	5 V DC, 6.0 A; 24 V DC output, 0.5 A (30 W total) The total power consumption from the 5-V DC supply and 24-V DC output must be less than 30 W. In other words: 5 V DC current consumption × 5 + 24 V DC current consumption × 24 ≤ 30 (W).
CQM1-PD026	5 V DC, 6 A (30 W)

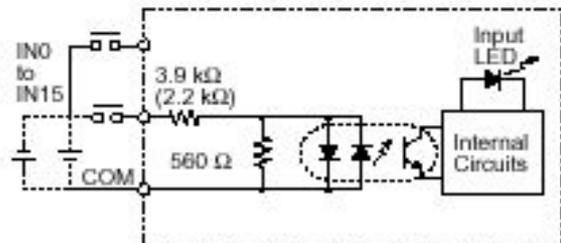
Model number	I/O capacity (points, see note)	Program capacity (Kwords)	CPU Unit built-in input points	DM capacity (Kwords)	EM capacity (Kwords)	Built-in serial communications ports		Inner Boards	Communications Unit
						Peripheral port	RS-232C port		
CQM1H-CPU61	512	15.2	DC: 16	6	6	YES	YES	Supported	Supported
CQM1H-CPU51		7.2		6	None				
CQM1H-CPU21	256	3.2		3	No			No	Not supported
CQM1H-CPU11									

Компоненты ЦПУ

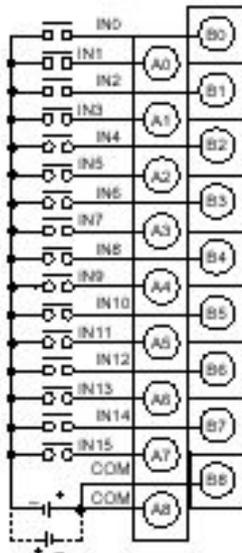


Name	Model number
High-speed Counter Board	CQM1H-CTB41
Pulse I/O Board	CQM1H-PLB21
Absolute Encoder Interface Board	CQM1H-ABB21
Analog Setting Board	CQM1H-AVB41
Analog I/O Board	CQM1H-MAB42
Serial Communications Board	CQM1H-SCB41

Встроенные входы

Item	QCM1H-CPU11/21/51/61
Input Voltage	24 V DC $+10\%$ / -15%
Input Impedance	IN4 and IN5: 2.2 k Ω ; other inputs: 3.9 k Ω
Input Current	IN4 and IN5: 10 mA typical; other inputs: 6 mA typical (at 24 V DC)
ON Voltage	17.4 V DC min.
OFF Voltage	5.0 V DC max.
ON Delay	Default: 8 ms max. (can be set between 1 and 128 ms in PC Setup; see note)
OFF Delay	Default: 8 ms max. (can be set between 1 and 128 ms in PC Setup; see note)
No. of Inputs	16 points (16 inputs/common, 1 circuit)
Circuit Configuration	 <p>Note Figures in parentheses are for IN4 and IN5. The input power supply polarity may be connected in either direction.</p>

Terminal Connections



Input number	Input bit	Function
IN0	IR 00000	Normal inputs or input interrupts (Input Interrupt Mode or Counter Mode): set in PC Setup (DM 6628).
IN1	IR 00001	
IN2	IR 00002	
IN3	IR 00003	
IN4	IR 00004	Normal inputs or high-speed counter 0: set in PC Setup (DM 6642).
IN5	IR 00005	
IN6	IR 00006	Only usable as normal inputs.
IN7	IR 00007	
to	to	
IN14	IR 00014	
IN15	IR 00015	

Модули дискретных входов

Name	Number of points	Specifications	Connection method	Model number	Input words allocated from IR 001	Output words allocated from IR 100
DC Input Units	8	12 to 24 V DC, independent commons (1 point per common, 8 circuits)	Terminal block	CQM1-ID211	1 word	---
	16	12 V DC (16 points per common, 1 circuit)		CQM1-ID111		
		24 V DC (16 points per common, 1 circuit)		CQM1-ID212		
	32	12 V DC (32 points per common)	Connector	CQM1-ID112	2 words	
		24 V DC (32 points per common)		CQM1-ID213		
		24 V DC (32 points per common)		CQM1-ID214		
AC Input Units	8	100 to 120 V AC (8 points per common)	Terminal block	CQM1-IA121	1 word	
		200 to 240 V AC (8 points per common)		CQM1-IA221		

