



# 2025 Product DIGEST



FOTEK CONTROLS Est.1985  
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Easiness   
Reliability   
Intelligence   
Performance

2025.02  
Published



## 01

P1~P9

Photoelectric Sensor / Fiber Sensor /Photoelectric Light Curtain / Yarn Break Detector / Magnetic scale & Magnetic Encoder & Ultrasonic Sensor /Leakage Sensor

- US ○ MS ○ A3 ○ E3 ○ K2 ○ RTM ○ E2 ○ PH ○ K2L ○ T12 ○ A-11 ○ SU-07
- SU-02 ○ SU-30 ○ SU-05 ○ CDR ○ CDM ○ CDT ○ KT ○ KM ○ MS ○ FM
- FR ○ mF ○ VF ○ FF ○ FPR ○ FPT ○ LC ○ NA ○ LA ○ WE ○ K3 ○ P3
- LCT ○ LCG ○ PSR ○ EX ○ PSG ○ PPT ○ PST ○ YB ○ EMS ○ EMK ○ MEN
- MES ○ MET ○ MAT ○ FL ○ CP ○ UX18 ○ PX18 ○ PHLS ○ CPLs ○ EPLS



## 02

P10~P16

Inductive Proximity Sensor / Magnetic Sensor

- LS ○ SP ○ BS ○ PP ○ PS ○ PL ○ PSA ○ CPS ○ CPWS ○ CP ○ PT ○ PM
- EX ○ FC-05 ○ FC-06 ○ FC-07 ○ FC-10 ○ FC-11 ○ FC-20 ○ FC-36 ○ FC-37
- FC-47 ○ FC-48 ○ FC-50 ○ FC-53 ○ FC-58 ○ FC-59 ○ MS08 ○ FC-08 ○ FC-12
- FC-T12 ○ FC-18



## 03

P17~P21

Pressure Meter & Sensor / DPM series Wind Velocity Meter & Differential Pressure Meter/ Flow Sensor & Flow Meter / Mass flow meter & Flow controller with Total flow meter

- PRS ○ PRT ○ PRD ○ PRC ○ PRK ○ PRX ○ PRZ ○ PRA ○ PRV ○ DPM
- WVM ○ ATP ○ ATM ○ ATS ○ ATW ○ KTE ○ KIP ○ KIM ○ KIW ○ KIB
- KIC ○ KTX ○ KTY ○ ATF ○ ATC



## 04

P22~P26

Temperature Controller / Temperature & Humidity & Current & Voltage Transmitter / Temperature Control Module & PWM Fan Controller / Heater Controller / UVM Power & UVT Strength Meter / UV Sensor / Temperature & Humidity Meter / Precision Humidity sensor / Current detect board / Phase Relay & Phase Relay & Spark quencher

- NT-10 ○ NT-20 ○ NT-21 ○ NT-22 ○ NT-32 ○ NT-48 ○ NT-72 ○ NT-96 ○ NT-A2 ○ NT-4M
- PWM-32 ○ TC-48 ○ TC-4896 ○ TC-72 ○ TC-96 ○ TDx ○ TDz ○ CT-32 ○ HTM-72 ○ HT-RS ○ TR
- UVM-48 ○ UVT-48 ○ UVA ○ UVc ○ DPM ○ HS-02 ○ HS-mA ○ CT-6P ○ CT-12P ○ PR-K1
- PR-K2 ○ PR-K2 ○ SQ1 ○ SQ3



## 05

P27~P31

Digital Counter / Tachometer / Line Speed Meter / Digital Meter / Voltage Regulator / Weekly Clock / Multi function Digital Meter / Digital Voltage or Current Meter / Digital Timer / Phase Relay / Level Relay / Current Relay / Timer

- SC-34x ○ SC-36x ○ SC-26x ○ MC-34x ○ MC-36x ○ MC-26x ○ HC-21P ○ HC-31P ○ HC41P
- HC-51P ○ HC-61P ○ HC-42P ○ HC-52P ○ MC48-4D ○ MC50-4D ○ MC60-4D ○ SC-4D ○ SK-4D
- SM-10 ○ SM-20 ○ SM-30 ○ SM-10 ○ AVR-48 ○ AVR-72 ○ TW-48 ○ TD-48 ○ TW-72 ○ TD-72
- DM-24x ○ DMA-24x ○ DMV-24x ○ AMA-24x ○ AMV-24x ○ DRM-14x ○ ARM-14x ○ DV-14x ○ DA-14x
- DRM-34x ○ ARM-34x ○ DV-34x ○ DA-34x ○ DRM-2xT ○ ARM-2xT ○ DV-2xT ○ DA-2xT ○ MV-21
- MA-21 ○ TM48-4D ○ HST-4D ○ TM50-xD ○ SY-xD ○ TM60-xD ○ TMP48-4D ○ H5M-4D
- TMP50-xD ○ STP-xD ○ TMP-xD ○ PR-1 ○ PVR-3 ○ PVR-4 ○ MCVN-xx ○ FR-1 ○ FR-2 ○ CR-06
- CR-09 ○ CR-5A ○ H3-Mx ○ H3B-Mx ○ H5B-Mx ○ TM48-Mx ○ STP-Mx ○ H3-FK-Mx ○ H3-xx
- H2Y-xx ○ H3Y-xx ○ MY-xx ○ H3-TF-xx ○ H5B-TFxx ○ TFN-xx ○ TDVN-Mx ○ TDVY-Mx ○ H3-TRD-xx

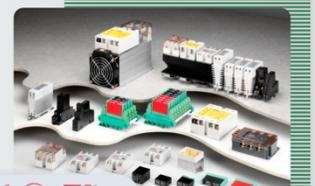


## 06

P32~P38

Single Phase & 3 Phase Solid state module / PCB or Relay state module Solid state module / Single Phase & 3 Phase Digital Power Regulator

