

Specifications

General Specifications

Model	HG1F	HG2F	HG3F	HG4F
Voltage	24V DC			
Voltage Range	20.4 to 28.8V DC		19.2 to 28.8V DC	
Power Consumption	10W maximum		25W maximum	
Inrush Current	20A maximum		15A maximum (cold start)	
Allowable Momentary Power Interruption	10 ms minimum			
Dielectric Strength	1,000V AC, 10 mA, 1 minute between power and FG terminals		1,500V AC, 10 mA, 1 minute between power and FG terminals	
Insulation Resistance	50 MΩ minimum between power and FG terminals (500V DC megger)		10 MΩ minimum between power and FG terminals (500V DC megger)	
Backup Battery	CR2032 lithium battery Life approx. 4 years (25°C)		—	
Operating Temperature	0 to 50°C (no freezing)			0 to 45°C (no freezing)
Operating Humidity	10 to 90% RH (no condensation)	10 to 95% RH (no condensation)	20 to 85% RH (no condensation)	
Storage Temperature	-20 to +60°C (no freezing)			
Storage Humidity	10 to 90% RH (no condensation)	10 to 95% RH (no condensation)	20 to 85% RH (no condensation)	
Pollution Degree	2 (IEC 60664-1)			
Corrosion Immunity	Atmosphere free from corrosive gases			
Vibration Resistance (damage limits)	10 to 20Hz amplitude 0.625 mm, 20 to 55Hz acceleration 9.8 m/s ² (1G), 2 hours per axis on each of three mutually perpendicular axes			
Shock Resistance (damage limits)	147 m/s ² (15G), 11 ms, 5 shocks on each of three mutually perpendicular axes			
Noise Immunity	Fast transient/burst test, common mode: Level 3, power terminals: ±2 kV, communication line: ±1 kV (IEC/EN 61000-4-4)			
Electrostatic Discharge	ESD-3 (RH-1), Level 3, (contact ±6 kV, aerial ±8 kV) (IEC/EN 61000-4-2)			
Mounting	Panel mounting			
Degree of Protection	IP65 NEMA TYPE 13		IP66 NEMA TYPE 4, 4X, 13	
Dimensions (mm)	147W x 47H x 39.3D	172W x 136H x 56D	324W x 240H x 56D	348W x 270H x 58D
Weight (approx.)	280g	800g	2800g	3400g

Operation Specifications

Model	HG1F	HG2F		HG3F	HG4F
		Standard	CC Switch Option		
Switching Element	Resistive membrane				
Touch Region Resolution	1 x 1	16 x 12	16 x 8	32 x 24	40 x 30
CC Switch Quantity	—		4 x 1 row (bottom only)	—	
Operating Force	0.2 to 0.8N		2.5 to 5.0N	0.2 to 0.8N	0.2 to 0.8N
Mechanical Life	1,000,000 operations				
Acknowledge Sound	Electronic buzzer				
Screen Types	Base screen, popup screen, system screen				
Number of Screens	Base screen: 3000 max., popup screen: 3015 max.		Base screen: 3000 max., popup screen: 3000 max.		
User Memory	1MB (including expansion fonts)	2MB		8MB*	
Parts	Bit Button, Word Button, Goto Screen Button, Print Button, Key Button, Keypad, Selector Switch, Potentiometer, Numerical Input, Character Input, Pilot Lamp, Multi-state Lamp, Picture Display, Message Display, Message Switching Display, Alarm List Display, Alarm Log Display, Numerical Display, Bar Graph, Trend Chart, Pie Chart, Meter, Calendar, Bit Write Command, Word Write Command, Goto Screen Command, Timer, Print Command, Screen Script Command				
Calendar	Year, Month, Day, Hour, Min., Sec., Day of Week				
Print Function (support)	ESC/P, PC-PR: Epson VP-700 SII: DPU414			ESC/P, PC-PR, PCL, EPSON LP2500/VP-700/PX-V600/ Stylus C83, C84, C87, C88, D88, HP Deskjet 3820	
Power Failure Backup	Backup data: Calendar, log data, keep internal relay, keep internal register				
Backup Duration	1 month (at 25°C) after full charging for two days				
Battery Life	4 years (at 25°C)	—			—

