

Guía de Nuevos Productos



HANYOUNG nux



Controladores de Temperatura LCD

Serie VX



Controlador de Temperatura de alto desempeño con amplio ángulo de visión, cómodo y de un excelente desempeño de control.

- ▶ PV: Display de 14 segmentos
(17% mayor a los productos existentes)
- ▶ SV: 11 segmentos, MV: 7 segmentos (VX2,7,9)
- ▶ 0.2% de Precisión
- ▶ 50ms de velocidad de muestreo
- ▶ Rápida sincronización de 1.5 ciclos
(Sincronización existente: 2.25 ciclos)
- ▶ 4 PID, 4 SV, 4 salidas auxiliares
(VX4: máx 3 salidas)
- ▶ 63mm de profundidad, cuerpo corto
- ▶ Tapa protectora para contactos (Opcional)
- ▶ Monitoreo en tiempo real / Grabación / Configuración de Parámetros por TCS
- ※ TCS es nuestro programa gratuito, descárgelo en www.hynux.com



Visibilidad



◆ Amplio ángulo de visión, Varios colores, Visibilidad aumentada con caracteres más grandes

- ▶ PV: Display de 14 segmentos (17% mayor a los productos existentes)
- ▶ SV: 11 segmentos, MV: 7 segmentos (VX2,7,9)
- ▶ Display MV: Disponible solo para VX2, VX7, VX9 (VX4: Presione la tecla MD para ver el valor MV en estado de Ejecución)
- ▶ Visibilidad mejorada con caracteres en blanco, verde y amarillo
- ▶ Estado de control, estado de comunicación y función de falla pueden ser verificados inmediatamente por varios indicadores



▶ Modelo Previo



▶ VX

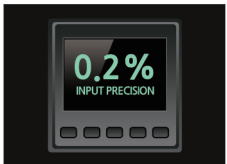


Desempeño de control superior

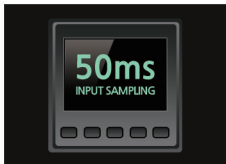


◆ Alta precisión y alta velocidad de muestreo

- ▶ Realización de control de alta precisión (Display con precisión $\pm 0.2\%$ de FS ± 1 dígito)
- ▶ Aplicable a sistemas de control rápido por su alta velocidad de muestreo
- ▶ Optimizado para ambientes que requieren una respuesta de alta velocidad
- ▶ Control simultáneo de calentamiento y enfriamiento



▶ 0.2 %
Precisión



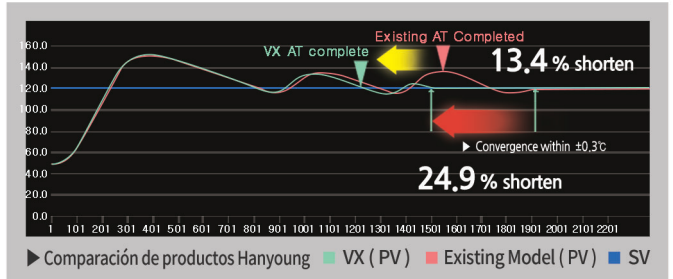
▶ 50 ms
Alta velocidad de muestreo



▶ Control de Calentamiento y Enfriamiento

◆ Reduced tuning time Optimal Control

- ▶ Rápida sincronización de 1.5 ciclos (Sincronización existente: 2.25 ciclos)



◆ Varias opciones

- ▶ Termopar. RTD, Entrada Análoga
- ▶ Control Estándar, Control de Calentamiento y Enfriamiento, Control con Rampa
- ▶ 4 PID, 4 SV, 4 salidas auxiliares (VX4: máx 3 salidas)
- ▶ Varias funciones de alarma y relevador de alta capacidad (5A, 220VAC)
- ▶ Alarma de ruptura de bucle (LBA), Salida de Retransmisión (RET), Entrada Digital (DI), Entrada Remota (REM), Alarma de ruptura de calentador (HBA)
- ▶ Comunicación RS485 (Modbus RTU) (PC-LINK, PC-LINK SUM, ModbusASCII)



Comodidad



◆ Ahorra espacio, Estructura de protección de panel frontal, Botones de operación mejorados

- ▶ 63mm de profundidad, cuerpo corto (78.4mm con tapa de protección)
- ▶ Protección de Panel frontal(VX4: IP66, VX2,7,9:IP65)
- ▶ Fácil mantenimiento/repación con estructura de separación frontal
- ▶ Tacto amigable y durabilidad con interruptores tact (Material ABS)



▶ 63mm de profundidad



▶ Uso seguro en ambientes con polvo y aprueba de aguaagua



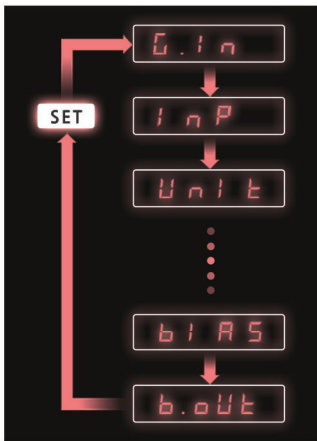
▶ Fácil reemplazo, sin volver a conectar, a través del frente removible



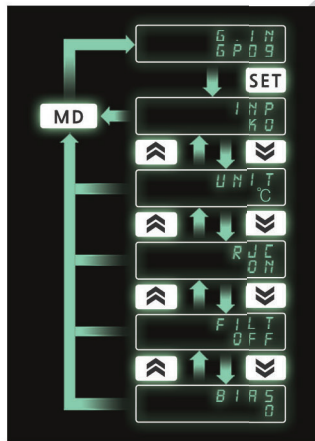
▶ Durabilidad aumentada usando botones ABS



▶ Tapa protectora (Se vende por separado)



▶ Método existente para la configuración de parámetros (Movimiento unidireccional)



▶ Método del VX para la configuración de parámetros (Movimiento bidireccional)

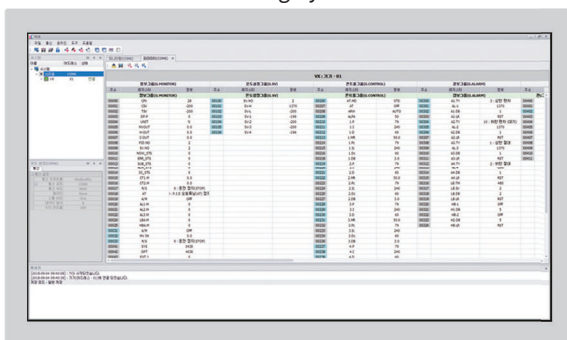


◆ Menú de configuración sencillo

- ▶ Cómodo y ahorra tiempo con las teclas arriba/abajo
- ▶ Fácil operación a través de los menús completo/básico/sencillo
- ▶ Teclas frontales de función (RUN/STOP, AT, MANUAL/AUTO output, Lock)

◆ Configuración de parámetros por PC

- ▶ Programa de comunicación total Hanyoung Nux (TCS)
- ▶ TCS es nuestro programa gratuito, descárgelo en eng.hynux.com
- ※ TCS freeware download at eng.hynux.com



◆ Función de carga por USB


- ▶ Cable MINI USB2.0(NMC-UM210)/ Se vende por separado
- ▶ Fácil respaldo de valores de parámetros
- ▶ Puede usarse sin suministro de energía



▶ Solo conectando el cable USB



▶ Conexión VX con TCS con cable USB with USB cable

Classification		VX2	VX4	VX7	VX9	
Input	Thermocouple	K, J, E, T, R, B, S, L, N, U, W, PLII				
	Reference junction compensation accuracy	±1.5 °C (within -10~50 °C)				
	RTD	JPT100, PT100				
	Allowable line resistance	Each 3 wire within 10 Ω (but the resistance among 3 lines should be same)				
	DC voltage / current	1 ~ 5 V (4 ~ 20 mA), 0 ~ 5 V, 0 ~ 10 V, 0 ~ 50 mV, 0 ~ 100 mV				
Sampling cycle		50 ms				
Control output	Relay output	● Rated switching capacity: 5A 250 VAC, 5 A 30 VDC ● Max. switching power: 750 VA, 90 W ● Max. switching voltage: 250 VAC, 110 VDC ● Max. switching current: 5 A ● Mechanical life: 20 million times (at 180 CPM)				
	Voltage pulse output	AC		12 VDC ± 1 VDC pulse voltage (load resistance min. 600 Ω)		
		DC		12 - 15 VDC pulse voltage (load resistance min. 600 Ω)		
Current output		4 ~ 20 mA ± 0.2% of FS ± 1 digit, load resistance: max. 600 Ω				
Control	Control type	ON/OFF, PID control, 2DOF PID control				
	Output operation	Reverse action, direct action				
Memory	Non-volatile memory life	EEPROM unlocked: when setting E2PL: OFF in G.SET group (EEPROM life: 1 million times write guaranteed) / EEPROM locked: when setting E2PL: ON in G.SET group (store in RAM)				
Display part (H*W) mm	Display method	Wide viewing angle LCD				
	PV character	20.5 x 6.9	15.2 x 6.8	19.8 x 9.3	29.0 x 13.6	
	SV character	12.8 x 5.9	7.4 x 3.9	10.2 x 4.9	15.0 x 7.2	
	MV character	9.3 x 4.4	7.4 x 3.9	7.5 x 3.3	11.0 x 4.8	
USB Loader	Communication method	USB 2.0				
	Protocol	Protocol : PC-LINK	Baudrate : 38400 bps	Start bit : 1 bit	Data bit : 8bit Parity bit : None Stop bit : 1bit	
	Communication distance	Within 5 m				
Option	Sub output	Relay 1 ~ 4 outputs, rated switching capacity: 5A 250 VAC, 5 A 30 VDC				
	Digital input	2 points or 4 point	Contact input ON : 1 KΩ max., OFF: 100 KΩ min., Non-contact input ON : 1.5 V max., OFF: 0.1 mA max. Current Flow : approx. 2 mA per contact, Voltage at open : Approx. 5 V DC			
	Retransmission output	1 output, 4 ~ 20 mA ± 0.2% of FS ± 1 digit, load resistance: max. 600 Ω				
	Remote input	1 input, 4 ~ 20 mA (1 ~ 5 V)				
	Current detection input	1 input or 2 inputs, 0.0 - 50.0 A, CT-70 current transformer (sold separately)				
	RS-485	Communic. method	EIA RS485 standard, 2-wire half-duplex			
		Max. connections	31 (address setting 1~99 available)			
		Communic. sequence	No sequence			
		Communic. distance	Within 1.2 km			
		Communic. speed	4800, 9600, 14400, 19200, 38400, 57600 BPS			
bit		Start bit : 1 bit, Data bit : 7 or 8 bit, Parity bit : NONE / EVEN / ODD, Stop bit : 1 or 2 bit				
Power	Power voltage	AC	100 - 240 VAC, 50/60 Hz			
		DC	24 VDC			
	Voltage fluctuation rate	±10 % of power voltage				
	Insulation resistance	Min. 20 MΩ, 500 VDC				
	Dielectric strength	3,000 VAC, 50/60 Hz for 1 minute (between 1st and 2nd terminal)				
	Power consumption	AC	Max. 8.5 VA	Max. 8.5 VA	Max. 8.5 VA	Max. 9.0 VA
		DC	Max. 2.7 W	Max. 2 W	Max. 2.8 W	Max. 3.2 W
Ambient temperature & humidity		-10 ~ 50 °C, 35 ~ 85 % RH (without condensation)				
Storage temperature		-25 ~ 65 °C				
Approval		 Electrostatic discharge (ESD) : KN61000-4-2 EFT(RS) : KN61000-4-3 Conductive RF (CS) : KN61000-4-6 SURGE : KN61000-4-5				
Weight (g)		202	120	194	290	
Basic components		Main body, Bracket, 250 Ω resistor (1%) , Rubber packing, Instruction manual				

Model	Code	Content
VX	□-□□□□□□□□□□□□□□□□	LCD Digital Temperature Controller
Size	2	48(W) × 96(H) × 63(D) mm
	4	48(W) × 48(H) × 63(D) mm
	7	72(W) × 72(H) × 63(D) mm
	9	96(W) × 96(H) × 63(D) mm
Sensor	U	Universal input
OUT 1 (control output 1)	M	Relay output
	S	Voltage pulse output (voltage pulse output for SSR drive)
	C	Current output (4-20 mA current output for SCR drive)
OUT 2 (control output 2)	N	None
	M	Relay output
Power	A	100 - 240 VAC 50/60 Hz
	D	24 VDC
Sub output	A1	1 relay output (VX4 basic option)
	A2	2 relay outputs (VX2, VX7, VX9 basic option)
	A3	3 relay outputs (※ *1 *2)
	A4	4 relay outputs (※ *2)
Communication	C	None RS-485 communication
Retransmission output RET	T	None Retransmission output (4 ~ 20 mA)
Digital input DI	D2	None 2 digital inputs (DI 1 ~ 2)
	D4	4 digital inputs (DI 1 ~ 4)
Current detection input CT	H1	None Current detection input (CT) 1 contact
	H2	Current detection input (CT) 2 contacts
Remote input REM	R	None 1 input 4 20 mA 1 5 V

※ *1) Not available for VX4 However when OUT2 is selected as M SUB3 can be used according to the parameter setting

※ *2) You can select from VX2 VX7 VX9 VX4 is excluded




※ Please refer to our user s manual catalog or homepage for the model names of VX available for order



※ sold separately





- Current transformer: CT-70
- USB Loader Cable: NMC-UM210
- Protective cover



VX2	VX4	VX7	VX9
TC2A-COV	TC4A-COV	TC7A-COV	TC9A-COV

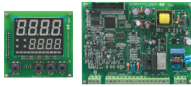

Temperature Controllers




Type	Multi Input Temperature Controllers	Multi-Channel Digital Temperature Controllers	Modular Multi-Channel Temperature Controllers
Model	AX series	MC9	ML series
Appearance			
Features	<ul style="list-style-type: none"> Multi Input High speed sampling cycle (0.1 sec) Installation depth: 63 mm Control output selectable: reverse operation/direct operation Control loop break alarm (LBA) 	<ul style="list-style-type: none"> 4/8 channel control function Multi-memory function (ax 8 X 8) Heating / cooling control (4 channels) Digital input (DI) Communication function (RS232, RS485/422) 	<ul style="list-style-type: none"> Sampling cycle 50 ms 8 Event output contact units Max. 32 parallel connections (including ML-E) Unit power, communication connection by side connector Communication function (RS232C, RS485)
Power voltage	100 - 240 VAC 50/60 Hz		24 VDC
Accuracy	±0.3 % of FS		±0.3 % of FS ±1 Digit
Input	RTD, thermocouple (K, J, R, T, IEC 584-1)		RTD, thermocouple, DC voltage
Output	Relay output, SSR output, current output	Relay output, SSR output, current output, Triac output	Relay output, SSR output, current output
Control type	PID control / ON-OFF control		