- SSR ○ SCR ○ SSR-F ○ SCR-F ○ ASR ○ ACR ○ ASR-F ○ ACR-F ○ HPR ○ SSR-P
- SSR-R ○ SSR-M ○ LSR ○ LSR-AL ○ LSR-RS ○ TSR ○ ESR ○ EZR ○ SSR-K
- SSR-FK ○ SCR-FK ○ DSV ○ DSC ○ TSC ○ KSC ○ ULC ○ LCR ○ EPS ○ TPS



Photoelectric Sensor



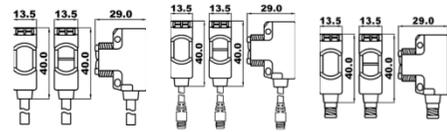
CDR - 30 X B - V - M12  
1 2 3 4 5 6

- Series: 「CDR」= M18 Tubular reflex type ; 「MF」= MF fiber sensor
- Sensing distance: 「01」= 10 mm ; 「10」= 10cm ; 「1M」= 100cm ; 「10M」= 10m
- Emitter Output: 「X」=IR(Infrared) ; 「R」= Red ; 「G」= Green ; 「B」= Blue ; 「W」= White  
「N」= NPN ; 「P」= PNP ; 「Non」= NPN + PNP or Relay
- Status: 「Non」= NO type ; 「B」= NC type
- Direction Protection: 「Non」= Horizontal ; 「V」= Vertical  
「Non」= IP-65 ; 「P」= IP-67
- Wire method: 「Non」= Wire ; 「PG」= M8 wire ; 「M12」= M12connector

Series	Type	Series	Type	Series	Type	Series	Type	Series	Type	Series	Type	Series	Type
UR	Reflex	A3G	Mirror reflex	K2T	Thru beam	SC	Sensor head	FPT	Thru Fiber	EMK	Scale sensor	P3T	Thru beam
UG	Mirror reflex	A3T	Thru beam	CDR	Reflex	SB	Sensor head	PH07	Reflex	MEN	Encoder	P3G	Mirror reflex
UT	Thru beam	E3R	Reflex	CDM	Mirror reflex	A	Amplifier	PH08	Reflex	MES	Encoder	LCT	Thru beam
MR	Reflex	E3G	Mirror reflex	CDT	Thru beam	C	Controller	SU-02	U shape	MET	Encoder	LCG	Mirror reflex
MG	Mirror reflex	E3T	Thru beam	KDR	Reflex	FL	Level sensor	SU-07	U shape	MAT	Encoder	PSR	Reflex
MT	Thru beam	M3R	Reflex	KDM	Mirror reflex	CP13	Level sensor	SU-30	U shape	L T	Thru beam	PSG	Mirror reflex
PR	Reflex	M3G	Mirror reflex	FR	Reflex	CPLS	Leakage sensor	KU-30	U shape	T12	Door sensor	PPT	Thru beam
PG	Mirror reflex	M3T	Thru beam	FG	Mirror reflex	FC	Reed sensor	LC	Light curtain	WE	Length sensor	PST	Thru beam
PT	Thru beam	R18	Reflex	FT	Thru beam	MS08	Hall sensor	NA	Light curtain	K3T	Thru beam	SU05	U shape
E2R	Reflex	M18	Mirror reflex	FM	Mark sensor	MF	Fiber Amp	LA	Light curtain	K3G	Mirror reflex	YB	Yarn break
E2G	Mirror reflex	T18	Thru beam	MS	Mark sensor	VF	Fiber Amp	LA2	Light curtain	K3AT	Thru beam		
E2T	Thru beam	K2R	Reflex	EX	Reflex	FF	Fiber Amp	LA4	Light curtain	K3AG	Mirror reflex		
A3R	Reflex	K2G	Mirror reflex	SV	Sensor head	FPR	Reflex Fiber	EMS	Scale sensor				

US Series

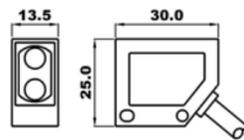
- Approved :
- Voltage : 10~30VDC
- Output : NPN or PNP
- Status : NO/NC changeable
- Protection : IP-66



Type	Model	Output	Sens.	Lead	Emit.	Adj.	Type	Model	Output	Sens.	Lead	Emit.	Adj.	Type	Model	Output	Sens.	Lead	Emit.	Adj.		
Reflex	UR-10N	NPN	10cm	Lead wire			VR	UG-3MNE	NPN	3.0m	Lead wire	Red		Thru beam	UT-6MN	NPN	6.0m	Lead wire		VR		
	UR-10P	PNP						UG-3MPE	PNP			IR				UT-6MP	PNP				non	
	UR-30N	NPN	30cm					UG-6MN	NPN	6.0m						UT-20MN	NPN	20.0m				non
	UR-30P	PNP						UG-6MP	PNP							UT-20MP	PNP					non
	UR-10N-PG	NPN	10cm	M8 Lead wire				UG-3MNE-PG	NPN	3.0m	M8 Lead wire	Red				UT-6MN-PG	NPN	6.0m	M8 Lead wire			VR
	UR-10P-PG	PNP						UG-3MPE-PG	PNP							UT-6MP-PG	PNP					non
	UR-30N-PG	NPN	30cm					UG-6MN-PG	NPN	6.0m						UT-20MN-PG	NPN	20.0m				non
	UR-30P-PG	PNP						UG-6MP-PG	PNP							UT-20MP-PG	PNP					non
	UR-10N-M8	NPN	10cm	M8 connector				UG-3MNE-M8	NPN	3.0m	M8 connector	Red				UT-6MN-M8	NPN	6.0m	M8 connector			VR
	UR-10P-M8	PNP						UG-3MPE-M8	PNP							UT-6MP-M8	PNP					non
	UR-30N-M8	NPN	30cm					UG-6MN-M8	NPN	6.0m						UT-20MN-M8	NPN	20.0m				non
	UR-30P-M8	PNP						UG-6MP-M8	PNP							UT-20MP-M8	PNP					non