Модули дискретных выходов

Name	Number of points	Specifications	Connection method	Model number	Input words allocated from IR 001	Output words allocated from IR 100
Contact Output Units	8	2 A at 250 V AC ($\cos\phi = 1.0$) 2 A at 250 V AC ($\cos\phi = 0.4$) 2 A at 24 V DC (16 A per Unit), independent commons	Terminal block	CQM1-OC221	---	1 word
	16	2 A at 250 V AC ($\cos\phi = 1.0$) 2 A at 250 V AC ($\cos\phi = 0.4$) 2 A at 24 V DC (8 A per Unit)		CQM1-OC222		
	8	2 A at 250 V AC ($\cos\phi = 1.0$) 2 A at 250 V AC ($\cos\phi = 0.4$) 2 A at 24 V DC (16 A per Unit), independent commons		CQM1-OC224		
Transistor Output Units	8	2 A at 24 V DC (5 A per Unit) 8 points per common		CQM1-OD211		
	16	50 mA/4.5 V DC to 300 mA/26.4 V DC 16 points per common		CQM1-OD212		
	32	16 mA/4.5 V DC to 100 mA/26.4 V DC	Connector	CQM1-OD213		2 words
		500 mA/24 V DC, PNP output		CQM1-OD216		
	16	300 mA/24 V DC, PNP output	Terminal block	CQM1-OD214		1 word
8	1.0 A/24 V DC, PNP output (4A per Unit), short-circuit protection	CQM1-OD215				
Triac Output Units	8	0.4 A at 100 to 240 V AC, 4 points per common, 2 circuits		CQM1-OA221		
	6	0.4 A at 100 to 240 V AC		CQM1-OA222		

Специализированные модули

Name	Specifications	Model number	Input words allocated from IR 001	Output words allocated from IR 100
Analog Input Unit	4 analog input points -10 to +10 V, 0 to 10 V, 1 to 5 V, 4 to 20 mA	CQM1-AD041	2 or 4 words	---
Analog Output Unit	2 analog output points -10 to +10 V, 0 to 20 mA	CQM1-DA021	---	2 words
Analog Power Supply Units	Power supply for Analog Input or Output Unit (required when using Analog Input or Output Unit)	CQM1-IPS01 (Supplies 1 Unit.)	---	---
		CQM1-IPS02 (Supplies 2 Units.)		
B7A Interface Units	16 output points	CQM1-B7A02	---	1 word
	16 input points	CQM1-B7A12	1 word	---
	32 output points	CQM1-B7A03	---	2 words
	32 input points	CQM1-B7A13	2 words	---
	16 input points and 16 output points	CQM1-B7A21	1 word	1 word
G730 Interface Units	2-wire transmission terminal G730 Master Unit 32 inputs/32 outputs max.) 32 points/16 points switchable	CQM1-G7M21	1 or 2 words	1 or 2 words
	For Expansion Master Input (32 points max.), 32 points/16 points switchable	CQM1-G7N11	1 or 2 words	---
	For Expansion Master Output (32 points max.), 32 points/16 points switchable	CQM1-G7N01	---	1 or 2 words
I/O Link Unit (SYSMAC BUS Wired Slave Unit)	For SYSMAC BUS Wired Slave Unit 32 input points and 32 output points	CQM1-LK501	2 words	2 words

Специализированные модули

Name	Specifications	Model number	Input words allocated from IR 001	Output words allocated from IR 100
Sensor Unit	Sensor input points: 4 max. Used with Sensor Module(s). Up to four Sensor Modules can be mounted to a single Sensor Unit.	CQM1-SEN01	1 word (Up to 5 words with following 4 Modules.)	---
Optical Fiber Photoelectric Module	For E32 series Fiber Units. Automatic teaching is supported.	E3X-MA11	1 word	---
Photoelectric Module with Separate Amplifier	For E3C-series Photoelectric Sensors. An automatic teaching function is incorporated	E3C-MA11	1 word	---
Proximity Module with Separate Amplifier	For E2C-series Proximity Sensors. Automatic teaching is supported.	E2C-MA11	1 word	---
Dummy Module	Mounted as spacers to the open slots of the CQM1 when no Sensor Module is mounted to the CQM1H.	E39-M11	1 word	---
Remote Console	Connected to a Sensor Unit for the adjustment of the sensitivities of the modules incorporated by the Sensor Unit, reading and changing of the set value, and teaching. Cable length: 3 m	CQM1-TU001	---	---