Type	Multi Input / Output Temperature Controllers	Easy Operation Temperature Controllers
Model	NX series	DX series
Appearance		
Features	<ul style="list-style-type: none"> Fuzzy function, PID auto-tuning 3 zone PID/ Group PID 3 types Ramp control function Heating / cooling control, Heater break alarm 3 set value type selection function by digital input (DI) Communication function (RS485/422) 	<ul style="list-style-type: none"> PID auto-tuning Direct/reverse operation internal selection High and Low alarm output Control loop break alarm (LBA) Decimal point display and high / low setting limitation Retransmission output
Power voltage	100 - 240 VAC	
Accuracy	0.5 % of FS	± 0.5 % of FS
Input	RTD, thermocouple, DC voltage	
Output	Relay output, SSR output, current output	
Control type	PID control/ ON-OFF control	




Type	Easy Operation Temperature Controllers		Cost-Effective Digital Temperature Controllers	Temperature Controllers Without Indicator
Model	HY series	DF series	ED6	HY-2000, HY-1000, ND4
Appearance				
Features	<ul style="list-style-type: none"> Proportional control or ON / OFF control Convenient temperature setting Alarm setting (HY-8200S) Sharp digital display 	<ul style="list-style-type: none"> Proportional control or ON / OFF control Convenient temperature setting Auxiliary output setting (SUB) Sharp digital display Convenient 8 pin socket type (DF4) 	<ul style="list-style-type: none"> heating/cooling control selection Alarm output and timer output selection ON/OFF, Proportional control selection 0.1°C / 1°C selection Delay output time setting 	<ul style="list-style-type: none"> Proportional control or ON/OFF control Convenient temperature setting Plug-in method (repair, inspection, exchange convenience) Burnout function (output OFF during sensor disconnection) Strong against vibrations and impacts, so it can be installed directly on the machine
Power voltage	110/220 VAC 50/60 Hz	DF2: 110/220 VAC 50/60 Hz DF4: 220 V a.c, 110 VAC 50/60 Hz (order separately)	100 - 240 VAC ,10 - 24 VAC/DC	110/220 VAC
Accuracy	±1 % of FS ±1 Digit	±1 % of FS ±1 Digit	±0.5 % of FS ±1 Digit	Non-indicating
Input	RTD, thermocouple, DC voltage	RTD, thermocouple	RTD, thermocouple	RTD, thermocouple
Output	Relay output, SSR output, current output		Relay output, SSR output	Relay output
Control type	Proportional control, ON/OFF control		Proportional control, ON/OFF control	


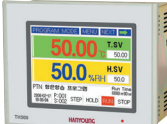

Type	Multi Input Temperature Controllers	
Model	KX series	MT100
Appearance		
Features	<ul style="list-style-type: none"> Multi Input Decimal point position selection 2-stage step function by external contact (KX4S) Output operation selectable: reverse operation/direct operation PID auto-tuning 	<ul style="list-style-type: none"> Input 4 channels (control: 2 channels, monitoring: 2 channels) Temperature, pressure, current detection alarm functions Abnormal history display and saving functions Reverse phase detection (motor rotation direction) function Medium replenishment and suction function Communication function (RS485/422)
Power voltage		
Accuracy	0.5 % of FS	Temperature: $\pm 0.3\%$ of FS ± 1 Digit Pressure: $\pm 3\%$ of FS ± 1 Digit
Input	RTD, thermocouple, DC voltage	RTD, thermocouple
Output	Relay output, SSR output, current output	Relay output, SSR output
Control type	PID control/ ON-OFF control	



Type	Board Type Temperature Controllers	
Model	BX8	SM100
Appearance		
Features	<ul style="list-style-type: none"> Fuzzy function, PID auto-tuning 3 zone PID/ Group PID 3 types Ramp control function Heating / cooling control, Heater break alarm 3 set value type selection function by digital input (DI) Communication function (RS485) Convenient design (detachable case) 	<ul style="list-style-type: none"> Less installation space required with the board design 20 Channel integrated digital temperature controller $\pm 0.5\%$ display accuracy of max. range Several alarm functions. (digital output 3 contacts) Communication function built-in (RS485/422, RS232C)
Power voltage	100 - 240 VAC	
Accuracy	$\pm 0.5\%$ of FS ± 1 Digit	$\pm 0.5\%$ of FS
Input	RTD, thermocouple, DC voltage	RTD, thermocouple
Output	Relay output, SSR output, current output	SSR output
Control type	PID control/ ON-OFF control	

Type	Temperature Controllers For Refrigerators		Temperature Controllers For Greenhouses
Model	BR6A	BR6	HD6
Appearance			
Features	<ul style="list-style-type: none"> Heating/cooling control selection Alarm output, timer output selection ON/OFF, Proportional control selection 0.1°C / 1°C selection Delay output time setting IP65 (IEC 60529) front degree of protection Operation convenience improved with the set move key 	<ul style="list-style-type: none"> heating/cooling control selection Alarm output and timer output selection ON/OFF, Proportional control selection 0.1°C / 1°C selection Delay output time setting 	<ul style="list-style-type: none"> Greenhouse open / close motor control only 1-, 2-stage control operation according to set value Hysteresis setting by ON/OFF output Operation according to temperature and time setting 0.1 °C display function
Power voltage	100 - 240 VAC/DC	100 - 240 V, 10-24 VAC/DC	100 - 240 VAC
Accuracy	$\pm 1\%$ of FS ± 1 Digit		$\pm 1\%$ of FS
Input	TH-570N(Hanyoung Nux exclusive sensor)	Thermistor(Hanyoung Nux exclusive sensor)	Thermistor(Hanyoung Nux exclusive sensor)
Output	Relay output, SSR output		Relay output
Control type	Proportional control, ON/OFF control		Proportional control, ON/OFF control



Temperature / Humidity Controllers




Type	Modular Programmable Temperature Controllers		2-Channel Programmable Temperature Controllers	
Model	TD510		TD500	TD300
Appearance				
Features	<ul style="list-style-type: none"> · 2-channel control · Several alarm functions · Multi input (RTD, TC, VDC) · Communication function built-in (RS485) · Detachable and expandable structure · Digital Recorder function (internal memory, SD card storage) · Digital input (DI) max. 32 contacts, digital output (DO) max. 32 contacts · 5.7" Color TFT LCD touch screen 		<ul style="list-style-type: none"> · 5.7" Color STN LCD touch screen · 2-channel control · PID control · Max. 100 patterns, 100 segments / pattern (total 2,400 segments) · Several alarm functions (output: 4 contacts, operation: 20 types) · Digital input (DI) 8 contacts, Digital output (DO) 16 contacts · Communication function (RS485 or RS232 depending on the suffix code) 	<ul style="list-style-type: none"> · 2-channel control · PID control · 3.5" Color TFT LCD touch screen · Max. 100 patterns, 100 segments/pattern (total 2,400 segments) · Several alarm functions (output: 4 contacts, operation: 20 types) · Digital input (DI) 8 contacts, Digital output (DO) 8 contacts · Communication function (RS485 or RS232 depending on the suffix code) · Data storage and parameter backup through SD card
Power voltage	100 - 240 VAC			
Accuracy	±0.15 % of FS		±0.1 % of FS	
Input	RTD, thermocouple, DC voltage			
Output	Relay output, SSR output, current output			
Control type	PID control/ ON-OFF control			

Type	Modular Programmable Temperature & Humidity Controllers		Programmable Temperature & Humidity Controllers	
Model	TH510		TH500	TH300
Appearance				
Features	<ul style="list-style-type: none"> · High-precision control · Several alarm functions · Smartphone remote monitoring function · Communication function built-in (RS485) · Detachable and expandable structure · Temperature, humidity independent PID control · Digital recorder function (internal memory, SD card storage) · Digital input (DI) max. 32 contacts, digital output (DO) max. 32 contacts · 5.7" Color TFT LCD touch screen 		<ul style="list-style-type: none"> · 5.7" Color STN LCD touch screen · High-precision control · 100 patterns (total 6000 segments) · Temperature, humidity independent PID control · Several alarm functions · Digital input (DI) 8 contacts, Digital output (DO) 20 contacts · Communication function built-in (RS232, RS422/485) 	<ul style="list-style-type: none"> · 3.5" Color TFT LCD touch screen · High-precision control · 100 patterns (total 2000 segments, 100 segments / pattern) · Temperature, humidity independent PID control · Several alarm functions · Digital input (DI) 4 contacts, digital output (DO) 12 contacts · Communication function (RS485 or RS232 depending on the suffix code)
Power voltage	100 - 240 VAC			
Accuracy	Temperature: ±0.1 % of FS / Humidity: ±1 % of FS			Temperature: ±0.2 % of FS / Humidity: ±2 % of FS
Input	RTD, DC voltage			
Output	SSR output, current output			
Control type	PID control/ ON-OFF control			



Type	Thermal Shock Test Controllers		Programmable Temperature Controllers
Model	TS510		NP200
Appearance			
Features	<ul style="list-style-type: none"> · Damper & elevator method support · Multi input (RTD, TC, VDC) · Communication function built-in (RS485) · Detachable and expandable structure · Digital Recorder function (internal memory, SD card storage) · Digital input (DI) max. 32 contacts, digital output (DO) max. 32 contacts · 5.7" Color TFT LCD touch screen 		<ul style="list-style-type: none"> · Multi input / output, ± 0.1 % high accuracy · 30 patterns, 300 segments (1 pattern / 99 segments) · Heating / cooling PID control · 3-level PID selection (4 PID groups) · PID auto-tuning mode 2 types · Digital input (DI) 7 contacts, User output (UO) 10 contacts · Communication function (RS485/422)
Power voltage	100 - 240 VAC		
Accuracy	RTD: ±0.1% of FS, thermocouple: ±0.15 % of FS		±0.1 % of FS
Input	RTD, thermocouple, DC voltage		
Output	SSR output, current output		Relay output, SSR output, current output
Control type	PID control/ ON-OFF control		

Temperature Indicators

Type	Digital Temperature Indicators	Large LED Temperature Indicators
Model	BK3	HN100
Appearance		
Features	<ul style="list-style-type: none"> 0.5 % high accuracy indicator Simple exclusive indication Power voltage 110/220 VAC Character height 14.2/20.0 mm LED applied 	<ul style="list-style-type: none"> Large LED indication (character 34 X 56 mm) IP57 (IEC 60529) waterproof type Stainless external case Suitable for saunas, green houses, sport centers, Greenhouses
Power voltage	110/220 VAC	12 VDC
Accuracy	±0.5 % of FS	±0.5 % of FS ±1 Digit
Input	RTD, thermocouple, DC voltage, DC current	RTD, DC current

Type	5-channel Temperature Indicators	Multi Input Temperature Indicators	Portable Thermometers
Model	TP3	BK6-M	D55
Appearance			
Features	<ul style="list-style-type: none"> Indicates 5 contact temperatures Temperature deviation compensation function in each channel Channel fixing/channel automatic switch selection Automatic switching time selection in each channel 	<ul style="list-style-type: none"> Multi Input (thermocouple, RTD, voltage · current) Retransmission output (4 - 20 mA DC) Temperature unit selection Measured value correction function 	<ul style="list-style-type: none"> Temperature indication by large LCD Temperature unit selection Thermocouple selection function (K, J) Indication value hold, max. / min value indication Individual temperature and temperature difference indication with 2 contact measurement input
Power voltage	100 - 240 VAC 50/60 Hz		9 VDC
Accuracy	±0.5 % of FS ±1 Digit		
Input	RTD, thermocouple	Multi Input (19 types), thermocouple, RTD	Thermocouple




Recorders

Type	Touch Screen Recorders	2-channel temperature controllers & recorders
Model	GR200	RT9N
Appearance		
Features	<ul style="list-style-type: none"> High-definition screen: 5.7" 640×480 TFT-LCD Large memory: SD and SDHC card support (internal memory: 80 MB) 3-language support: Korean, English, Chinese (simplified) Data storage and parameter backup function with SD card RS485/422/ETHERNET 	<ul style="list-style-type: none"> Several alarm functions Multi input/output Communication function (RS485) Free scale function PID auto-tuning Temperature record & control
Power voltage	100 - 240 VAC	
Accuracy	±0.15 % of FS ±1 Digit	±0.5 % of FS
Input	RTD, thermocouple, DC voltage	
Channels	2/4/8/12 channels	1/2 channels
Contact outputs	6 contacts, 12 contacts	Alarm: 2 contacts, Control output: 1 contact




Data Storage Devices

Floatless Level Switches

Electrode Holder

Type	Data Storage Devices	Floatless Level Switches	Electrode Holder
Model	EM310	FS - 3A	HY-ER3
Appearance			
Features	<ul style="list-style-type: none"> · 32 Mbyte data storage device · Convenient panel installation type (72 × 36 mm) · USB port for memory stick connection 	<ul style="list-style-type: none"> · Used for agricultural water, water treatment plant, sewage treatment plant, factory and several surface water control · Lightweight and easy to install · Operation status is indicated by LED 	<ul style="list-style-type: none"> · IP63 (IEC 60529) degree of protection · The PBT flame retardant provides robustness and reduces the fire risk · Body and cover are connected by hook coupling structure so they are easily detached by screwdriver
Power voltage	24 VDC	110 VAC / 220 VAC	-

Converters

Type	Ethernet To Serial Converters	Communication Converters	Temperature / Humidity Converters
Model	HMCE-103	CV310	CV250
Appearance			
Features	<ul style="list-style-type: none"> · Several connection interface support (RS232 / RS485 / RS422) · Open network protocol support · Up to 3 clients can be simultaneously connected 	<ul style="list-style-type: none"> · RS232 to RS485 / RS422 signal conversion · RS232 and RS485 / RS422, 2kV electrical insulation built-in protection device · RS485 Echo, Non-Echo function support · Excellent compatibility with fast transmission/reception switching speed · Max. 1.2 Km, 256 Node connection available 	<ul style="list-style-type: none"> · DIN rail and bolt fixing mounting method · Uniform with DC signal · Relative humidity calculation by dry bulb temperature and wet bulb temperature · Two-wire transmission line is simple. · Simple signal distribution (low output resistance) · Linear signal
Power voltage	5 VDC	5 VDC	-

Serie LC



Contadores/Temporizadores LCD con Rango Pre-escalado Extendido

- ▶ LCD con amplio ángulo de visión y luz blanca de fondo
- ▶ Protección frontal de panel (IP66)
- ▶ Función de ajuste para contador y temporizador
- ▶ Configuración de rango pre-escalado expandido (0.00001 a 999999)
- ▶ Función de comunicación Modbus (RS485)



- ※ Programa de comunicación total Hanyoung Nux (TCS)
- Monitoreo en tiempo real / Grabación / Configuración de Parámetros por TCS
- TCS es nuestro programa gratuito, descárgelo en eng.hynux.com