MS Series

- Voltage : 10~30VDC
- Sensitivity adjuster : VR
- Output method : NPN&PNP or NPN NO/NC
- Output status : NC type optioned

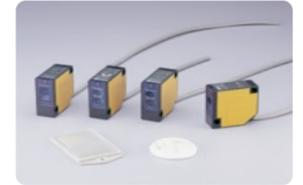
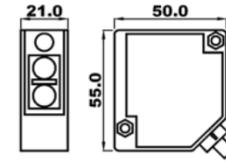


Type	Model	IP	Out	Sens.	Status	Lead	Type	Model	IP	Out	Sens.	Status	Lead	Type	Model	IP	Out	Sens.	Status	Lead			
Reflex	MR-10NE	IP-65	NPN				Lead wire	PR-10NE	IP-65	NPN	15cm			Mirror reflex	MG-2MX	IP-65	NPN	2.0m	NO	Lead wire			
	MR-10X	IP-65	NPN	15cm				PR-10X	IP-65	NPN	15cm					MG-2MXP	IP-67	PNP					
	MR-10XP	IP-67	PNP					PR-10XP	IP-67	PNP						PG-2MX	IP-65	NPN	2.0m	NO	M8		
	MR-30X	IP-65	NPN	30cm	NO			PR-30X	IP-65	NPN	30cm	NO	M8			PG-2MXP	IP-67	PNP					
	MR-30XP	IP-67	PNP					PR-30XP	IP-67	PNP						MT-6MX	IP-65	NPN	6.0m	NO	Lead wire		
	MR-60X	IP-65	NPN	60cm				PR-60X	IP-65	NPN	60cm					MT-6MXP	IP-67	PNP					
	MR-60XP	IP-67	PNP					PR-60XP	IP-67	PNP						PT-6MX	IP-65	NPN	6.0m	NO	M8		
																PT-6MXP	IP-67	PNP					

\*「J」= NPN NO/NC

A3 Series

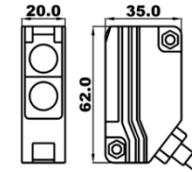
- Voltage : 20~260VAC/DC
- Output : Relay(3A/250VAC)



Type	Model	Sensing distance	Sensing Adjuster	Emit.	IP	Type	Model	Sens. distance	Sensing Adjuster	Emit.	IP	Type	Model	Sens. distance	Sensing Adjuster	Emit.	IP		
Reflex	A3R-30X	30cm				Mirror reflex	A3G-2MR	3.0m	VR			Thru beam	A3T-3MX	3.0m					
	A3R-1MX	1.0m	VR 270	IR	IP-65		A3G-2MRS	2.0m		RED	IP-65		A3T-10MX	10.0m					
	A3R-2MX	2.0m					A3G-4MRE	4.0m	non				A3T-20MX	20.0m	non	IR	IP-65		
	A3R-4MX	4.0m					A3G-4MX	6.0m	non	IR									
	A3R-30XP	30cm					A3G-2MR-P	3.0m	VR				A3T-3MXP	3.0m					
	A3R-1MXP	1.0m	VR 270	IR	IP-67		A3G-2MRS-P	2.0m		RED	IP-67		A3T-10MXP	10.0m					
	A3R-2MXP	2.0m					A3G-4MRE-P	4.0m	non				A3T-20MXP	20.0m	non	IR	IP-67		
	A3R-4MXP	4.0m					A3G-4MX-P	6.0m	non	IR									

E3 Series

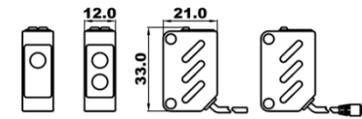
- Voltage : 20~260VAC/DC
- Output : Relay(1A/250VAC)



Type	Model	ON delay	Sensing distance	Adj.	Emit.	IP	Type	Model	ON delay	Sensing distance	Adj.	Emit.	IP	Type	Model	ON delay	Sensing distance	Adj.	Emit.	IP	
Reflex	E3R-60X	non	60cm				Mirror reflex	E3G-6MRE	non	6.0m	non	RED	IP-65	Thru beam	E3T-10MX	non	12.0m	non	IR	IP-65	
	M3R-60X	0~1s	60cm	VR 270°	IR	IP-65		M3G-6MRE	0~1S						E3T-30MX	0~1S	32.0m				
								E3G-8MX	non						M3T-10MX	0~1S	12.0m	non	IR	IP-65	
								M3G-8MX	0~1S	8.0m	non	IR	IP-65		M3T-30MX	0~1S	32.0m	non	IR	IP-65	

K2 Series

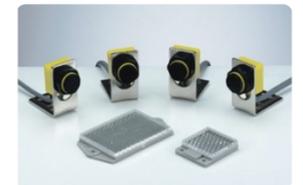
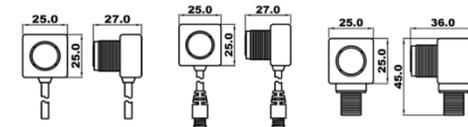
- Operating voltage : 10~30VDC
- Output method : NPN or PNP
- Output status : NO / NC changeable
- Protection class : IP-66