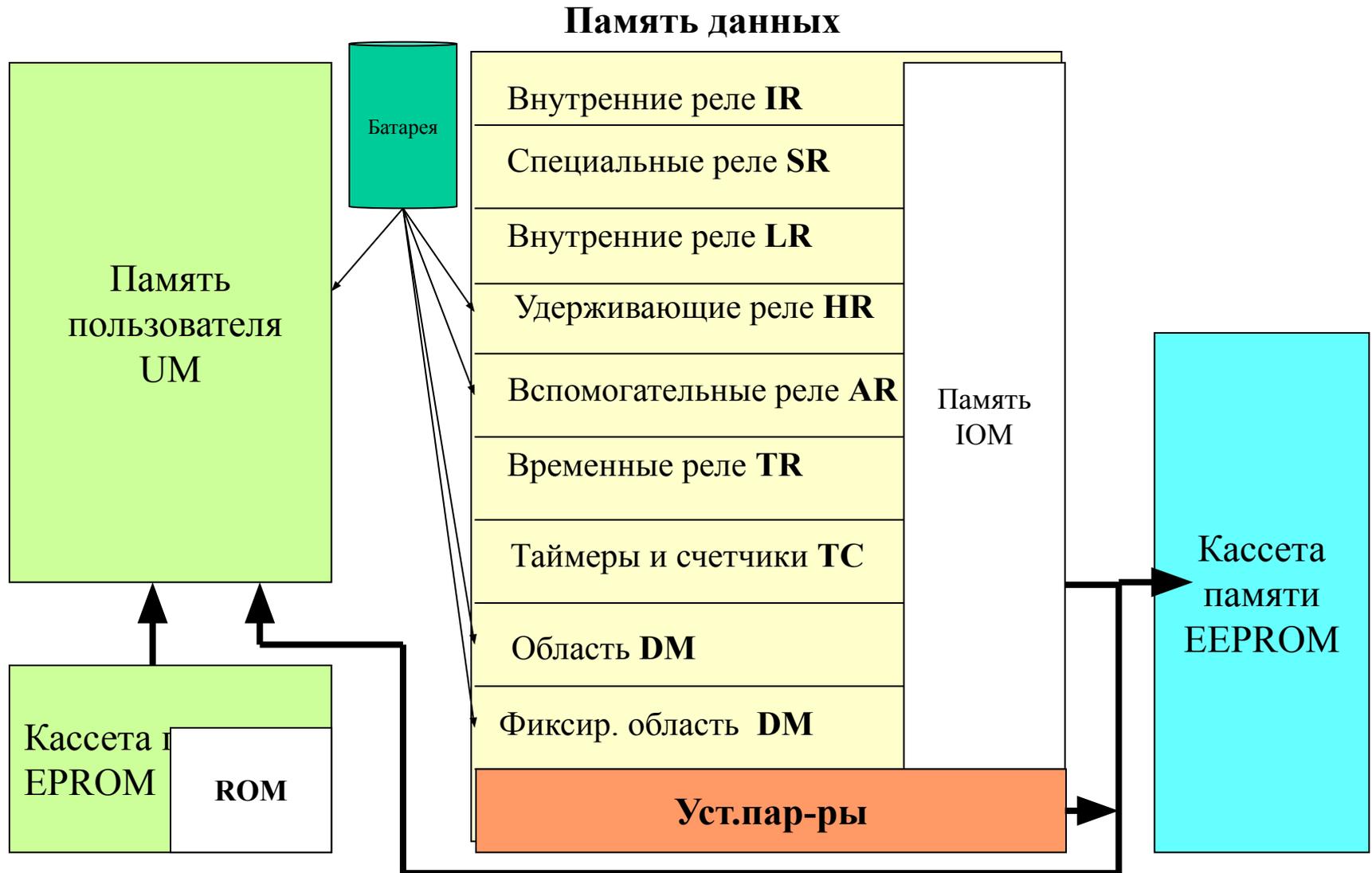
Специализированные модули

Name	Specifications	Model number	Input words allocated from IR 001	Output words allocated from IR 100
Temperature Control Units	2 thermocouple inputs (K/J), ON/OFF or advanced PID control, transistor (NPN) output, 2 loops	CQM1-TC001	1 or 2 words	1 or 2 words
	2 thermocouple inputs (K/J), ON/OFF or advanced PID control, transistor (NPN) output, 2 loops	CQM1-TC002	1 or 2 words	1 or 2 words
	2 platinum resistance thermometer inputs (Pt, JPt), ON/OFF or advanced PID control, transistor (NPN) output, 2 loops	CQM1-TC101	1 or 2 words	1 or 2 words
	2 platinum resistance thermometer inputs (Pt, JPt), ON/OFF or advanced PID control, transistor (NPN) output, 2 loops	CQM1-TC102	1 or 2 words	1 or 2 words
	2 thermocouple inputs (K/J/T/L/R/S/B), ON/OFF or advanced PID control, transistor (NPN) output, 4 loops	CQM1-TC201	1 word	1 word
	4 thermocouple inputs (K/J/T/L/R/S/B), ON/OFF or advanced PID control, transistor (PNP) output, 4 loops	CQM1-TC202	1 word	1 word
	4 platinum resistance thermometer inputs (Pt, JPt), ON/OFF or advanced PID control, transistor (NPN) output, 4 loops	CQM1-TC301	1 word	1 word
	4 platinum resistance thermometer inputs (Pt, JPt), ON/OFF or advanced PID control, transistor (PNP) output, 4 loops	CQM1-TC302	1 word	1 word
	2 thermocouple inputs (K/J/T/L/R/S/B), ON/OFF or advanced PID control, transistor (NPN) output, 2 loops, heater burnout detection function	CQM1-TC203	1 word	1 word
	2 thermocouple inputs (K/J/T/L/R/S/B), ON/OFF or advanced PID control, transistor (PNP) output, 2 loops, heater burnout detection function	CQM1-TC204	1 word	1 word
	2 platinum resistance thermometer inputs (Pt, JPt), ON/OFF or advanced PID control, transistor (NPN) output, 2 loops, heater burnout detection function	CQM1-TC303	1 word	1 word
	2 platinum resistance thermometer inputs (Pt, JPt), ON/OFF or advanced PID control, transistor (PNP) output, 2 loops, heater burnout detection function	CQM1-TC304	1 word	1 word