Specifications

Model	LC6	LC4	LC3	LC7	
Power voltage	100 - 240 VAC 50/60 Hz (voltage fluctuation rate: $\pm 10\%$)				
Power consumption	• 2-stage setting: max. 12 VA. • 1-stage setting: max. 11 VA				
Character height	Counting unit (10.5 mm), Setting unit (6.7 mm)	6-digit: counting unit (10.8 mm), setting unit (8 mm) 4-digit: counting unit (14 mm), setting unit (8.5 mm)	Counting unit (14.5 mm), Setting unit (10 mm)	Counting unit (17.2 mm), Setting unit (12.5 mm)	
Maximum counting speed	1 cps / 30 cps / 1 Kcps / 10 Kcps				
Power outage compensation	10 years (using non-volatile memory)				
Input	<ul style="list-style-type: none"> ● Selection of input method by external switch (voltage input / non-voltage input) ● Counter: composed of CP1, CP2, RESET, BATCH-RESET ● Timer: composed of START, INHIBIT, RESET ● Voltage input: HIGH level (5 - 30 VDC), LOW level (0 - 2 VDC), input resistance (about 4.5 kΩ) ● Non-voltage input: impedance during short-circuit (max. 1 kΩ), residual voltage during short-circuit (max. 2 VDC) 				
Minimum input signal time	1 ms / 20 ms (START, INHIBIT, RESET inputs)				
External power supply	Max. 12 VDC 100 mA				
ONE SHOT output	0.01 ~ 99.99 SEC				
Control output	Contact	1-stage setting	OUT (SPST, 1a)	OUT (SPDT, 1c)	OUT (SPDT, 1c)
		2-stage setting	OUT1 (SPST, 1a), OUT2 (SPDT, 1c) * OUT2 of LC6-P62C: SPST configuration		
	Capacity	• SPDT: NC (250 VAC 5A), NO (250 VAC 2A), resistive load • SPST: 250 VAC 5A, resistive load			
	Contactless	1-stage setting	NPN 2 circuits (OUT, BAT.O) * LC4-P61C/P41C models NPN 1 circuit configuration		
		2-stage setting	-	NPN 2 circuits (OUT1, OUT2)	NPN 2 circuits (OUT1, OUT2)
Capacity	Open collector, max. 30 VDC 100 mA				
Timer operation error	Power start: max. $\pm 0.01\%$ ± 0.05 sec, Reset start: max. $\pm 0.01\%$ ± 0.03 sec				
Communication	<ul style="list-style-type: none"> ● Protocol: Modbus-RTU ● Communication type: RS485 (2-wire half-duplex) ● Synchronization: Asynchronous ● Data bit: 8 bit ● Communication speed: 2,400 / 4,800 / 9,600 / 19,200 / 38,400 bps ● Effective distance: Max. within 800 m ● Parity bit: None / Odd / Even ● Max. connections: 31 (address: 1 ~ 127) ● Response waiting time: 5 ~ 99 ms ● Start bit: 1 bit (fixed) ● Stop bit: 1 bit (fixed) 				
Insulation Resistance	Min. 100 M Ω (500 VDC) conductive terminal - unfiled metal				
Dielectric strength	2000 VAC 60 Hz for 1 min (different live part terminals)				
Noise immunity	Square-wave noise by noise simulator (1 μ s pulse every 16 ms), ± 2000 V (pulse width 1 μ s)				
Vibration resistance	10 - 55 Hz, single amplitude 0.5 mm, 3-axis each direction, 2 h				
Relay Life	<ul style="list-style-type: none"> ● Electrical: Min. 50,000 times ● Mechanical: Min. 10 million times 				
Degree of protection	IP66 (IEC 60529) (product front)				
Storage temperature	-20 ~ 65 $^{\circ}$ C				
Ambient temperature & humidity	-10 ~ 55 $^{\circ}$ C, 35 ~ 85 % RH (without condensation)				
Approval	CE				
Weight (g)	196	140	143	222	

Suffix code

Model	Code	Content
LC	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	LCD Counter / Timer
Appearance	3	96(W) \times 48(H) \times 71.1(D) mm
	4	48(W) \times 48(H) 79.5(D) mm
	6	72(W) \times 36(H) 84.1(D) mm
	7	72(W) \times 72(H) 92.9(D) mm
Type	P	Preset Counter / Timer
Display digits	4	4 digit display (9999) ※ LC4 only
	6	6 digit display (999999)
Setting stages	1	1-stage setting
	2	2-stage setting
Sub output	N	No sub output
	C	RS485 (MODBUS-RTU)
Power voltage	A	100 - 240 VAC 50/60 Hz

LT4/LT4S



Temporizador con display LCD para una percepción mejorada

- ▶ Brillante y fácil de ver con un amplio ángulo de visión LCD
- ▶ 51.2mm de profundidad ▶ Protección de panel frontal(IP66)
- ▶ Durabilidad aumentada usando interruptores ABS
- ▶ Amplias especificaciones de alimentación (24 - 240 VAC/DC 50/60 Hz uso dual)
- ▶ Opción de salida de tiempo de único disparo (0.01 seg ~ 99.99 seg)
- ▶ Selección de tiempo mínimo de señal (1 ms / 20 ms)
- ▶ Varios rangos de tiempo (0.01 seg ~ 9999 hrs)
- ▶ Varios modos de operación

: LT4 : POND/PFKF/PFKN/PINT/TWON/TWOF/S-D

: LT4S : SOND/SFKF/SINT/SNFN/SNFF/SOFD/S.OND/S.FKN/S.INT/S.ODR





Specifications

Model	LT4 (socket type)	LT4S (socket type)
Power voltage	24 - 240 VAC 50/60 Hz, 24 - 240 VDC	
Allowable voltage fluctuation rate	±10% of power voltage	
Power consumption	Max. 4 VA (24 - 240 VAC 50/60 Hz) Max. 1.6 W (24 - 240 VDC)	Max. 4.5 VA (24 - 240 VAC 50/60 Hz) Max. 2 W (24 - 240 VDC)
Display method	Wide viewing angle negative LCD display	
Display mode	Up display and down display	
Display digits	4 digits	
Character height	PV display: 14 mm, SV display: 8.5 mm	
Return time	Max. 100 ms	
External connection	Socket 8-pin	
Operating time range	0.01 sec ~ 9999 hour	
External input	Input signal	-
	Input method	-
Minimum input time	-	START, INHIBIT, RESET minimum input signal width 1 ms / 20ms selection
Operating time error	Power START : max. ± 0.01 % ±0.05 sec., Signal START : max. ± 0.005 % ±0.03 sec.	
Control output	Operation mode	POND / PFKF / PFKN / PINT / TWON / TWOF / S-D
	Contact configuration	Time limit 2c, instantaneous 1c + time limit 1c
	Contact capacity	250 VAC 3A resistive load (NO:5A, NC:3A)
Relay life	Mechanical life: min. 10 million times, Electrical life: min. 100,000 times (250 VAC 5A resistive load)	
Insulation Resistance	Min. 100 MΩ (500 VDC Mega standard, conductive terminal - exposed unfilled metal part)	
Dielectric strength	2000 VAC 60 Hz for 1 min (conductive terminal - exposed unfilled metal part)	
Noise immunity	± 2 kV (among operation power terminals, pulse width = 1 us, square wave noise by noise simulator)	
Vibration resistance	10 - 55 Hz (for 1 min) single amplitude 0.5 mm X, Y, Z each direction 2 hours	
Shock resistance	300 m/s ² (30G) X, Y, Z each direction 3 times	
Degree of protection	IP66 (IEC 60529) (product front)	
Ambient temperature & humidity	-10 ~ 55 °C, 35 ~ 85 % RH (without icing)	
Storage temperature	-25 ~ 65 °C (without icing)	
Approval	CE	
Weight (g)	86	84





Suffix code



Model	Code	Content
LT4	<input type="checkbox"/>	LCD Timer
Control output		Time limit 2c, time limit 1c + instantaneous 1c
	S	Time limit 1c

Counter / Timers



Type	Counter / Timers	LCD Digital Counters
Model	GF series	LC1
Appearance		
Features	<ul style="list-style-type: none"> Counter & timer functions Pre-scale setting (GF7) 14 input operations, 16 output operations Decimal places setting 16 timer ranges (decimal / sexagesimal 8 types) NPN/PNP (voltage / non-voltage) input selection 	<ul style="list-style-type: none"> Compact LCD indicating total counter External power not needed with the built-in battery You can reuse the product by replacing the battery Small Power consumption and long battery life (about 7 years at room temperature) Non-voltage or voltage input IP66 (IEC 60529) degree of protection (front side)
Power voltage	100 - 240 VAC	Lithium battery built-in
Type	Preset method, Indication only	Indication only
Control functions	Counter, Timer	Counter
Display digits	4 digits, 6 digits	8 digits (addition)
Setting stages	1-stage setting, 2-stage setting	-




Timers

Type	LCD Timers	Digital Twin Timers		Digital Timers
Model	LT1	TT7H	TT4	TF4
Appearance				
Features	<ul style="list-style-type: none"> Compact LCD indicating total counter External power not needed with the built-in battery You can reuse the product by replacing the battery Long battery life with small power consumption (about 10 years at room temperature) Non-voltage or voltage input IP66 (IEC 60529) degree of protection (front side) 	<ul style="list-style-type: none"> Individual setting of ON time and OFF time Output operation control according to external START input signal Wide power specifications (100 - 240 VAC 50/60 Hz) 	<ul style="list-style-type: none"> Free voltage (100 - 240 VAC 50/60 Hz) Dual timer & twin timer functions (Can be used as 2 independent timers) Output operation control according to external input signal (START, RESET, INHIBIT) 	<ul style="list-style-type: none"> Simple functions, convenient setting Range selection with front side deep switch (2 types) Decimal or sexagesimal Relay or transistor output Free power (100 - 240 VAC 50/60 Hz, 24 - 60 VDC)
Power voltage	Lithium battery built-in	100 - 240 VAC (TT4) ,220 VAC (TT7H)		100 - 240 VAC
Type	Indication only	-		-
Display digits	8 digits (addition)	4 digits		-
Time specs	-	0.01 s ~9999 hour		Refer to standard range

Type	LCD Timers	LCD Weekly & Yearly Time Switches
Model	LF4N	LY series
Appearance		
Features	<ul style="list-style-type: none"> LCD display (displays several functions) Multi input ranges (10 types) Multi output operations (10 types) Bar graph over time display Reset, start and inhibit inputs Free voltage (24 - 240 VAC/DC 50/60 Hz) 	<ul style="list-style-type: none"> Easy to check and change programs Automatic change of seasonal program according to season setting function It is possible to add the yearly program to the weekly program The holiday setting function can block the output during the selected holidays Embedded type and exposed type installations (it can be installed on DIN rail without base plate)
Power voltage	24-240 VAC/DC	100 - 240 VAC
Display digits	4 digits	4 digits, 2 lines
Time specs	0.01 sec ~9990 hour	Minimum spacing interval: 1 minute

Timers

Type	Timing Relays	ON-Delay Timers
Model	T21	T38N, T48N, T57N
Appearance		
Features	<ul style="list-style-type: none"> Timing Relay (time limit 4c) Dimensions: 21.4 (W) X 28 (H) mm Plug-in type (14 pins) Time range and operation mode customizable by the user Several time ranges (min/sec : 0.1 sec ~ 60 min, hrs: 0.3 hrs ~ 24 hrs) Multi operation mode (power ON delay, interval, flicker OFF start, flicker ON start) 	<ul style="list-style-type: none"> Time progress display using ON LED Several time ranges (7 types) Time unit selectable (hours, minutes, seconds) Several model configurations (5 types) Free voltage (24 - 240 VAC/DC 50/60 Hz)
Power voltage	100 - 120 VAC, 200 - 230 VAC, 24 VDC	24 - 240 VAC/DC
Time specs	0.1 s ~ 24 hour	0.01 s ~ 60 hour

Type	Twin / Dual Timers	Analog Multi Timers	Star-Delta Timers
Model	TF62N, TF62D	MA4N	MA4SD
Appearance			
Features	<ul style="list-style-type: none"> Time progress display using ON LED Several time ranges (7 types) Time unit selectable (hours, minutes, seconds) Several model configurations (5 types) Free voltage (24 - 240 VAC/DC 50/60 Hz) 	<ul style="list-style-type: none"> Output operation modes (6 types) Multi range (4 types) Time units (4 types) Reset, start and inhibit inputs Free voltage (24 - 240 VAC/DC 50/60 Hz) 	<ul style="list-style-type: none"> 8-pin plug type High capacity motor start timer Star-delta contact outputs, Instantaneous contact outputs Wide power specifications (AC/DC dual usage) (100 - 240 VAC 50/60 Hz, 24 - 240 VDC)
Power voltage	24-240 VAC / DC		100-240 VAC
Time specs	Time range selection (3 types)	Minimum spacing interval: 1 minute	1~300 s

LP3



Medición de RPM, pulso de alta velocidad, 13 modos de operación

- ▶ Brillante y fácil de ver con un amplio ángulo de visión LCD
- ▶ 66.4mm de profundidad ▶ Protección de panel frontal(IP66)
- ▶ Expansión de rango de escala máximo: -9999 ~ 9999
- ▶ Varias funciones:
AUTO ZERO, Temporizador de compensación de inicio, Lectura comparativa de limite, Histéresis, Opciones de ciclo, Unidad de tiempo seleccionable, Indicador de valor máximo y mínimo, Memoria de respaldo



Specifications

Model		LP3-5A5	LP3-5A3	LP3-5AN
Power voltage		100 - 240 VAC 50/60 Hz		
Power consumption		Max. 15 VA	Max. 13 VA	Max. 10 VA
Display method		Negative LCD display		
Character size		PV value (14.5 mm), SV value (10 mm)		
Input frequency		Contactless (max. 50 KHz, ON/OFF pulse width 10 us min), contact (max. 30 Hz, ON/OFF pulse width min. 16.6 ms)		
Input type	Voltage	[H] level (4.5 - 24 VDC), [L] level (0 - 1 VDC), input impedance (4.5 kΩ)		
	Non-voltage	Impedance during short circuit (max. 300 Ω), residual voltage (1 V max), impedance during open (min. 100 kΩ)		
Measuring range		F1, F2, F10, F11, F12, F13 : 0.0005 ~ 50 KHz, F3, F4, F5, F6 : 0.001 s ~ 3200 s, F7, F8, F9 : 0 ~ 4x109		
Measuring accuracy		F1, F4, F10, F11, F12, F13 : FS ±0.05 % rdg ±1 digit, F2, F3, F5, F6 : FS ±0.01 % rdg ±1 digit		
External power supply		12 VDC ±10 % 100 mA		
Display cycle		0.05 sec / 0.5 sec / 1 sec / 2 sec / 4 sec / 8 sec		
Display range		-99999 ~ 99999		
Power outage compensation		Approx. 10 years (applying non-volatile EEPROM)		
Control output		HH (SPST), H (SPST), GO (SPST), L (SPST), LL (SPST) * HH/H output COM common, * LL/L output COM common	H (SPDT), GO (SPST), L (SPDT)	-
		NO contact (250 VAC 5 A resistive load), NC contact (250 VAC 2 A resistive load)		
Relay Life	Electrical	Min. 100 thousand times		
	Mechanical	Min. 10 million times (250 VAC 2A)		
Vibration resistance		10 - 55Hz double amplitude 0.75 mm X-Y-Z each direction 2 hours		
Insulation Resistance		Min. 100 MΩ (500 VDC), conductive terminal - unfilled metal		
Dielectric strength		2000 VAC at 60Hz for 1 min (different live part terminals)		
Noise immunity		±2000 V (pulse width 1 μs, apply square wave noise by noise simulator among power terminals)		
Degree of protection		IP66 (IEC 60529) (product front)		
Ambient temperature & humidity		-10 ~ 50 °C, 35 ~ 85 % RH (without condensation)		
Storage temperature		-20 ~ 60 °C		
Approval		CE		
Weight (g) ※		210	208	154

※ The weight of the terminal block cover is 8g.