Type	Model	Sensing distance	Emit.	Adj.	Lead	Type	Model	Sensing distance	Emit.	Adj.	Lead	Type	Model	Sensing distance	Emit.	Adj.	Lead				
Reflex	K2R-10NE	15cm				Lead wire	K2R-1MN	1.0m				Thru beam	K2T-4MN	4.0m							
	K2R-10PE	15cm	RED				K2R-1MP	1.0m		IR	VR		Wire	K2T-4MP	4.0m	Red		non	Wire		
	K2R-10N	15cm			VR		K2R-1MN-PG	1.0m					M8 Wire	K2T-15MN	15.0m		IR				
	K2R-10P	15cm					K2R-1MP-PG	1.0m		IR				K2T-15MP	15.0m						
	K2R-30N	40cm					K2G-2MNE	2.0m		RED			non	Wire	K2T-4MN-PG	4.0m		Red		non	M8 Wire
	K2R-30P	40cm					K2G-2MPE	2.0m							K2T-4MP-PG	4.0m					
	K2R-10NE-PG	15cm					K2G-3MN	3.0m		IR			non	M8 Wire	K2T-15MN-PG	15.0m		IR			
	K2R-10PE-PG	15cm					K2G-3MP	3.0m							K2T-4MP-PG	4.0m					
	K2R-10N-PG	15cm			VR		K2G-2MNE-PG	2.0m		RED			non	M8 Wire	K2T-15MN-PG	15.0m					
	K2R-10P-PG	15cm					K2G-2MPE-PG	2.0m							K2T-15MP-PG	15.0m					
	K2R-30N-PG	40cm					K2G-3MN-PG	3.0m		IR			non	M8 Wire							
	K2R-30P-PG	40cm					K2G-3MP-PG	3.0m													

RTM Series

- Approved :
- Voltage : 10~30VDC
- Output : NPN & PNP
- Protection : IP-67



Type	Model	Sensing distance	Emit.	Adj.	Lead	Type	Model	Sensing distance	Emit.	Adj.	Lead	Type	Model	Sensing distance	Output	Emit.	Adj.	Lead
Reflex	R18-10X	10cm				Mirror Reflex	M18-3MX	3.0m	IR	non	Wire	Thru beam	T18-6MX	6.0m	N/P			
	R18-30X	30cm	IR	VR	Wire		M18-1MG	1.2m	Blue	VR			T18-6MN	6.0m	NPN	IR	non	Wire
	R18-60X	60cm					M18-2MRE	2.0m	Red	VR			T18-30MX	30.0m	N/P			
	R18-10X-PG	10cm					M18-3MX-PG	3.0m	IR	non	M8 Wire		T18-6MX-PG	6.0m	N/P			
	R18-30X-PG	30cm	IR	VR	M8 Wire		M18-1MG-PG	1.2m	Blue	VR			T18-6MN-PG	6.0m	NPN	IR	non	M8 Wire
	R18-60X-PG	60cm					M18-2MRE-PG	2.0m	Red	VR			T18-30MX-PG	30.0m	N/P			
	R18-10X-M12	10cm					M18-3MX-M12	3.0m	IR	non	M12		T18-6MX-M12	6.0m	N/P			
	R18-30X-M12	30cm	IR	VR	M12		M18-1MG-M12	1.2m	Blue	VR			T18-6MN-M12	6.0m	NPN	IR	non	M12
	R18-60X-M12	60cm					M18-2MRE-M12	2.0m	Red	VR			T18-30MX-M12	30.0m	N/P			

**E2 Series**

- Operating voltage : 10~30VDC
- Output method : NPN & PNP
- Output status : NO/ NC changeable



Type	Model	Sens. distance	Emitter	Adj.	Lead	Dimension	Type	Model	Sens. distance	Emitter	Adj.	Lead	Dimension
Reflex	E2R-10N	10cm	IR	VR	Wire		Mirror Reflex	E2G-2MN	2.0M	IR	VR	Wire	
	E2R-30N	30cm						E2G-1MRE	1.2M	Red			
Thru	E2T-4MN	4.0m						E2G-1MG	1.2M	Blue			

**PH Series M8 & 7Φ**

- Operating voltage : 10~30VDC
- Output method : NPN
- Protection class : IP-67



Type	Model	Sens. distance	Emitter	Adj.	Lead	Dimension
Reflex	PH07-03N	45.0 mm	IR	non	Wire	
	PH08-03N					

**K2L Series Limited Reflex**

- Operating voltage : 10~30VDC
- Output method : NPN or PNP
- Protection class : IP-65



Type	Model	Output method	Output status	Sens. distance	Emitter	Dimension
Reflex	K2L-05N	NPN	NO/NC Changeable	5~10 cm	Red	
	K2L-05P	PNP				

**T12 Series**

- Operating voltage : 10~30VDC
- Output method : NPN or PNP
- Protection class : IP-66



Type	Model	Output	Sensing distance	Adj.	Emit.	Lead	Dimension
Thru beam(Flushed)	T12-6MN	NPN	6.0m	non	IR	7m	
	T12-6MP	PNP					
	T12-20MN	NPN	24.0m	non	IR	7m	
	T12-20MP	PNP					
	T12-6MN-PE	NPN	6.0m	non	IR	PE wire	
	T12-6MP-PE	PNP					
	T12-20MN-PE	NPN	24.0m	non	IR	PE wire	
	T12-20MP-PE	PNP					

**A-11 Series**

- Operating voltage : 110 or 220VAC
- Output method : Relay
- Protection class : IP-65



Type	Model	Voltage	Sensing distance	Adj.	Emit.	Lead	Dimension
Amplifier	A-11-24V	10~30V	---	non	---	Terminal	
	A-11-110V	110VAC					
	A-11-220V	220VAC					
Sensor head	SC-6M	---	6.0m	non	IR	7m	
	SC-6M-PE	---					