Специализированные модули

Name	Specifications	Model number	Input words allocated from IR 001	Output words allocated from IR 100
Linear Sensor Interface Units	Measure voltage or current inputs from linear sensors and convert the measurements to numeric data for comparative decision processing. Standard type	CQM1-LSE01	1 word	1 word
	With monitor output (-9.999 V to 9.999 V).	CQM1-LSE02	1 word	1 word
CompoBus/S Master Unit	128 points (64 inputs and 64 outputs), 64 points (32 inputs and 32 outputs), or 32 points (16 inputs and 16 outputs) selectable with a switch.	CQM1-SRM21-V1	1, 2, or 4 words	1, 2, or 4 words
CompoBus/D (DeviceNet) I/O Link Unit	CompoBus/D Slave: 32 points (16 inputs and 16 outputs)	CQM1-DRT21	1 word	1 word

Концепция памяти



Размер памяти

Область памяти		Размер для CQM1H		Размер для CPM1A		Назначение
IR	Входов	256 бит	IR 0 ... IR 15	160 бит	IR 0 ... IR 9	Используются для адресации входов и выходов контроллера
	Выходов	256 бит	IR 100 ... IR 115	160 бит	IR 10 ... IR 19	
	Рабочая	2 528 бит	IR 16 ... IR 89 IR 116 ... IR 189 IR 216 ... IR 219 IR 224 ... IR 229	512 бит	IR 200 ... IR 231	Могут быть произвольно использованы внутри программы, например как маркеры.
Область Controller Link		96 бит	IR 90 ... IR 95			Хранится информация о состоянии сети. Если модуль не подключен – рабочая область
		96 бит	IR 196 ... IR 99			
Область функции MACRO	Вход	64 бит	IR 96 ... IR 99			Используются специальной функцией, позволяющей вызывать одну подпрограмму с разными исходными данными.
	Выход	64 бит	IR 196 ... IR 199			
Область 1 слота панели		256 бит	IR 200 ... IR 215			Используется платами.
Область аналоговых задатчиков		64 бит	IR 220 ... IR 223			Отображает состояние аналоговых задатчиков на плате.
Область высокоскоростного счетчика 0		32 бит	IR 230 ... IR 231			Отображает текущее значение нулевого высокоскоростного счетчика.
Область 2 слота панели		192 бит	IR 232 ... IR 243			Используется платами.
SR		184 бит	SR 244 ... SR 255	384 бит	SR 232 ... SR 255	Программные флаги и биты контроля.
HR		1 600 бит	HR 0 ... HR 99	326 бит	HR 0 ... HR 19	Промежуточные биты (маркеры)
AR		448 бит	AR 0 ... AR 27	256 бит	AR 0 ... AR 15	Системные флаги и биты контроля.
TR		8 бит	TR 0 ... TR 7	8 бит	TR 0 ... TR 7	Биты ветвления программы
LR		1 024 бит	LR 0 ... LR 63	256 бит	LR 0 ... LR 15	Область обмена данными
Таймеры и счетчики		512 бит	T0 ... T512	127 бит	T0 ... T 127	
		512 слов	C0 ... C512	127 слов	C0 ... C127	
DM	Чтение и запись	6 144 слов	DM 0 ... DM 6 143	1 002 слова	DM 0 ... DM 999 DM 1022 ... DM 1023	Память для хранения промежуточных значений
	Только чтение	425 слов	DM 6144 ... DM 6568	456 слов	DM 6144 ... DM 6599	Память для хранения констант
	Протокол ошибок	31 слово	DM 6569 ... DM 6599	22 слова	DM 1000 ... DM 1021	
	Установочные параметры	56 слов	DM 6600 ... DM 6655	56 слов	DM 6600 ... DM 6655	