Suffix code

Model	Code	Content
LP	□ □ □ □	LCD Multi Pulse meter
Appearance	3	96(W) × 48(H) × 71.1(D) mm
Display digits	5	5-digit display
Power voltage	A	100 - 240 VAC 50 - 60Hz
Output specifications	N	Indication only
	3	3-stage setting (H/GO/L)
	5	5-stage setting (HH/H/GO/L/LL)

Serie LM



Medidor de panel LCD con medidor de voltaje y corriente

- ▶ Visibilidad aumentada con el ángulo de visión LCD, caracteres de grandes y de varios colores
- ▶ 68mm(LM3), 81mm(LM6) de profundidad
- ▶ Protección de panel frontal(IP66)
- ▶ Medición seleccionable RMS y AVG
- ▶ Rango de escala máximo(-9999~9999)
- ▶ Función de comunicación Modbus
- ▶ Medición de frecuencia de corriente alterna(0.1~9999 Hz)
- ▶ Fácil configuración de parámetros con 2 filas de 4 dígitos en pantalla
- ▶ Especificación de medición de entrada máxima(500 VDC, 500 VAC, DC 5A, AC 5A)










Specifications




Model	LM3	LM6
Power voltage	100 – 240 VAC 50/60 Hz	
Input	● DV: DC voltage, ● DA: DC current, ● AV: AC voltage / Frequency, ● AA: AC current / Frequency	
Maximum measurement input	● DV: 500V, ● DA: 5A, ● AV: 500V, ● AA: 5A	
Alternating current measurement	Selectable AVG / RMS	
Frequency measurement range	0.1 ~ 9999 Hz	
Display	Negative-LCD, 4 digits 2 stage, PV: white, SV: Green	
Character height	18.1 X 11.0 mm	11.5 X 7.5 mm
Maximum	-9999 ~ 9999	
Sampling cycle	● DV/DA : 50ms ● AV/AA : 16.6ms	
Accuracy(23°C)	● DC : FS ±0.1% rdg ±2digit ● AC : FS ±0.3% rdg ±3digit ● Frequency : FS ±0.1% rdg ±2digit	
Control output	● Relay output: 3 stage, solid state relay: 3 stage, ● NPN/PNP, open collector	
Option output	Transmission output (4 - 20 mA), RS485	
External input	HOLD / ZERO, Zero voltage input, Break Impedance: Under 300 Ω, residual voltage: under 1V, open impedance: over 100 kΩ	
Communication	● Protocol : Modbus-RTU ● Communication way : RS485 (2-wire half-duplex) ● Speed : 2400 / 4800 / 9600 / 19200 / 38400 bps	
Degree of protection	IP66 (Front), Protect cover	
Functions	6 modes, hysteresis, alternating current frequency, Zero in, initialization, lower value deviation compensation, adjusting scale of transmission output, Pre-scale, Ramp function, offset compensation, delay , Monitoring Max/Min values, Lock key function	

Suffix code

Model	Code	Content
LM	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	LCD Multi panel meter
Appearance	3	96(W) X 48(H) X 68(D) mm
	6	72(W) X 36(H) X 81(D) mm
Display digits	4	4 DIGIT
Input type	DV	DC voltmeter
	DA	DC ammeter
	AV	AC voltmeter
	AA	AC ammeter
Output specifications	N	Only for displaying
	3R	3 stage Contact output
	3N	3 stage NPN Open collector output
	3P	3 stage PNP Open collector output
Option output	-	None (No option output)
	C	RS485 Output (MODBUS-RTU)
	A	Current output (4 - 20 mA DC)
Power voltage	A	100 – 240 VAC 50/60 Hz

Type	Small LCD Pulse Meters	Multi Pulse Meters	Multi Pulse Meters
Model	LP1	BP6	RP series
Appearance			
Features	<ul style="list-style-type: none"> Small LCD Pulse Meters Rotation speed / Frequency measurement 5-digit display available External power not needed with the built-in battery Non-voltage or free voltage input IP66 (IEC 60529) degree of protection (front side) 	<ul style="list-style-type: none"> Auto zero time setting Comparative output (HH,H,GO,L,LL) Start compensation timer function Max. value (5 types), min value (5 types) save Power outage compensation function (F9 mode) Max. 50 KHz 	<ul style="list-style-type: none"> Auto zero time setting Comparative output (HH, H, GO, L, LL) Start compensation timer function Max. value (5 types), min value (5 types) save Power outage compensation function (F9 mode) Max. 10 KHz input
Power voltage	Lithium battery built-in	100 - 240 VAC, 24 - 60 VAC/DC	
Operation modes	Revolution speed, frequency	Number of revolutions, frequency, speed, Moving speed, cycle, transit time, time difference, time width, pulse width, pulse interval, integration counter, absolute ratio, error ratio, density, error	Number of revolutions, frequency, speed, Moving speed, cycle, transit time, time difference, time width, pulse width, pulse interval, integration counter
Input frequency	-	50 KHz	10 KHz
Display cycle	-	0.05, 0.5, 1, 2, 4, 8 sec	
Output	-	Relay, transistor	Relay, transistor, retransmission

Type	Digital Multi Panel Meters	Digital Frequency Meters	Digital Voltmeter / Ammeters	
Model	MP3 / MP6	MP3-4H / MP6-4H	BS	BA1
Appearance				
Features	<ul style="list-style-type: none"> RMS measurement Multi input range Wide display range, 4 digits (-1999 ~ 9999) 	<ul style="list-style-type: none"> Exclusive frequency meter Frequency measurement by AC voltage input signal Wide display range, 4 digits(-1999~9999) 	<ul style="list-style-type: none"> Bright and clear LED display Cost-effective Max. display 1999 Average value measurement 	<ul style="list-style-type: none"> Bright and clear LED display Cost-effective Max. display 1999
Power voltage	100 - 240 VAC		100/240 VAC	5 VDC, 12 - 24 VDC
Display digits	-1999 ~ 9999		±19999	
Functions	Scaling	Frequency meter (Hz)	Polarity display (BS3) Indication value hold by external contact	Decimal point and polarity display over range indication
Input	Multi Input	Relay output	4 - 20 mA DC, 1 - 5 VDC, AC voltmeter, AC ammeter, DC voltmeter, DC ammeter	4 - 20 mA DC, 1 - 5 VDC DC voltmeter, DC ammeter
Output	Relay (HI,GO,LO) transistor, 4 - 20 mA DC, Communication (RS485) BCD (Except MP6), Display only	Relay (HI, GO, LO) transistor, 4 - 20 mA DC, Communication (RS485), Display only	Indication only	

Type	Digital Wattmeters	Digital Scale Meters	Non-Power Scale Meters
Model	WM3	HP3	HLP1
Appearance			
Features	<ul style="list-style-type: none"> Effective power display by RMS measurement Converter not needed with the voltage and current measurement method Measuring range up to 220 VAC Several outputs(Relay 4 - 20 mA DC open collector) 	<ul style="list-style-type: none"> High accuracy indicator(±0.03 % of FS) Max. display(-19999 ~ 19999) Retransmission output(4 - 20 mA DC) Communication function(RS232 or RS485) selection 	<ul style="list-style-type: none"> Non-power free scale high accuracy indicator(±0.3 % of FS) Max. display(-1999 ~ 9999) Current input(4 - 20 mA DC)
Power voltage	100 - 240 VAC		Non-power
Display digits	-1999 ~ 9999		-1999 ~ 9999
Functions	Wattmeter (W)	Scale meter	
Input	Single-phase 2-wire 220 VAC	1 channel 1 - 5 VDC, 4 - 20 mA DC	4-20 mA DC
Output	Display only, 4 - 20 mA DC relay (HI, GO, LO), transistor, communication (RS485)	4 - 20 mA DC Alarm output 2 contacts	Indication only

TPR-3SL-EP/3CH-EC



Regulador de energía por Tiristor de 3 Canales de Control por Fase

- ▶ 3 fases de individuales de control disponibles en un producto
- ▶ Es posible verificar y establecer la salida de corriente, \ Estado de alarma y configuración de parámetros a través de RS485 y comunicación Ethercat. (Se provee el programa de comunicación)
- ▶ Varias funciones de protección: Fusible de apertura de circuito, corto circuito por calentamiento parcial, sobre-calentamiento de sink 60/80 °C, sobre-corriente, corto circuito del elemento



TPR-3CH-EC

Specifications (TPR-3SL-EP)

Model	Low	TPR-3SL 040L-EP	TPR-3SL 055L-EP	TPR-3SL 070L-EP	TPR-3SL 090L-EP	TPR-3SL 130L-EP	TPR-3SL 160L-EP
	High	TPR-3SL 040H-EP	TPR-3SL 055H-EP	TPR-3SL 070H-EP	TPR-3SL 090H-EP	TPR-3SL 130H-EP	TPR-3SL 160H-EP
Power voltage	Low	100 - 240 VAC					
	High	100 - 440 VAC					
Circuit input power	100 - 240 VAC 18 W						
Power frequency	50/60 Hz (Dual usage)						
Rated current		40 A	55 A	70 A	90 A	130 A	160 A
Applying load	Resistive load						
Current input	4 - 20 mA DC (Impedance : 100 Ω)						
Control method	Phase control, Fixed Cycle control, Variable Cycle control, ON/OFF control						
Movement type	SOFT START, SOFT UP/DOWN						
Output voltage	More than 98 % of the power supply voltage (In case of maximum current input)						
Cooling method	Forced cooling						
Display method	Display by LED						
Insulation resistance	Min 100 MΩ (Base on 500 VDC mega)						
Output control range	0 ~ 100 %						
Dielectric strength	3000 VAC 50/60 Hz for 1 min						
Line noise	Noise by noise simulator (2,500 V)						
Ambient temperature	0 ~ 40 °C (Without Condensation)						
Ambient Humidity	30 ~ 85 % RH						
Storage temperature	-25 ~ 70 °C						
Approval	CE						
Weight(g)		4,324		9,194		9,288	

Suffix code (TPR-3SL-EP)

Model	Code	Content
TPR-3SL	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Slim type 3-phase power regulator
Rated load current	040	40 A
	055	55 A
	070	70 A
	090	90 A
	130	130 A
	160	160 A
Rated load voltage	L	100 - 240 VAC (Low)
	H	100 - 440 VAC (High)
Operation type	EP	Each phase control (3 device individual control)

* The circuit power and fan power must be applied separately 100 - 240 VAC
 * 130 A, 160 A products are FAN power 24 VDC Voltage must be applied.



Specifications (TPR-3CH-EC)




Model	Low	TPR-3CH 040L-EC	TPR-3CH 055L-EC	TPR-3CH 070L-EC	TPR-3CH 090L-EC	TPR-3CH 130L-EC	TPR-3CH 160L-EC	
	High	TPR-3CH 040H-EC	TPR-3CH 055H-EC	TPR-3CH 070H-EC	TPR-3CH 090H-EC	TPR-3CH 130H-EC	TPR-3CH 160H-EC	
Power voltage	Low	100 - 240 VAC						
	High	100 - 440 VAC						
Circuit power	Input voltage	24 VDC						
	Current consumption	208 mA			458 mA			
	Power consumption	5 W			11 W			
Power frequency	50/60 Hz (common)							
Rated current		40 A	55 A	70 A	90 A	130 A	160 A	
Applying load	Resistive load							
Control method	Phase control, Fixed Cycle control, Variable Cycle control							
Movement type	SOFT START / DOWN							
Output voltage	More than 98 % of the power supply voltage (in case of maximum current input)							
Cooling method	Forced cooling							
Display method	Output display by LED							
Insulation resistance	Min 100 MΩ (Based on 500 VDC mega)							
Output control range	0 ~ 100 %							
Dielectric strength	3,000 VAC 50/60 Hz for 1 min							
Line noise	Noise by noise simulator (2,500 V)							
Ambient temperature	0 ~ 40 °C (no condensation)							
Ambient Humidity	30 ~ 85 % RH							
Storage temperature	-25 °C ~ 70 °C							
Approval	CE							
Weight(g)		4,324		9,194		9,288		




Suffix code (TPR-3CH-EC)

Model	Code	Content
TPR-3CH	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Slim type 3-phase power regulator
Rated load current	040	40 A
	055	55 A
	070	70 A
	090	90 A
	130	130 A
	160	160 A
Rated load voltage	L	100 - 240 VAC (Low)
	H	100 - 440 VAC (High)
Operation type	EC	EtherCAT Communication control

* Circuit and fan need 24 VDC voltage power separately.