**SU-07 Series**

- Operating voltage : 10~30VDC
- Output method : NPN & PNP
- Protection class : IP-65



Type	Model	Emit.	Output	Sensing distance	Adj.	Dimension
U shape	SU-07W	White	NPN & PNP	7.0 mm	VR	
	SU-07G	Green				
	SU-07R	Red	NPN	7.0 mm	non	
	MU-07X	IR				
	SU-07X	IR	PNP	7.0 mm	non	
	SU-07XP	IR				

**SU-02 Series**

- Operating voltage : 10~30VDC
- Output method : NPN or PNP
- Protection class : IP-65



Type	Model	Emit.	Output	Sensing distance	Adj.	Dimension
U shape	SU-02X	IR	NPN	2.0 mm	VR	
	SU-02XP	IR	PNP			
	SU-02R	Red	NPN			
	SU-02RP	Red	PNP			
	SU-02V	Vert.	IR			

**KU-30 Series**

- Operating voltage : 10~30VDC
- Output method : NPN or PNP
- Protection class : IP-66



Type	Model	Output	Dir.	House	Sensing distance	Emit.	Dimension	
U shape	KU-30N	NPN	Horiz.	Nylon	30 mm	IR		
	KU-30P	PNP						
	KU-30N-V	NPN	Vert.					
	KU-30P-V	PNP						
	SU-30X	NPN	Horiz.					Allum.
	SU-30XP	PNP						

**KT18 Series Water proof**

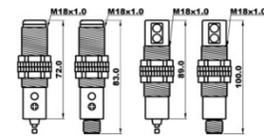
- Operating voltage : 10~30VDC
- Output method : NPN or PNP
- Protection class : IP-67



Type	Model	Status	Output	Sensing distance	Emit.	Dimension
Thru beam	KT18-20MN	NO	NPN	20M	RED	
	KT18-20MNB	NC				
	KT18-20MP	NO	PNP			
	KT18-20MPB	NC				

**M18-C Series**

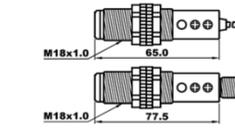
- Operating voltage : 10~30VDC or 90~250VAC
- Output method : NPN & PNP or SCR
- Protection class : IP-66
- Approved :



Type	Model	Sens. dist.	Dir.	Volt.	Emit.	Type	Model	Sens. dist.	Dir.	Emit.	Lead	Volt.	Type	Model	Sens. dist.	Dir.	Emit.	Lead	Volt.
Reflex	CDR-10X	10cm	Horiz.	10~30 VDC	IR	Reflex	CDR-10X-M12	10cm	Horiz.	IR	M12 connector	10~30 VDC	Mirror Reflex	CAM-2MX	2.0m	Vert.	IR	Wire	90~250 VAC
	CDR-30X	30cm					CDR-30X-M12	30cm						CDM-2MX-V	2.0m				
	CDR-60X	60cm					CDR-60X-M12	60cm						CDM-1MR-M12	1.6m				
	CDR-10X-V	10cm					CDR-10X-V-M12	10cm						CDM-2MX-M12	2.5m				
	CDR-30X-V	30cm					CDR-30X-V-M12	30cm						CDM-2MX-V-M12	2.0m				
	CDR-60X-V	60cm					CDR-60X-V-M12	60cm						CDT-10MX	10.0m				
	CAR-10X	10cm					CDM-1MR	1.6m						CDT-6MX-V	6.0m				
	CAR-30X	30cm					CDM-2MX	2.5m						CDT-10MX-M12	10.0m				
	CAR-10X-V	10cm					CDM-2MX-V	2.0m						CDT-6MX-M12	6.0m				

**KD/KM Series [M18 Alumina housing]**

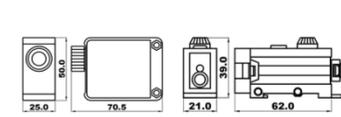
- Operating voltage : 10~30VDC
- Output method : NPN & PNP
- Protection class : IP-66



Type	Model	Sensing distance	Emit.	Adj.	Status	Lead	Type	Model	Sensing distance	Emit.	Adj.	Status	Lead
Reflex	KDR-10X	15cm	IR	VR	changeable	Wire	Reflex	KDR-10X-M12	15cm	IR	VR	changeable	M12
	KDR-30X	40cm						KDR-30X-M12	40cm				
	KDR-60X	60cm						KDR-60X-M12	60cm				

**MS/FM Series**

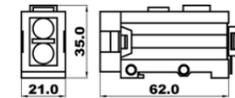
- Operating voltage : 10~30VDC
- Output method : NPN & PNP
- Protection class : IP-65



Type	Model	Resp. time	Sensing distance	Emit.	Status	Wire	Type	Model	Emit.	Resp. time	Sensing distance	Status	Wire
Mark sensor	MS-02W	0.2ms	25.0 mm	White LED	changeable	Wire	Mark sensor	FM-01R	Red	0.25 ms	15.0 mm	changeable	Wire
	MS-02W-H	0.1ms						FM-01G	White	2.0 ms	12.0 mm		
	MS-02W-M12	0.2ms						FM-01PR	Red	2.0 ms	12.0 mm		
	MS-02WH-M12	0.1ms						FM-01PG	White	2.0 ms	12.0 mm		

**F Series**

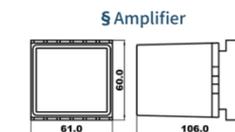
- Operating voltage : 10~30VDC
- Output method : NPN & PNP
- Protection class : IP-65