*2MB for OS



Display Specifications

Model	HG1F	HG2F		HG3F	HG4F	
		Color	Monochrome	Color	Color	
LCD	Monochrome STN	Color STN	Monochrome STN	Color TFT		
Effective Display Area (mm)	115W x 39W	118.2W x 89.4H		211.2W x 158.4H	246W x 184.5H	
Display Resolution	300W x 100H	320W x 240H pixels		640W x 480H pixels	800W x 600H pixels	
LCD Life	50,000 hours minimum			100,000 hours minimum	60,000 hours minimum	
Contrast Adjustment	Possible in steps using the front touch screen					
Backlight	Cold-cathode tube			Cold-cathode tube (2 tubes)		
Backlight Life	50,000 hours nominal (Note)	40,000 hours nominal (Note)		50,000 hours nominal (Note)		
Backlight Control	Automatic OFF					
Backlight Replacement	Possible					
Display Character Size	1/4 size	8 x 8 pixels (Western European language: ISO 8859-1, Central European language: ANSI 1250, Japanese katakana and symbols: JIS 8-bit code)				
	1/2 size	8 x 16 pixels (Western European language ISO 8859-1, Central European language: ANSI 1250, Japanese katakana and symbols: JIS 8-bit code) 16 x 32 pixels, 24 x 48 pixels, 32 x 64 pixels (Western European language: ISO 8859-1)				
	Full size	16 x 16 pixels (Japanese JIS first and second level characters, simplified Chinese, traditional Chinese, Korean)				
	Double size	32 x 32 pixels (Japanese JIS first level characters, Mincho font)				
Quantity of Characters	1/4 size	37 characters x 12 lines	40 characters x 30 lines (40 x 20, cc click type)	80 characters x 60 lines	100 characters x 75 lines	
	1/2 size	37 characters x 6 lines	40 characters x 15 lines (40 x 10, cc click type)		80 characters x 30 lines	100 characters x 37 lines
	Full size	18 characters x 6 lines	20 characters x 15 lines (20 x 10, cc click type)		40 characters x 30 lines	50 characters x 37 lines
	Double size	9 characters x 3 lines	10 characters x 7 lines (10 x 5, cc click type)		20 characters x 15 lines	25 characters x 18 lines
Character Magnification	0.5, 1, 2, 3, 4, and 8 vertically and horizontally					
Character Attribute	Blink (1 or 0.5 sec period), reverse, bold, shadowed					
Graphics Type	Straight line, polyline, polygon, rectangle, circle, ellipse, arc, pie, equilateral polygons (3, 4, 5, 6, 8), paint, bitmap image					
Window Display	3 popup screens + 1 system screen					



Note: The backlight life refers to the time until the surface brightness reduces to a half after using continuously at room temperatures.

PLCs

Operator Interfaces

Automation Software

Power Supplies

Sensors

Communication & Networking

Interface Specifications

	CF Card Interface Specifications	Parallel Interface Specifications (HG3F/4F)	Ethernet Specifications (HG3F/4F)
Interface Specifications	Compact Flash Type I standard compliant*	—	IEEE 802.3 standard compliant, 10Base-T
Electrical Characteristics	—	Centronics interface compliant	—
Connector	50-pin compact flash card connector	D-sub 25-pin female connector	—



*Memory size supports up to 512MB.

Interface Specifications

RS232C	
Electrical Characteristics	EIA RS232C compliant
Transmission Speed	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 bps
Synchronization	Asynchronous
Communication Method	Half or full duplex
Control System	Hardware control or none
Connector	D-sub 25-pin female connector

RS485 (422)	
Electrical Characteristics	EIA RS485 (422) compliant
Transmission Speed	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 bps
Synchronization	Asynchronous
Communication Method	Half or full duplex
Control System	Hardware control or none
Connector	D-sub 25-pin female connector

Expansion Unit (Digital I/O Unit)		
Applicable Quantity	1	
Mounting Style	Mounted on the rear of the HG unit	
Input	Input Points	16
	Voltage	12 to 24V DC (allowable range 10 to 28V DC)
	Isolation Method	Photocoupler
Output	Output Points	16
	Load Voltage	12 to 24V DC (allowable range 10 to 28V DC)
	Isolation Method	Photocoupler
	Output Signal	NPN open collector
	Output ON Voltage	1.6V maximum
	Output Current	30 mA max. per point, 200 mA total
Connector	24-pin connector (Fujitsu FCN-365P024-AG) 2 connectors for inputs and outputs	

Maintenance Communication	
Electrical Characteristics	EIA RS232C compliant
Transmission Speed	9600, 19200, 38400, 57600, 115200 bps
Synchronization	Asynchronous
Communication Method	Half duplex, proprietary protocol
Connector	Mini DIN 8-pin connector

OI Link Communication	
Electrical Characteristics	EIA RS485 compliant
Transmission Speed	38400, 57600, 115200 bps
Synchronization	Asynchronous
Communication Method	Half duplex, proprietary protocol
Connector	Special connector

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