Type	Slim Type Single-Phase Thyristor Power Regulators	Slim Type 3-Phase Thyristor Power Regulators
Model	TPR-2SL	TPR-3SL
Appearance		
Features	<ul style="list-style-type: none"> Alarm output divided into caution and warning Several Control types available depending on load Several protection functions (partial heater break, overcurrent, heat sink overheating, SCR short circuit, etc) Improved safety by of circuit power supply and load power supply separation (free voltage circuit) 	<ul style="list-style-type: none"> The slimmest type among 3-phase thyristor power regulators under the same rating (110 mm) The heat sink excellent design and several protection circuits provide high durability. Improved safety with the separation of circuit power supply and load power supply Several alarm functions (heater break, load imbalance, heat sink overheating, overcurrent, etc.)
Power voltage	100 - 240 VAC, 380 - 440 VAC	100 - 240 VAC, 380 - 440 VAC
Rated current	25A, 40A, 55A, 70A, 90A, 110A, 130A, 160A, 200A	40A, 55A, 70A, 90A, 130A, 160A
Control type	Phase control, cycle control, ON/OFF control (dip switch selection)	Phase control, fixed cycle control, variable cycle control, ON/OFF control

Type	Small Type Single-Phase Thyristor Power Regulators		Small Type 3-Phase Thyristor Power Regulators
Model	TPR-2G	TPR-2M	TPR-3M
Appearance			
Features	<ul style="list-style-type: none"> Slim size Economical price Compatible with TPR-2N Phase control, cycle control internal selection Various alarm check function (50A / 70A only) 	<ul style="list-style-type: none"> Several protection functions (heater break, overcurrent, heat sink overheating, SCR short circuit, etc) Improved safety by of circuit power supply and load power supply separation (free voltage) SOFT START (60 sec), SOFT UP/DOWN (15 sec) Status indication with 4 LEDs 	<ul style="list-style-type: none"> 110 mm (width) small 3-phase slim type thyristor power regulators Improved safety with the separate power supply 4 LEDs to check operation status and alarm Several alarm functions. "Caution" and "warning" alarm separation.
Power voltage	220 VAC, 380 VAC	100 - 240 VAC, 100 - 440 VAC	100 - 240 VAC
Rated current	25 A, 35 A, 50 A, 70 A	25 A, 35 A	25A, 45A
Control type	Phase control (standard) Fixed cycle control (optional) Variable cycle control (optional)	Phase control (standard), Variable cycle control (optional)	Phase control Fixed cycle control (optional) Variable cycle control (optional)

Type	Single-Phase Thyristor Power Regulators	3-Phase Thyristor Power Regulators	
Model	TPR-2M	TPR-3N	TPR-3
Appearance			
Features	<ul style="list-style-type: none"> Maximum output voltage setting by gradient setting Several input signals Phase control/cycle control internal selection 	<ul style="list-style-type: none"> Status indication with 9 LEDs Several protection functions Soft start / Soft up / Soft down Fast fuse built-in 	<ul style="list-style-type: none"> Status indication with 9 LEDs Several alarm functions Soft start & Soft down Fast fuse built-in
Power voltage	100 - 240 VAC, 380 VAC, 440 VAC	220, 380, 440 VAC	
Rated current	25 A, 35 A, 50 A, 70 A	35A, 50A, 60A, 70A, 100A	70A, 100A, 150A, 200A, 250A, 320A, 500A, 600A
Control type	Phase control, fixed cycle control, variable cycle control, ON/OFF control	Phase control, ON/OFF control	Phase control, ON/OFF control, cycle control

SSR-2B/2C



2 contactos / bimetálico 3 contactos

- ▶ Ancho 38mm, cuerpo angosto
- ▶ Salida de alarma por contacto B
- ▶ Protección por sobrecalentamiento por medición de 60 y 80 °C degree



Specifications

Model		3 contacts	SSR-2B252Z	SSR-2B402Z
		2 contacts	SSR-2C252Z	SSR-2C402Z
Load	Operating load voltage	90 - 264 VAC		
	Peak voltage (non-repetition)	600 V		
	Rated load current	25 A	40 A	
	Frequency	50/60 Hz (dual usage)		
	Surge current (8.3 ms non-repetition)	260 A	420 A	
	Leakage current	Max. 10 mA		
	Output ON voltage drop	3 contacts	Max. 2.5 V (RMS)	
	2 contacts	Max. 1.8 V (RMS)		
Input	Rated voltage (circuit voltage)	3 contacts	24 VDC	
		2 contacts	None	
	Operating voltage range	4 - 32 VDC		
	Impedance	Max. 4 kΩ		
	Reset voltage	Max. 1.5 VDC		
Response speed	Max. 1/2 Cycle + 1 ms			
Insulation resistance	500 VDC 100 MΩ (input/output and among cases)			
Dielectric strength	2,500 VAC (60 Hz for one minute)			
Vibration resistance	10 -55 Hz, double amplitude: 1.5 mm, each X·Y·Z axis for 2 hours			
Shock resistance	1,000 %, each X·Y·Z axis for 3 times			
Storage temperature	-30 ~ 90 °C			
Ambient temperature	-20 ~ 80 °C (without condensation)			
Ambient humidity	45 ~ 85 % RH			
Applied standard	IEC 62314			
Load Category	LC A			
IP Degree	IP20			
Pollution degree	2 Rating			
Weight(g)	670		900	

Suffix code

Model	Code	Content
SSR-2	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Solid State Relay
Phase	2	Single-Phase
Contact	B	Bimetal input 3 contacts
	C	2 contacts
Rated load current	25	25A
	40	40A
Operating load voltage	2	90 - 264 VAC
Operation method	Z	Zero-cross switching

SSR-3F



Relevador de estado sólido con varias funciones

- ▶ Detección de sobre-corriente
- ▶ Detección de fase de carga abierta
- ▶ Varias funciones:
Alarma por falla ventilador, Ruptura de carga, Alarma por desbalance de carga, Alarma por ruptura de SCR
- ▶ Realización de control preciso por intercalado de cruce cero (opcional)







Specifications




Model	SSR-3F252Z	SSR-3F352Z	SSR-3F452Z
Used load voltage	90 - 264 VAC		
Peak voltage (non-repeating)	600 V		
Rated load current	25 A	35 A	45 A
Power frequency	50/60Hz (Dual usage)		
Input current (8.3 ms non repetition)	220 A	330 A	450 A
Applied load	Resistive load		
Leakage current	10 mA or less		
Output ON voltage drop	1.8 V (R.M.S.) or less		
Input	Rated voltage (circuit voltage)	24 VDC 4W	
	Operating voltage range	7 - 32 VDC	
	Impedance	4 kΩ or less	
Response speed	1/2 Cycle + 1 ms max.		
Insulation Resistance	500 VDC 100MΩ		
Withstand voltage	1 minute at 2,500 VAC 50/60 Hz		
Vibration	10 - 55 Hz, Double amplitude: 1.5mm, X, Y, Z 2 hours in each axis direction		
Impact resistance	1,000 % _g , X · Y · Z 3 times in each axis direction		
Storage temperature	-30 ~ 90 °C		
Operating ambient temperature	-20~80 °C(without condensation)		
Ambient humidity	45~85 % R.H.		
Weight (g)	1,800		

Suffix code


Model	Code	Content
SSR-3F	<input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/>	Three-phase function type contactless relay
Rated load current	25	25 A
	35	35 A
	45	45 A
Rated load voltage	2	90 - 264 VAC
Operation type	Z	Zero cross switching

Solid State Relays



Type	Single-Phase Solid State Relays		3-Phase Solid State Relays	
Model	SSR-2	HSR-2	SSR-3	HSR-3
Appearance				
Features	<ul style="list-style-type: none"> Terminal protection cover for safety Two types of load voltage (Low voltage 90 -264 VAC / High voltage 90 - 480 VAC) Operation check by operation indicator (red LED) Zero cross switching/ random switching 	<ul style="list-style-type: none"> Load voltage 90 - 264 VAC / 90 - 480 VAC High insulation between input and output High reliability as non-contact C-R Snubber, Zero cross switching 	<ul style="list-style-type: none"> Terminal protection cover for safety Two types of load voltage (low voltage 90 -264 VAC / high voltage 90 - 480 VAC) Operation check by operation indicator (red LED) Zero cross switching / random switching 	<ul style="list-style-type: none"> Load voltage 90 - 264 VAC / 90 - 480 VAC High insulation between input and output High reliability as non-contact C-R Snubber, Zero cross switching
Input voltage	4.6 - 32 VDC, 70 - 264 VAC	4 - 32 VDC, 90 - 264 VDC	4.6 - 32 VDC, 70 - 264 VAC	4 - 32 VDC, 90 - 264 VDC
Rated load current	10 A, 20 A, 30 A, 40 A	10 A, 20 A, 30 A, 40 A, 50 A, 70 A	10 A, 20 A, 30 A, 40 A	10 A, 20 A, 30 A, 40 A, 50 A, 70 A
Load voltage	90 - 264 VAC, 90 - 480 VAC			

Type	Slim Type Single-Phase Solid State Relays	2-Wire Cutoff Solid State Relays	Slim Type 3-Phase Solid State Relays
Model	HSR-SL	HSR-2SLD / SE	HSR-3SL
Appearance			
Features	<ul style="list-style-type: none"> 22.4 mm Slim Type Load voltage 90 - 264 VAC/90 - 480 VAC High insulation between input and output C-R Snubber, Zero cross switching Improved safety and working convenience with the heat sink one-body type. 	<ul style="list-style-type: none"> Status indication with several LED displays Control each phase simultaneously with the 2-wire disconnection function When the temperature of heat sink is 60 °C / 80 °C, the alarm output works and operation stops Improved safety and working convenience with the heat sink one-body type (din rail is available). It has the mandatory functions required from FPD industry 	<ul style="list-style-type: none"> Din rail installation type Improved safety and working convenience with the heat sink one-body type Can be installed in small spaces with the small design It is the slimmest type among the 3-phase solid state relays under the same rating (79 mm)
Operating voltage range	4 - 32 VDC		
Rated load current	15A, 25A, 40A	25A, 40A	15A, 25A, 40A
Load voltage	90 - 264 VAC, 90 - 480 VAC		

Solid State Relays

Type	Single-Phase Solid State Relays For PCB Substrate
Model	HSR-PD
Appearance	
Features	<ul style="list-style-type: none"> Load voltage 90 - 240 VAC High insulation between input and output Compact, lightweight, with large capacity High reliability as non-contact Zero cross switching
Input voltage	4 - 32 VDC
Rated load current	3A, 5A
Load voltage	90 - 240 VAC

Power Supplies

Type	DIN Rail Type Power Supplies	Enclosed type Power Supplies
Model	DPS	TPS
Appearance		
Features	<ul style="list-style-type: none"> 35 mm width DIN Rail installation method Low output voltage fluctuation High efficiency and low heat generation Equipped with DC OK signal relay output Overcurrent, overvoltage, overheating protection functions Wide product range from 15W to 240W Output ON indication (LED) Input voltage 100 - 240 V free voltage or 110/220 V automatic selection 	<ul style="list-style-type: none"> Input inrush current limit Output voltage adjustable volume CE certification Overcurrent/overvoltage/ short circuit protection/ overheating protection
Power output	1output: 15 W, 30 W, 50 W, 75 W, 100 W, 120 W, 180 W, 216W, 240 W 2output: 15 W, 30 W, 50 W, 75 W, 100 W	55 W, 100 W, 150 W, 220 W, 230 W, 350 W, 450 W
Input voltage	100 - 240 VAC, 100 - 120 VAC / 200 - 240 VAC	
Output voltage	5 V, 12 V, 15 V, 24 V, 48 V	5 V, 12 V, 15 V, 24 V, 48 V, 24/05 V, 24/12 V, 24/24 V
Voltage fluctuation range	± 5 ~ 10 % (according to internal VR)	
Protection circuit	Overcurrent, overvoltage, overheating, output short-circuit protection	
Dielectric strength	2700 VAC for 1 min (Input - Output)	

Serie PB

Realización de anti-ruido excelente y minimización de efecto por disturbio de luz

- ▶ 25.4mm hueco de montaje estandar ▶ Fuerte protección de circuito
- ▶ VR de fábrica para ajuste de sensibilidad
- ▶ Selección de modo de operación por VR
- ▶ Nuevo chip ASIC de Hanyoung Nux (Estabilidad de operación, detección de larga distancia)






Specifications




Model	NPN	PB-T7N	PB-T10RN	PB-T15N	PB-M3RN	PB-P3RN	PB-R01N	PB-R04RN	PB-R1N	PB-D04N
	PNP	PB-T7P	PB-T10RP	PB-T15P	PB-M3RP	PB-P3RP	PB-R01P	PB-R04RP	PB-R1P	PB-D04P
Appearance										
Sensing mode	Through-beam				Retro-reflective	Retro-reflective (polarized mirror)	Diffuse - reflective			Distance-settable
Detecting object	Opaque object (over Ø12 mm)				Opaque object (over Ø75 mm)		White non-glossy paper (100 x 100 mm)			
Hysteresis	None						Max. 20% of sensing distance			
Operation mode	Light ON / Dark ON mode switching selection byVR									
Sensing distance	7 m	10 m	15 m	0.1 - 3 m (when using HY-M5) / 0.1 - 4 m (when using HY-M5S)			100 mm	400 mm	1 m	400 mm
Response time	Max. 1 ms									
Sensitivity adjustment	VR built-in									
Power voltage	12 - 24 VDC ± 10 % (Ripple max. 10 %)									
Current consumption	Emitter	Max. 20 mA			Max. 30 mA					
	Receiver	Max. 15 mA								
Light source (wavelength)	Infrared LED (850 nm)	Red LED	Infrared LED (850 nm)	Red LED			Infrared LED (850 nm)	Red LED	Infrared LED (850 nm)	
Control output	Load Current: max. 100mA (26.4 VDC) Residual voltage: max. 1 V									
Protection circuit	Power reverse protection circuit, output reverse protection circuit, output short circuit protection circuit, mutual interference prevention function (through-beam type excluded), output short circuit notification (emitter part excluded)									
LED Indicator	Red LED: operation indicator, green LED: stability indicator (however, the red LED of the emitter displays the power only)									
Insulation resistance	Min. 20 MΩ (500 VDC mega standard)									
Dielectric strength	1000 VAC 50/60 Hz for 1 min									
Vibration resistance	10 - 55 Hz, double amplitude: 1.5 mm, X·Y·Z each direction 2 hours									
Shock resistance	500 m/s², X·Y·Z each direction 3 times									
Ambient illumination	● Sunlight: max. 11000 lx ● Incandescent lamp: max. 3000 lx									
Ambient temperature & humidity	● During operation: -20 ~ 60 °C ● During storage: -25 ~ 70 °C, 35 ~ 85 % RH (without condensation or icing)									
Noise immunity	Square wave noise by noise simulator (pulse width 1 μs) ±240 V									
Degree of protection	IP65 (IEC 60529)									
Accessories	Bracket A, Bracket B, Bracket C									
Approval	CE									




Suffix code

Model	Code	Content
PB-	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	General Purpose Photo Sensor
Sensing mode and distance	T 7	7 m
	T 10	10 m
	T 15	15 m
	M 3	3 m
	P 3	3 m
	R 01	0.1 m
	R 04	0.4 m
	D 04	0.4 m
Light source		Infrared (IR)
	R	Red light
Output	N	NPN open collector output
	P	PNP open collector output




Photo Sensor

Type	Amplifier Built-In Photo Sensors	Flat Photo Sensors	Long Distance Detection Photo Sensors
Model	PLD	PY series	PEN series
Appearance			
Features	<ul style="list-style-type: none"> Power reverse connection and output short circuit protecting circuit built-in Diffuse-reflective type with 2 m of sensing distance 1 ms response time Sensitivity adjustment volume built-in IP64 (IEC 60529) degree of protection 	<ul style="list-style-type: none"> Light ON / Dark ON mode switching selection by control wire Power reverse connection and output short circuit protecting circuit built-in Convenient installation with the ultra slim size 1 ms response time Control output and stable output display 	<ul style="list-style-type: none"> Long distance detection IP64 (IEC 60529) degree of protection Stability indication
Power voltage	12 - 24 VDC		24 - 240 VAC/DC
Sensing mode	Diffuse-reflective	Through-beam	Through-beam, Diffuse-reflective, Retro-reflective
Sensing distance	2m	3 m	10 m, 0.1 - 5 m, 700 mm
Operating mode	Light ON	Light ON, Dark ON	
Response time	Max. 1 ms		Max. 20 ms
Approval	IP64	IP67	IP64