Type	Model	Sensing distance	Dir.	Emit.	Resp. time	Status	Type	Model	Sensing distance	Dir.	Emit.	Resp. time	Status			
Reflex	FR-1MX	1.0m	Horiz.	IR	2.0 ms	changeable	Reflex	FR-1MXS	50cm	Horiz.	IR	2.0 ms	changeable			
	FR-2MX	2.0m						FR-4MX	4.0m							
	FR-1MX-V	1.0m						FG-3MX	4.0m							
	FR-2MX-V	2.0m						FG-3MX-V	4.0m							

**AS Series Amplifier Separated type**

- Amplifier(A-8/A-9)
- Operating voltage : 110 / 220VAC(Amplifier)
- Output method : Relay(Amplifier)
- Protection class : IP-54



Sensor Head															
Model	Sens. Dist.	Emit.	Dimension	Model	Sens. Dist.	Emit.	Dimension	Model	Sens. Dist.	Emit.	Dimension	Model	Sens. Dist.	Emit.	Dimension
SV-10	15cm	Green		SH-10	15cm	Green		SC-10	15cm	Green		SB-03	30mm	Red	
SV-15	15cm	Red		SH-15	15cm	Red		SC-15	15cm	Red		SB-10	10cm	IR	
SV-30	30cm	Red		SH-30	30cm	Red		SC-30	30cm	Red					
SV-50	50cm	Red		SH-50	50cm	Red		SC-50	50cm	Red					
SV-2M	2m	IR		SH-2M	2m	IR		SC-2M	2m	IR					

MF/VF/FF Series Fiber Sensor Amplifier

- Operating voltage : 10~30VDC
- Output method : NPN & PNP
- Protection class : IP-65
- Output status : NO/NC changeable



Type	Model	Emit.	Resp. time	Dimension	Type	Model	Output	Resp. time	Dimension	Type	Model	Emit.	Resp. time	Dimension
Fiber amplifier	mF-01B	Blue	ON+OFF < 0.2ms		Fiber amplifier	VF-06R	NPN	ON+OFF < 0.5ms		Fiber amplifier	FF-03R	Red	ON+OFF < 0.5ms	
	mF-06R	Red				VR-06RP	PNP				FF-03X	IR		
	mF-06RT	Red				VF-06R-M8	NPN				FF-06R	Red		
	mF-01B-M8	Blue				VR-06RP-M8	PNP				FF-06X	IR		
	mF-06R-M8	Red												
mF-06RT-M8	Red													

FPR Series Reflex type Fiber

Model	Sens. distance	Dimension	Model	Sens. distance	Dimension	Model	Sens. distance	Dimension
FPR-51	85 mm		FPR-56	45 mm		FPR-61	45 mm	
FPR-52	85 mm		FPR-57	45 mm		FPR-62	85 mm	
FPR-53	45 mm		FPR-58	45 mm		FPR-63	45 mm	
FPR-54	45 mm		FPR-59	45 mm		FPR-64	85 mm	
FPR-55	85 mm		FPR-60	85 mm		FPR-65	45 mm	

FPT Series Thru Beam type Fiber

Model	Sens. distance	Dimension	Model	Sens. distance	Dimension	Model	Sens. distance	Dimension
FPT-01	120 mm		FPT-06	120 mm		FPT-11	120 mm	
FPT-02	320 mm		FPT-07	320 mm		FPT-12	320 mm	
FPT-03	120 mm		FPT-08	60 mm		FPT-13	120 mm	
FPT-04	320 mm		FPT-09	120 mm		FPT-14	320 mm	
FPT-05	120 mm		FPT-10	320 mm		FPT-15	320 mm	

LC/NA/LA Series

- Operating voltage : 24±20% VDC
- Output method : NPN or PNP
- Output status : LC&NA NO/NC two output ; LA NO/NC changeable
- Protection class : IP-65



Pitch	Model	Beam height	Protect height	Setting Distance	Pitch	Model	Beam height	Protect height	Setting Distance	Pitch	Model	Beam height	Protect height	Setting Distance	Pitch	Model	Beam height	Protect height	Setting Distance				
25.0 mm	LC-04E	4	75	0.5m - 6.0m	25.0 mm	LC-32E	32	775	0.5m - 6.0m	40.0 mm	NA-04E	4	120	0.5m - 6.0m	40.0 mm	NA-20E	20	760	0.5m - 6.0m	25mm	LA-05E	5	100 mm
	LC-08E	8	175			LC-40E	40	975			NA-06E	6	200			NA-24E	24	920			LA-05E-PG	5	100 mm
	LC-12E	12	275			LC-48E	48	1175			NA-08E	8	280			NA-28E	28	1080			LA-05PE	5	100 mm
	LC-16E	16	375			LC-56E	56	1375			NA-12E	12	440			NA-32E	32	1240			LA-11E	11	100 mm
	LC-24E	24	575			LC-64E	64	1575			NA-16E	16	600			NA-36E	36	1400			LA-11PE	11	100 mm

LA-2/LA-4 Series

- Operating voltage : 24±20% VDC
- Output method : NPN & PNP
- Output status : NO/NC changeable
- Protection class : IP-65