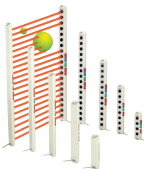

Type	Light ON, Dark ON Voltage Output Photo Sensors	Round Photo Sensors	U-Shaped Fast Response Photo Sensors
Model	PN series	PR series	PU series
Appearance			
Features	<ul style="list-style-type: none"> Power reverse connection and output short circuit protecting circuit built-in Motion display light attached Sensitivity adjustment volume attached Light ON/ Dark ON selectable by external wire 	<ul style="list-style-type: none"> Degree of protection IP66 (IEC 60529), round structure Output cutoff over current protecting circuit built-in Sensitivity adjustment volume attached Light ON /Dark ON selection 	<ul style="list-style-type: none"> Optic axis control not needed Solid die casting case Sensitivity adjustment volume attached Sensing distance 30/50 mm Operating mode selection by power polarity reverse connection
Power voltage	12 - 24 VDC		
Sensing mode	Through-beam, Diffuse-reflective, Retro-reflective		Through-beam
Sensing distance	3 m, 0.1 - 1 m, 200 mm	10 m, 0.1 - 1 m, 0.1 - 2 m, 300 mm	30 mm, 50 mm
Operating mode	Light ON, Dark ON		
Response time	Max. 3 ms	Max. 1.5 ms	Max. 1 ms
Approval		IP66	IP65

Type	Power /Amplifier Built-In Photo Sensors	Power Built-In Photo Sensors	Distance-settable Photo Sensors
Model	PTX series	PE series	PL-D2B
Appearance			
Features	<ul style="list-style-type: none"> Terminal block type connection for convenient wiring Wide power voltage range (24 - 240 VAC / DC, 12 - 24 VDC) Timer function available NPN/PNP open collector simultaneous output with DC power IP66 (IEC 60529) waterproof structure 	<ul style="list-style-type: none"> Cost-effective Wide power voltage Relay output Operation status indication attached Lower impact of dust with the flat lens 	<ul style="list-style-type: none"> Distance setting reflective type by 2 split photo diodes Almost no influence of the amount of light change with the distance detection method by light angle Applicable in several fields with the long detection distance (2m) IP65 (IEC 60529) protective circuit
Power voltage	24 - 240 VAC/DC	24 VDC, 100 - 240 VAC/DC	12 - 24 VDC
Sensing mode	Through-beam, Diffuse-reflective, Retro-reflective		Distance-settable
Sensing distance	15 m, 7 m, 1 m	5 m, 0.1 - 3 m, 500 mm	0.2 - 2 m
Operating mode	Light ON, Dark ON		
Response time	Power built-in type: max. 20 ms Amplifier built-in type: max. 1 ms	Max. 25 ms	Max. 2 ms
Approval	IP66	IP54	IP65





■ Fiber Optic Sensors

Type	Fiber Optic Sensors		Multi-Function Digital Fiber Optic Sensors
Model	PG series	PFB	PFD
Appearance			
Features	<ul style="list-style-type: none"> Applicable to any application with the AMP unit 4 type and several fiber unit types. Easy to install to a 35 mm wide DIN rail, so less installing space is needed. 	<ul style="list-style-type: none"> Sensitivity setting by auto-teaching Light volume indication by Bar LED External teaching input/external synchronous input Output delay time (40 ms fixed) Mutual interference prevention, power revers connection protection, output short circuit protection Light ON/ Dark ON selection by slide switch 	<ul style="list-style-type: none"> Sensitivity setting by auto-teaching 7-Segment 4-digit LED display Mark detection/ counter / tachometer functions (multi-type) Output delay time setting (1 ~ 9999 ms)
Power voltage	12 - 24 VDC		
Sensing mode	Through-beam, Diffuse-reflective		
Sensing distance	By fiber optic cable		
Operating mode	Light ON , Dark ON		
Response time	Max. 1 ms		RM: max. 1 ms, RG: max. 0.7 ms
Approval	IP40	IP40	IP40





■ Area sensors

Type	Area Sensors	Area Sensors Equipped With An Exclusive IC
Model	PAS series	PAN series
Appearance		
Features	<ul style="list-style-type: none"> Less installation space (thickness: 13.5 mm, width : 30 mm) Automatic sensitivity correction function built-in Mutual interference prevention function built-in Minimum sensing object (Ø30 mm) 	<ul style="list-style-type: none"> Several optical axis distances (20/40 mm) Mutual interference prevention function built-in Output short circuit protection circuit built-in Operating mode selection (all optical axes/1optical axis light ON)
Power voltage	12 - 24 VDC	
Sensing mode	Through-beam	
Sensing distance	5 m	7 m
Operating mode	Output ON operation during light ON of all optical axes (output OFF operation during dark ON of 1 optical axis or more)	Emitter: M/S operation selection (mutual interference prevention setting) Receiver: A mode (light ON of all optical axes)/ O mode (light ON of 1 optical axis)
Response time	Max. 7 ms	Max. 7 ms, max. 15 ms
Approval	IP40	IP65





■ Proximity Sensors

Type	Inductive Round Type Proximity Sensors	Inductive Square Type Proximity Sensors	Inductive Flat Type Proximity Sensors	Capacitive Type Proximity Sensors
Model	UP□R series	UP□S series	UP□F series	CUP series
Appearance				
Features	<ul style="list-style-type: none"> World's first exclusive IC for C-MOS Wide operating voltage (5- 35 VDC : DC 3-wire) Noise resistant reinforced circuit 2-wire type nonpolar applied 	<ul style="list-style-type: none"> World's first exclusive IC for C-MOS Wide operating voltage (5-35 VDC : DC 3-wire) Noise resistant reinforced circuit 2-wire type nonpolar applied 	<ul style="list-style-type: none"> World's first exclusive IC for C-MOS Wide operating voltage Noise resistant reinforced circuit 2-wire type proximity nonpolar applied It can be installed directly on metal surfaces 	<ul style="list-style-type: none"> Noise resistant reinforced circuit Leakage current less than 2 mA Operating Voltage 12 - 240 VAC/DC (2-wire)
Power voltage	100 - 240 VAC, 12 - 24 VDC			10 - 240 VAC/DC, 12 - 24 VDC
Shield	Shield, Non shield	-		Non shield
Sensing distance	1.5, 2, 4, 5, 7, 8, 10, 14, 15, 25 mm	2, 4, 5, 8, 10,12,15,20 mm	8 mm	8,15 mm
Approval	IP67			

■ Sensor Controllers

Type	Universal	High function (timer)	2 built-in sensors for connection	Sensor Controllers
Model	HPAN-C7	HPAN-CT7	HPAN-C7W	HPA-12
Appearance				
Features	<ul style="list-style-type: none"> · Contact/contactless, 2 outputs built-in (HPAN-C7, HPAN-CT7) · For connecting 2 sensor · Corresponds to DIN rail 			<ul style="list-style-type: none"> · NPN/PNP dual usage input sensor controller · Solid output contact (250 V 3 A, more than 100,000 times). · Convenient installation with plug in method
Power voltage	100 - 240 VAC 50/60 Hz) ±10%			220 VAC
Functions	2 inputs 1 output		2 inputs 2 outputs	Universal
Power consumption	Approx. 5 VA			Approx. 4 VA
External output power	12 VDC (± 10 %), load current: max. 200 mA			12 VDC, ± 10 %, max. 50 mA
Output	OUT 1		OUT 1, OUT 2	Relay 1c, 250 VAC, 3A (resistive load)
	Relay 1 c, 250 VAC, 3A (resistive load) ※ HPAN - C7W (1 c X 2 relay contact)			
Contactless	NPN open collector 30 VDC, max. 200 mA		-	Relay 1c, 250 VAC, 3A (resistive load)

■ Rotary Encoders

Type	Ø30, Ø40, Ø50 Shaft Type	Ø40 Hollow Shaft Type	Ø40 Blind Shaft Type	Wheel Type
Model	HE30B, HE40B, HE50B	HE40H	HE40HB	PSC
Appearance				
Features	<ul style="list-style-type: none"> · Wide power voltage (5 - 12 / 12 - 24 VDC) · Several output specifications · Convenient installation structure 	<ul style="list-style-type: none"> · Wide power voltage (5-12/12-24 VDC) · Several output specifications · Convenient installation structure 	<ul style="list-style-type: none"> · Wide power voltage (5 - 12 / 12 - 24 VDC) · Several output specifications · Convenient installation structure 	<ul style="list-style-type: none"> · The wheel type detection structure is suitable for length and speed measurement · Several measuring units (6 types) · Cost-effective · Convenient installation structure
Power voltage	5 -12 VDC ±5 %,12 -24 VDC ±5 %			
Output phase difference	Phase difference between A, B phases: $T/4 \pm T/8$ (1 cycle of A phase=T)			
Response time	Max. 1 μ s			
Number of pulses	1, 2, 5, 10, 12, 15, 20, 25, 30, 40, 45, 50, 60, 75, 100, 120, 125, 150, 192, 200, 240, 250, 256, 300, 360, 400, 500, 512, 600, 800, 1000, 1024			According to the minimum measured length



Serie DR

Ø16, Ø22 Mini interruptores de control

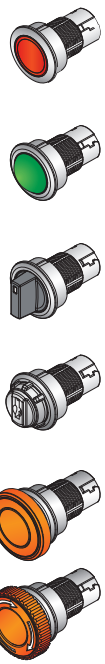
- ▶ Contacto 1a1b en una pieza
- ▶ Larga vida con fuente de luz brillante LED
- ▶ Tipo de Ensamblado (Actuador y contacto)



Actuador

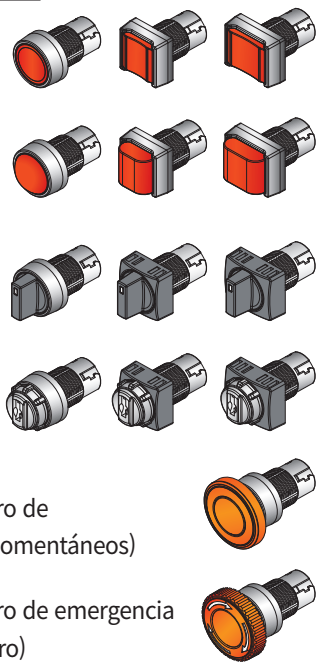
Rasante (Ø22)

- 1 Botones
- 2 Luz piloto
- 3 Selectores
- 4 Selectores de llave
- 5 Botones de paro de emergencia (Momentáneos)
- 6 Botones de paro de emergencia (Retorno por giro)

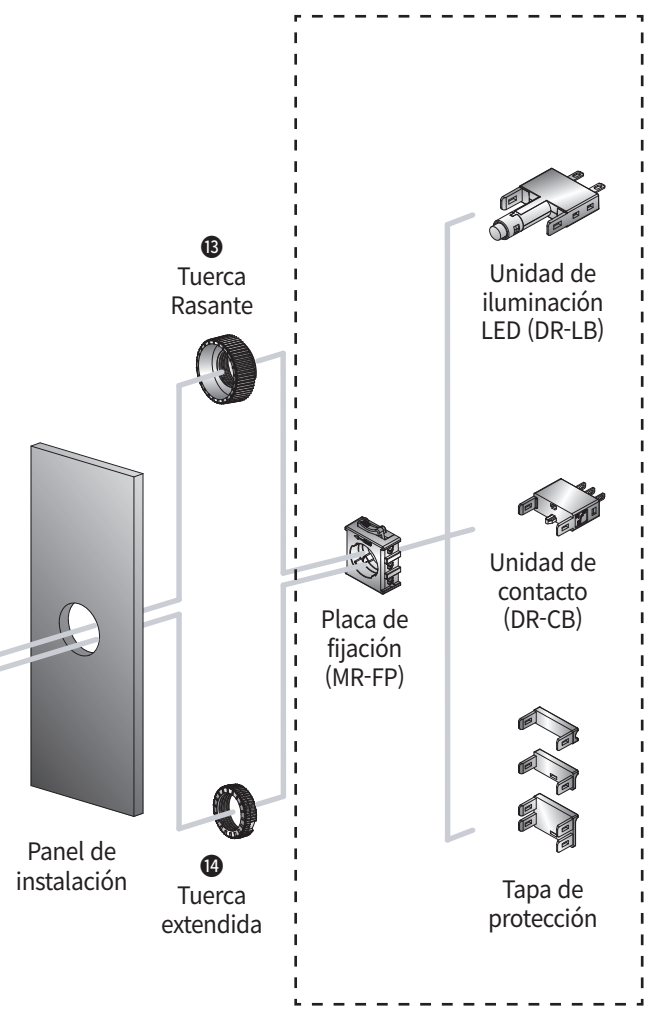


Extended (Ø16)
Square (Ø16)
Rectangular (Ø16)

- 7 Botones
- 8 Luz piloto
- 9 Selectores
- 10 Selectores con llave
- 11 Botones de paro de emergencia (Momentáneos)
- 12 Botones de paro de emergencia (Retorno por giro)



Partes de Contacto



Suffix code

Model	Code	Description
DRF -	<input type="checkbox"/>	Botón
DRX -	<input type="checkbox"/>	Botón iluminado
DRP -	<input type="checkbox"/>	Luz piloto
DRS -	<input type="checkbox"/>	Selector
DRT -	<input type="checkbox"/>	Selector iluminado
DRK -	<input type="checkbox"/>	Selector con llave
DRE -	<input type="checkbox"/>	Botón de paro de emergencia
DRA -	<input type="checkbox"/>	Botón de paro de emergencia iluminado
Actuador	A	Ø22 Rasante
	R	Ø16 Extendido
	K	Ø22 Rasante
	T	Ø16 Extendido
	S	Ø16 Cuadrado
	O	Ø16 Rectangular
		Guarda cromada
		Guarda de plástico

Serie CR



Ø25, Ø30 Interruptores de Control Económicos

- ▶ Contacto 1a1b en una pieza
- ▶ Larga vida con fuente de luz brillante LED
- ▶ Tipo de Ensamblado (actuador y contacto)
- ▶ Alta confiabilidad de contacto
- ▶ Peso reducido