Pitch	Model	Beam height	Protect height	Setting Distance	Pitch	Model	Beam height	Protect height	Setting Distance	Pitch	Model	Beam height	Protect height	Setting Distance	Pitch	Model	Beam height	Protect height	Setting Distance				
20.0mm	LA2-08	8	140	0.2m - 3.2m settable	20.0mm	LA2-08L	8	140	0.2 - 6.0m or 0.5 - 12.0m settable	40.0 mm	LA4-04	4	120	0.2 - 6.0m or 0.5 - 12.0m settable	40.0 mm	LA4-04-L	4	120	0.2 - 6.0m or 0.5 - 12.0m settable	40.0 mm	LA4-06-L	6	200
	LA2-12	12	220			LA2-12L	12	220			LA4-06	6	200			LA4-08-L	8	280					
	LA2-16	16	300			LA2-16L	16	300			LA4-08	8	280			LA4-12-L	12	440					
	LA2-20	20	380			LA2-20L	20	380			LA4-12	12	440			LA4-16-L	16	600					
	LA2-24	24	460			LA2-24L	24	460			LA4-16	16	600			LA4-20-L	20	760					
	LA2-28	28	540			LA2-28L	28	540			LA4-20	20	760			LA4-24-L	24	920					
	LA2-32	32	620			LA2-32L	32	620			LA4-24	24	920			LA4-28-L	28	1080					

C Series Sensor Controller

- Operating voltage : 110/220 VAC
- Output method : Relay
- Protection class : IP-65



Model	Timer	Detect	DC out	Volt.	Dimension	Model	Timer	DC out	Volt.	Dimension	Model	Timer	DC out	Volt.	Dimension
C-1	Non					C-6	Non		110 or 220VAC		C-21	ON+OFF delay	60 mA	90 - 250VAC	
C-2	*	non	150 mA	110 / 220VAC		C-10	***	40 mA							
C-3	**					C-11	****								
C-1-LCK	Non	with				C-12	*****								

Timer: C-2: One shot / ON delay / OFF delay selectable ; C-3: Timer 1: ON delay Timer 2: One shot / ON delay / OFF delay selectable  
C-10: OFF delay ; C-11: ON delay or One shot ; C-12: ON+OFF delay ; C-21: ON + OFF delay

MR Series Reflex Mirror

MR-1	MR-2	MR-3	MR-4

WE Series Wheel type Length Encoder

- Operating voltage : 10~30VDC
- Response frequency : 2KHz
- Output method : Push-Pull



Type	Model	Unit	PPR	Type	Model	Unit	PPR	Type	Model	Unit	PPR	Type	Model	Unit	PPR	Dimension
Single phase	WE-M1	1m	0.2	Single phase	WE-Y1	1yd	0.2	Two phase	WE-M2T	0.1m	2	Two phase	WE-Y2T	0.1yd	2	
	WE-M2	0.1m	2		WE-Y2	0.1yd	2		WE-M3T	0.01m	20		WE-Y3T	0.01yd	20	
	WE-M3	0.01m	20		WE-Y3	0.01yd	20		WE-M4T	0.001m	200		WE-Y4T	0.001yd	200	

K3 & K3A & P3 Series Long Distance Photo-electric Sensor

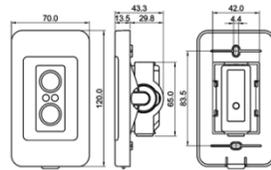
- Operating voltage : 10~30VDC or 24~240VAC/DC
- Output method : Relay (2A/30VDC) or NPN
- Water proof : IP67



Type	Model	Output method	Sensing distance	Operating voltage	Type	Model	Output method	Sensing distance	Operating voltage	Type	Model	Output method	Sensing distance	Operating voltage
Thru beam	K3T-10MR	Relay	10m	10~30 VDC	Mirror reflex	K3G-10MR	Relay	10m	10~30 VDC	Thru beam	P3T-10MR	Relay	10m	10~30 VDC
	K3T-10MN	NPN				K3G-10MN	NPN				P3T-10MN	NPN		
	K3T-40MR	Relay	40m			K3G-40MR	Relay	40m			P3T-40MR	Relay	40m	
	K3T-40MN	NPN				K3G-40MN	NPN				P3T-40MN	NPN		
	K3T-80MR	Relay	80m			K3G-8MRE	Relay	80m			P3T-80MR	Relay	80m	
	K3T-80MN	NPN				K3G-8MNE	NPN				P3T-80MN	NPN		
	K3AT-10MR	Relay	10m			K3AG-10MR	Relay	10m			P3G-12MR	Relay	12m	
	K3AT-40MR	Relay	40m			K3AG-10MRE	Relay	10m			P3G-12MN	NPN	10m	
	K3AT-80MR	Relay	80m			K3AG-8MRE	Relay	8m			P3G-10MRE	Relay	10m	
							K3AG-8MNE	Relay			8m	P3G-10MNE	NPN	

LCT/LCG Series Lane Photo-electric Sensor

- Operating voltage : 10~30VDC
- Output method : Relay(2A/30VDC)
- Water proof : IP67
- Mounted angle adjustable



Type	Model	Output method	Sensing distance	Emitter	Type	Model	Output method	Sensing distance	Emitter	Type	Model	Output method	Sensing distance	Emitter
Thru beam	LCT-16MX	NO	16m Min.	IR	Mirror reflex	LCG-12MR	NO	12.0m Min.	RED	Polarized Mirror reflex	LCG-10MRE	NO	10m Min.	RED
	LCT-16MXB	NC				LCG-12MRB	NC				LCG-10MREB	NC		
	LCT-40MX	NO	40m Min.			LCG-12MRB	NC	LCG-10MREB			NC			
	LCT-40MXB	NC												

PP & PS Series Plate & Slim Photo-electric Sensor

- Operating voltage : 10~30VDC
- Output method : NPN or PNP
- Output status : NO or NC
- Water proof : IP-64