Suffix code

Model	Code	Description
CRF -	<input type="checkbox"/>	Botón
CRX -	<input type="checkbox"/>	Botón iluminado
CRP -	<input type="checkbox"/>	Luz piloto
CRS -	<input type="checkbox"/>	Selector
CRT -	<input type="checkbox"/>	Selector iluminado
CRK -	<input type="checkbox"/>	Selector con llave
CRE -	<input type="checkbox"/>	Botón de paro de emergencia
CRA -	<input type="checkbox"/>	Botón de paro de emergencia iluminado
CRB-	<input type="checkbox"/>	Bocina
Actuador	F30	Ø30 Rasante
	P30	Ø30 Extendido
	G30	Ø30 Guía protectora
	F25	Ø25 Rasante
	P25	Ø25 Extendida
	G25	Ø25 Guía protectora

Actuador

Partes de contacto

3 Botones
(illuminate/non-illuminate, alternate)

4 Botones
(illuminate/non-illuminate, alternate)

5 Luz piloto

6 Selector de manija corta
(illuminate/non-illuminate)

7 Selector de manija larga
(illuminate non-illuminate)

8 Selector de llave

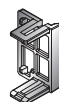
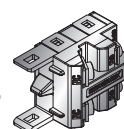
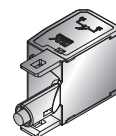
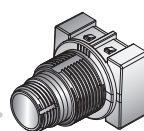
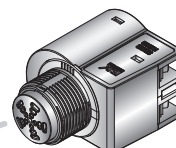
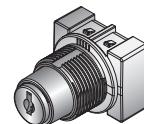
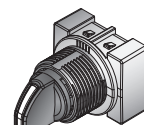
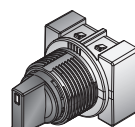
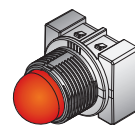
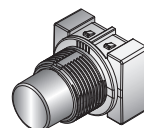
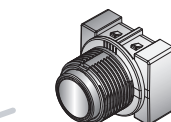
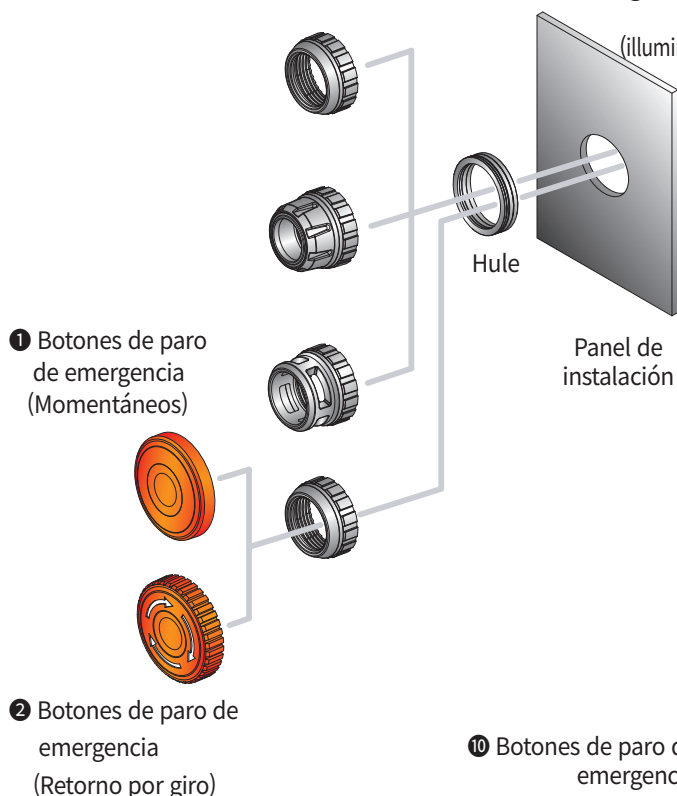
9 Bocina

10 Botones de paro de emergencia

LED Illuminated unit (CR-LB)

Unidad de contacto (CR-CB)

Tapa protectora



Tapa protectora

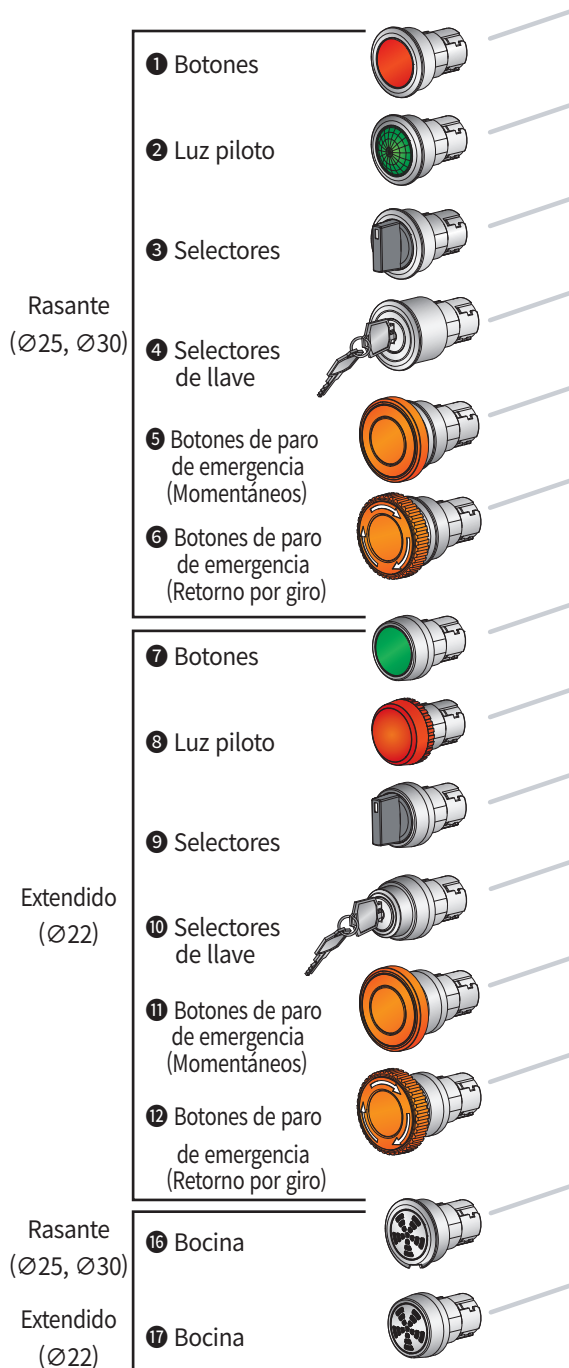
Serie MR

Ø22, Ø25, Ø30 Interruptores de control de alta calidad

- ▶ Doble acción snap break abrir / cerrar contactos
Con función de autodiagnóstico para una alta fiabilidad de contacto.
- ▶ Alto brillo y durabilidad con la luz LED.
- ▶ 3 protectores de aluminio y 2 protectores de plástico.
proporcionar amplias posibilidades de configuración
- ▶ Tipo de montaje (actuador y piezas de contacto)



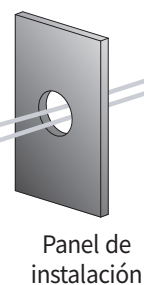
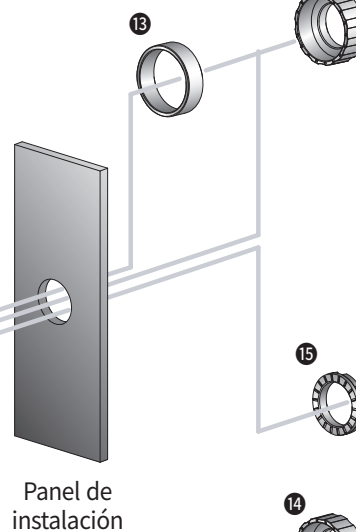
Actuador



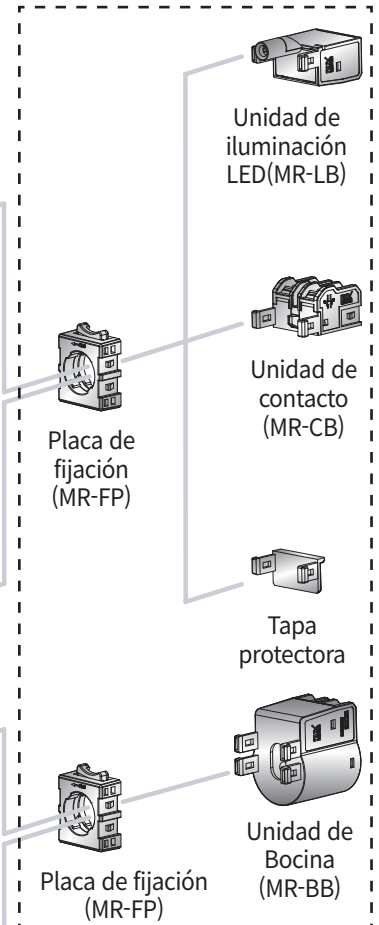
13 Presión (selector de llave)

14 Tuerca Rasante

15 Tuerca extendida





Contact parts



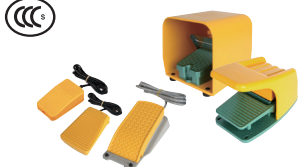
Suffix code

Model	Code	Description
MRF -	<input type="checkbox"/>	Botón
MRX -	<input type="checkbox"/>	Botón iluminado
MRP -	<input type="checkbox"/>	Luz piloto
MRS -	<input type="checkbox"/>	Selector
MRT -	<input type="checkbox"/>	Selector iluminado
MRK -	<input type="checkbox"/>	Selector con llave
MRE -	<input type="checkbox"/>	Botón de paro de emergencia
MRA -	<input type="checkbox"/>	Botón de paro de emergencia iluminado
MRB -	<input type="checkbox"/>	Bocina
Actuator	A	Ø30 Rasante
	N	Ø25 Rasante
	R	Ø22 Extendido
	K	Ø25 Rasante
T	Ø22 Extendido	Guarda de plástico


Power Switches

Type	Power Switches	
Model	HY-500	BE
Appearance		
Features	<ul style="list-style-type: none"> · Directly turn ON/OFF the power of compact electric motor · Exposed type/flush type, plastic/cold rolled steel case · Push buttons for turning ON/OFF electric motors (forward, reverse operations) · Lamp power ON/OFF switch mounting type · Electrical appliances safety certification 	<ul style="list-style-type: none"> · Directly turn ON/OFF the power of compact electric motor · Exposed type/flush type, plastic/cold rolled steel case · Push buttons for turning ON/OFF electric motors (forward, reverse operations) · Waterproof non-flammable ABS Plastic Case
Rated capacity	250 VAC 15A	440 V a.c 15 ~30 A
Display legends	ON, OFF, FOR, STOP, REV	
Case material	Cold rolled steel case, plastic	Cold rolled steel case, non-flammable ABS


Foot Switches

Type	Foot Switches
Model	HY-100
Appearance	
Features	<ul style="list-style-type: none"> · High mechanical safety with the aluminum case · Micro switch with excellent electrical reliability built-in · Protective cover from falling materials and safety latch lever attached . (HY-104) · Cable locker applied (HY-103, 104) · Cost-effective plastic case (HY-101)
Rated current	10 A 250 VAC
Foot switch materials	Plastic, aluminum
Contact structure	C Contact



Mono Lever Switches

Type	Mono Lever Switches
Model	LEL/LES
Appearance	
Features	<ul style="list-style-type: none"> · 4-direction switches that can operate 4 directions in a single lever · The lever tilting direction minimizes malfunctions during use and it is suitable for products that are frequently switched in direction. · There are auto returning, manual returning and mixed types depending on lever operation type. · The circuit configuration of the contact part is flexible and the installation cutout hole is Ø30.
Rated insulation voltage	600 V
Rated electric current	3 A 250 VAC
Dielectric strength	2,500 VAC for 1 min


Pendant Switches

Type	Pendant Switches
Model	HY-P series
Appearance	
Features	<ul style="list-style-type: none"> · Easy wiring and operation with the wire holder bending structure (15°) · Solidity improved with the thicker high impact ABS resin, and anti-slip structure · The wide internal wiring space makes wiring easier and more convenient · Several new features on-demand (LED, volume, toggle switch).
Degree of protection	IP65 (IEC 60529) (emergency switch type included)
Materials	Case: high impact ABS, Contacts: AgSnO2
Insulation resistance	Min. 100 MΩ (500 VDC)



Cam Switches





Type	Cam switches	
Model	HY-SQ5/255/305/MRK	SQ4
Appearance		
Features	<ul style="list-style-type: none"> ▷ HY-SQ5 /305/255 series · Several surfaces (square, Ø25 round, Ø30 round) · Switch-board switch A/S, V/S, C/S standard manufacturing product · Machine tools and electrical installation custom circuit configurations for every industry ▷ HY-MRK · Handle lock function by key lock · Rated current 20A, high capacity cam switches/ custom circuit configuratio 	<ul style="list-style-type: none"> · Small Cam switches (48(W) X 48(H) mm) · 2 operation handles (H type, R type) · Ammeter switch (AS), voltmeter switch (VS) · Small cam switches with several circuit configurations
Rated insulation voltage	600 V	690 VAC
Rated current	10 A	16A-24 VAC, 8A-48 VAC, 5A-110 VAC, 3A-220 VAC, 1.8A-380 VAC
Dielectric strength	2500 VAC for 1 min	

Main Switches




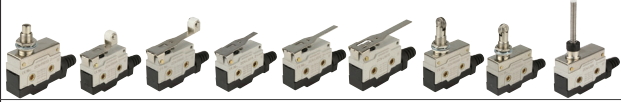
Type	Main switches
Model	MAS
Appearance	
Features	<ul style="list-style-type: none"> · Designed as rapid switching structure for excellent contact reliability · Lock ring applied in the OFF state · Handle and contact parts with detachable structure (MAS-025) · 2 color types of handle and handle guard (red/yellow and black/white) · Ø22, Ø30 (MAS-025), 4 holes fixed panel mounting · Clear indication of ON/OFF contact status (turning OFF the operation handle will block all contacts)
Rated insulation voltage	690 VAC
Rated current	25A, 63A, 125A
Materials	Non-flammable

Limit Switches

Type	Aluminum Die Casting	
Model	HY-M900	
Appearance	 	
Features	<ul style="list-style-type: none"> · Solid die casting case and 2 circuits double micro switch built-in · High mechanical intensity with the heat resistant, oil proof and dust protection structure · IP67 (IEC 60529) degree of protection (when using the company HYC-M1 connector in wire opening) · Check the operation state on the outside with the operation indicator 	
Open/close frequency	Mechanical: 120 times/min, electrical: 20 times/min	
Insulation resistance	Min. 100 MΩ (500 VDC)	
Dielectric strength	Among terminals: 1000 VAC 50/60 Hz for 1 min, Among unfilled metal parts: 1500 VAC 50/60 Hz for 1 min	

Type	Zinc Die Casting	Plastic Case
Model	HY-L800	HY-LS800
Appearance	 	 
Features	<ul style="list-style-type: none"> · Less installation space with the compact size · Zinc die casting body and plastic cover structure · 4 actuator types provide wide selection possibilities · Applicable to machine tools, transportation machines, assembling lines and several industrial machines 	<ul style="list-style-type: none"> · Compact size and lightweight with the plastic case · The plastic case is safe against electric leakage · 6 actuator types provide wide selection possibilities
Open/close frequency	Mechanical:120 times/min, electrical:30 times/min	
Insulation resistance	Min. 100 MΩ (500 VDC)	
Dielectric strength	Among terminals: 1500 VAC 50/60 Hz for 1 min, Among unfilled metal parts: 2000 VAC 50/60 Hz for 1 min	1000 VAC 50/60 Hz for 1 min, 2000 VAC 50/60 Hz for 1 min

Micro Switches

Type	Micro Switches	
Model	HY-700	ZCN-500
Appearance	 	 
Features	<ul style="list-style-type: none"> · Certain operation and long life with the snap action tool · Excellent repetitive accuracy and 10A open/close capacity · Standard type, installation hole gap: 25.4mm, fixed with M4 bolt · 9 actuator types provide wide selection possibilities · Terminal protective cover (optional) 	<ul style="list-style-type: none"> · Certain operation and long life with the beryllium copper and running spring to the strong chemically resistant resin case. · Compact, lightweight, with strong mechanical durability · 9 actuator types provide wide selection possibilities
Open/close frequency	Mechanical: 120 times/min, Electrical:20 times/min	
Insulation resistance	Min. 100 MΩ (500 VDC)	
Rated current	10A 250 VAC	

Serie HL



Diseñado para una amplia dispersión de luz

- ▶ Comodidad para una área limitada de trabajo
- ▶ Protegida de interferencia por un circuito de protección interno
- ▶ Económico por su SMPS sin aislar
- ▶ Paquete LED con IESNA (LG Innotek serie G3)





Specifications

Optical characteristics			
Model	HL-100	HL-200	HL-300
Lens color	Transparent	Transparent	Transparent
Light color (default)	Daylight color		
Color temperature (default)	6,000 ~ 7,000 K		
Rated lumen	DC	-	
	AC	509 lm	1044 lm
Light intensity (at 1 m)	DC	-	
	AC	205 lux	318 lux
Light efficiency	102 lm / W	109 lm/W	110 lm/W
General specifications			
Model	HL-100	HL-200	HL-300
LED model	LG Innotek G3 series (LEMWS59R80FZ) LM80 certification		
LED chip characteristics	Strong ESD durability through protection circuit with zener diode on LED chip internal circuit		
Product life (LED standard)	Min. 50,000 hours		
Rated voltage	220 VAC	220 VAC	220 VAC
Frequency	50/60 Hz		
Operating voltage range	100 - 240 VAC		
Current consumption (A)	-		
	0.023	0.046	0.046
Power consumption	-		
	5W	10W	10W
Dielectric strength	AC: 3,000 VAC, 60 Hz, 1 minute		
Color rendering	88	87	88
Reliability			
Experiment items	Experiment conditions		Results
Dielectric strength	AC: 3,000 V, 60 Hz, 1 minute		OK
Operating temperature	-20 °C ~ +60 °C		OK
ON/OFF repeated experiment	Repeatedly turning on and off 1,000 times every 3 seconds		OK
Aging test	Over 96 hours of operation with rated input		OK
Approval	CE		
Weight (g)	10.6 g	13 g	15 g




Suffix code



Model	Code					Content
HL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-	<input type="checkbox"/>	Basic type panel lamp
Size and output	1	0	0			5 W
	2	0	0			10 W
	3	0	0			10 W
	5	0	0			20 W
Input power type	A					110 / 220 VAC
	D					12 / 24 VDC

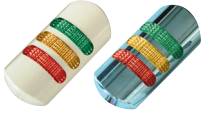

■ Combination Display Lights




Type	LED Square Indicators	LED Combination Display Lights
Model	CR40	CDN
Appearance		
Features	<ul style="list-style-type: none"> · Display surface size 40 X 32 mm · Bright LED light source · Convenient individual mounting, gathered / assembled mounting · Gathered / assembled mounting by the + appearance connector (die casting) 	<ul style="list-style-type: none"> · Display surface size 30(W) × 30(H) mm, 30 X 40 mm 2Type · High brightness square LED units · 6 indicating colors · Simple assembling. Able to change the colors on the spot · Max. 200 compositions (10 rows, 20 columns)
Power voltage	100 - 240 VAC, 380 VAC, 12 - 24 VDC	110 / 220 VAC, 24 VDC
LED display color	Red, green, yellow, blue, white	Red, green, yellow, white, orange, blue
Dielectric strength	1500 VAC for 1 min	2,000 VAC for 1 min



■ Sign Towers

Type	Ø25 Modular LED Sign Towers	Ø60 Modular LED Sign Towers	Ø55 Sign Towers
Model	STE025	STE060	HY-TN
Appearance			
Features	<ul style="list-style-type: none"> · Ø25 column type, suitable installation structure for small machines and narrow spaces · Long life with high brightness LED light source · Easy installation with pipe direct installation structure · Convenient configuration (number of stacks and colors) with the modular type 	<ul style="list-style-type: none"> · Long life with the high brightness LED light source · Simple structure from 1 to 5 stacks · Several mounting supporters · Convenient configuration (number of stacks and colors) with the modular type 	<ul style="list-style-type: none"> · Ø55 round type · 1~5 stacks and 5 color types
Functions	Continuous light only	Continuous light/flashing/buzzer models (selection by external signal)	
Diameter	Ø 25	Ø 60	Ø55
Supporter	L type bracket (sold separately)	Plastic round supporter, L type bracket, elbow type supporter (optional)	Plastic round supporter, L type bracket, elbow type supporter (optional), Plastic supporter with pipe connection
Rated voltage	24 VDC	24 VDC, 100 - 240 VAC 50/60 Hz	24 VDC, 220 VAC
Number of stacks & colors	1~3 stacks (red, green, yellow)	1~5 stacks (red, green, yellow, blue, white)	




Type	Ø25, Ø40, Ø60, Ø80 LED Sign Towers	Ø40, Ø60, Ø80 LED Sign Towers
Model	STL	STS
Appearance		
Features	<ul style="list-style-type: none"> · Long life with the high brightness LED light source · 1~5 stacks and 5 color types · Convenient installation with the aluminium pipe direct installation structure · Cost-effective, continuous light models with IP54 (IEC 60529) degree of protection 	<ul style="list-style-type: none"> · Long life with the high brightness LED light source · 1~5 stacks and 5 color types · 3 installation types
Functions	Continuous light/flashing/buzzer models (selection by external signal)	Continuous light only
Diameter	Ø25, Ø40, Ø60, Ø80	Ø40, Ø60, Ø80
Supporter	Plastic round supporter, L type bracket, elbow type supporter (optional)	Plastic round supporter, L type bracket, elbow type supporter (optional)
Rated voltage	24 VDC, 24 VDC/AC, 100 - 240 VAC 50/60 Hz	24 VDC/AC, 12 VDC/AC (order-made)
Number of stacks & colors	1~5 stacks (red, green, yellow, blue, white)	

Type	LED Wall Mounted Lights	
Model	WME	WMS
Appearance		
Features	<ul style="list-style-type: none"> · 3-color slim type, suitable for wall mounting · Long life with the high brightness LED light source · 2 body type: beige or chrome plated · Continuous light, flashing light, 2-melody buzzer built-in · Degree of protection IP54 (IEC 60529) 	<ul style="list-style-type: none"> · 1~5 stacks, suitable for wall mounting · Long life with the high brightness LED light source · 2 types of buzzer melodies (single melody/ beeping) · Continuous light, flashing light · Degree of protection IP54 (IEC 60529)
Rated voltage	24 VDC/AC, 12 VDC/AC (order-made)	
Functions	Continuous light · flashing · buzzers	
Number of stacks and colors	3 tiers Red, green, yellow	1~5 tiers Red, green, yellow, blue, white




Type	Signal Lights (Xenon)	Ø84 LED Signal Lights	Ø70 LED Signal Lights
Model	RLA-WX / WXB	LT	SLB
Appearance			
Features	<ul style="list-style-type: none"> · Ø118 Rotating continuous light only, rotating continuous light and buzzers built-in · Xenon tube strobe light · Excellent instant light emitting and high brightness · Less current consumption compares to the rotating light and 4 times longer life expectancy compared to the regular lamp · Simple attaching/detaching due to the permanent magnet attachment type (for cars) · Degree of protection IP54 (IEC 60529) 	<ul style="list-style-type: none"> · Rotational flickering function by the sequential flashing · Long life with the high brightness LED light source · Ø84 round cap, direct or supporter mounting · Acrylic cap for excellent visible light transmittance · Solid and smart design · Degree of protection IP54 (IEC 60529) 	<ul style="list-style-type: none"> · Continuous light, flashing light, buzzer (selection by external signal) · Long life with the high brightness LED light source · Select Ø70 round type cap, rectangular type cap, direct installation, supporter mounting installation · Cost-effective, simple installation structure · Solid polycarbonate protective cap · Degree of protection IP54 (IEC 60529)
Diameter	Ø118	Ø84	Ø70
Rated voltage	110 VAC, 220 VAC, 12 VDC, 24 VDC	12 - 24 VAC, 110/220 VAC, 12 - 48 VDC,	12 VAC / DC, 24 VAC / DC, 110 - 240 VAC
Functions	Rotating continuous light · buzzers	Rotating continuous light , flashing, buzzer built-in	Continuous light, flashing, buzzers (selection by external input signal)
Colors	Red, blue, white	Red, yellow, green, blue	Red, yellow, green

Type	Ø60 / Ø84 / Ø100 / Ø150 Revolving Warning Lights	Ø118 Revolving Warning Lights
Model	T series	RLA-KB / KBB
Appearance		
Features	<ul style="list-style-type: none"> · Ø60 / Ø84 / Ø100 / Ø150 rotating continuous light, rotating continuous light and buzzers · Several supporter mounting type · Cost-effective, simple installation structure · Solid polycarbonate protective cap · Rotational structure with the excellent abrasion resistive acetal gear · Degree of protection IP54 (IEC 60529) 	<ul style="list-style-type: none"> · Ø118 rotating continuous light / rotating continuous light and buzzer built-in · Incandescent lamp (BA 15S) · Used the special power transmitting plant, less noise and long life expectancy · Large size rotational reflector is built-in, excellent light reflection · Excellent attaching / detaching due to the permanent magnet attachment type (refer to the suffix code) · Degree of protection IP54 (IEC 60529)
Diameter	Ø60 / Ø84 / Ø100 / Ø150	Ø118
Rated voltage	110 VAC, 220 VAC, 12 VDC, 24 VDC	110 / 220 VAC, 12 VDC, 24 VDC
Functions	Rotating continuous light · buzzers	
Colors	Red, yellow, green, blue	Red, green, yellow


Buzzers

Type	Power Buzzers	4-Tone Buzzers	3-Tone Electronic Buzzers
Model	HY-256 / 306 / 606 / 606N	HY-606MD / MA	HY-226M / 256M
Appearance			
Features	<ul style="list-style-type: none"> Compact size, lightweight, high capacity buzzer melody Excellent alarm function Suitable for panel installation Low Power consumption 	<ul style="list-style-type: none"> 4 tones of melody selectable Compact, light weight, high capacity tones Low Power consumption and long life expectancy Simple installation structure with the panel installation type 	<ul style="list-style-type: none"> Compact, lightweight, with 3 melodies Front LED illuminates during buzzer operation Simple installation structure with the panel installation type Low Power consumption
Rated voltage	110 VAC, 220 VAC, 12 VDC, 24 VDC	12 / 24 VDC, 110 / 220 VAC	100 - 240 VAC, 12 - 24 VDC
Power consumption	4 VA, 8 VA, 30 mA	2.5 W	0.6 W, 13.5 W
Volume (1 m distance)	85 dB	Max. 98 dB	80 dB


Terminal Blocks

Type	Assembly Terminal Blocks		Fixing Type Terminal Blocks
Model	HYBT-15A2	HYTM	HYT
Appearance			
Features	<ul style="list-style-type: none"> DIN rail installation structure Possible to assemble the terminal block with different capacity to the same fixing plate Excellent attaching / detaching of terminal at the temporal position 	<ul style="list-style-type: none"> New design (simple and robust image) Contact protective structure for the terminal block live parts O-type and Y-type crimp terminal use more convenient with the screw self-up structure Din Rail one-touch assemblable and detachable structure (using slotted screwdriver during removal) 	<ul style="list-style-type: none"> Several polarities for each current capacity, easy selection Body made of phenolic resin (60 - 500 A) and ABS flame retardant resin (10 - 30 A) Because the bolt and plate underwent heat treatment and rust-proof treatment, it has excellent electrical and mechanical characteristics Standard product of rated current Simple installation
Rated insulation voltage	600 V		
Rated current	15A	15A, 25A, 35A, 60A, 100A	10A, 20A, 30A, 60A, 100A, 150A, 200A, 300A, 400A, 500A
Insulation resistance	Min. 100 MΩ (between each charging part and between each charging part and mounting metal plate)		


Fuse Holders

Type	Fuse Holders
Model	HY-F15 / HY-F30
Appearance	
Features	<ul style="list-style-type: none"> HY-F15 series <ul style="list-style-type: none"> LED continuous light indication during fuse disconnection / safety cover installation structure DIN rail and bolt fixing structure / Easy installation by 1P, 2P, 3P individual products HY-F30 series <ul style="list-style-type: none"> Body materials are made of NYLON66 with glass fiber and have excellent electrical insulation, strong against impact and heat The fuse comes out when replacing it, which provides excellent safety
Rated current	24 VDC 10 A, 250 VAC 15 A, 250 VAC 30 A
Remarks	110-220 VAC, 12-24 VDC, 110-600 VAC

Cable Connectors

Type	Cable Connectors
Model	HYC-M1 / HYC-M2
Appearance	
Features	<ul style="list-style-type: none"> Applied as waterproof and spinning-proof when extending the cable from many machine tools PF 1/2 cover fixing type nut Nut tightening structure by the seal rubber and stuffing washer
Materials	PC (resin)
Remarks	Ø8, Ø11

Control Boxes

Type	Rolled Steel Control Boxes
Model	HY-25 / HY-30
Appearance	
Features	<ul style="list-style-type: none"> Rolled iron and ivory color enamel painted Several operating switches attached (Ø20 and Ø30) Several specifications (1 ~ 6 holes)
Materials	Rolled steel
Remarks	Ø25, Ø30

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MAIN PRODUCTS

Temperature controllers / Recorders / Counters / Timers / Panelmeters / Multi pulse meters / Proximity sensors / Photo sensors / Rotary encoders / Thyristor power regulators / Solid state relays / Power supplies / Control switches / Combination display lights / Power switches / Main switches / Cam switches / Limit switches / Micro switches / Pendant switches / Foot switches / Mono lever switches / Sign towers / Turn lights / Buzzers / Terminal blocks / Fuse holders / Controlling boxes / Cable connectors

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