Type	Model	Output method	Sensing distance	Emit.	Lead	Type	Model	Output method	Sensing distance	Emit.	Lead	Type	Model	Output method	Sensing distance	Shape	Emit.	Lead				
Reflex	PSR-05N	NPN	5cm	RED	Lead wire	Mirror Reflex	PSG-20N	NPN	20cm	Red	Lead wire	Thru beam	PPT-60N	NPN	60cm	Plate	IR	Lead wire				
	PSR-05P	PNP					PSG-20P	PNP					PPT-60P	PNP								
	PSR-10N	NPN	10cm				PSG-60N	NPN	60cm				PST-60N	NPN	60cm	Slim			PPT	PST		
	PSR-10P	PNP					PSG-60P	PNP					PST-60P	PNP								
	EX-01N	NPN	10mm																			
	EX-03N	NPN	30mm																			
	EX-07N	NPN	70mm				IR															

SU-05 Series U type

- Operating voltage : 5~30VDC
- Output method : NPN or PNP
- Protection class : IP-64
- Slot width : 5.0mm\*9.0mm



YB series Yarn Break Detector

- Operating voltage : 10~30VDC
- Output method : NPN or PNP
- Protection class : IP-65
- Emitter : IR



Type	Model	Output status	Output method	Type	Model	Output status	Output method	Hole diameter	Model	Res. time	Detection method	Detectable object min.	Type	Dimension		
PE Connector	SU-H05N-PE	NO	NPN	Lead wire	SU-H05N	NO	NPN	3.0Φ	YB-3RH	5ms	Vibration	0.06~2.4Φ	Lead wire			
	SU-H05P-PE	NC	PNP		SU-H05P	NO	PNP		YB-3R	50ms						
	SU-H05NB-PE	NC	NPN		SU-H05NB	NC	NPN	YB-3RS	50ms	4.0Φ	YB-5RH	5ms			Vibration	0.06~3.2Φ
	SU-H05PB-PE	NC	PNP		SU-H05PB	NC	PNP	YB-5R	50ms							
	SU-V05N-PE	NO	NPN		SU-V05N	NO	NPN	YB-5RS	50ms	12.0Φ	YB-2RH	5ms			Vibration	0.06~6.0Φ
	SU-V05P-PE	NO	PNP		SU-V05P	NO	PNP	YB-2R	50ms							
	SU-V05NB-PE	NC	NPN		SU-V05NB	NC	NPN	YB-2RS	50ms	Break ON	YB-2R	50ms			Vibration	0.06~6.0Φ
	SU-V05PB-PE	NC	PNP		SU-V05PB	NC	PNP	YB-2RS	50ms							

#「H」: Horizontal type; 「V」: Vertical type

EMS/EMK Series Magnetic Scale Sensor

- Operating voltage : 10 ~ 30 VDC
- Setting distance : 0.1 ~ 4.0 mm
- Protection class : IP-67



Series	Model	Res. μm	Series	Model	Res. μm	外形尺寸 (EMS)	Series	Model	Res. μm	Series	Model	Res. μm	Dimension (EMK)
EMS	EMS-01-□□	1.0	EMS	EMS-100-□□	100.0		EMK	EMK-01-□□	1.0	EMK	EMK-100-□□	100.0	
	EMS-05-□□	5.0		EMS-250-□□	250.0			EMK-05-□□	5.0		EMK-250-□□	250.0	
	EMS-10-□□	10.0		EMS-500-□□	500.0			EMK-10-□□	10.0		EMK-500-□□	500.0	
	EMS-25-□□	25.0		EMS-1k-□□	1000.0			EMK-25-□□	25.0		EMK-1k-□□	1000.0	
	EMS-50-□□	50.0						EMK-50-□□	50.0				

◎ Response frequency : 「non」=16KHz / 「H」=250 KHz / 「SH」=2000 KHz ◎ Output method : 「non」= Push-Pull / 「D」= Line drive

MEN/MES/MET Series Magnetic Encoder

- Operating voltage : 10 ~ 30 VDC or 5 ~ 30 VDC
- Output method : NPN or PNP or Line drive
- Response frequency : 30K ~ 120K Hz



**MES - 2500 D - E - 8 - M12**

1. Product Incremental : 「MES」= 40Φ ; 「MET」= 50Φ ; 「MEN」= 30Φ  
Absolute : 「MAT」= 50Φ

2. Resolution : 1~4096 PPR  
「05」= 5 PPR ; 「500」= 500 PPR  
「1024」= 1024 PPR ; 「2500」= 2500 PPR  
※ Other PPR is available

3. Output method 「D」= Line driver ; 「N」= NPN ; 「P」= PNP

4. Bearing or Output code (MET/MAT)  
「E」= Heavy duty type ; 「N」= Standard type  
「GC」= Gray code ; 「BCD」= BCD code ; 「Non」= Binary code

5. Diameter of shaft or hole  
「Non」= Shaft 6.0Φ ; 「4Φ」= Shaft 4.0 mm ; 「8Φ」= Shaft 8.0 mm  
「10Φ」= Shaft 10.0 mm ; 「H8」= Hole 8.0Φ ; 「H10」= Hole 10.0Φ

6. Option  
「Non」= Cable lead wire ; 「PG」= M12 Lead wire  
「M12」= M12 connection (MET type only)  
「ZL」= Z Phase low level output ; 「MW」= Meter wheel type

※Remarks : 1. Pulse per Revolution (PPR) : 5, 10, 20, 30, 40, 50, 60, 100, 120, 150, 180, 200, 250, 300, 360, 400, 500, 512, 600, 720, 800, 1000, 1024, 1200, 1500, 1800, 2000, 2048, 2500  
2. Accepted to manufacture for special resolution.

MEN	MES
MES-HS 	MET / MAT 
MES-MW 	MET-E / MAT-E 

FL/CP Series Level Sensor

- Operating voltage : 10 ~ 30 VDC
- Sensitivity adjuster : VR(14 turns)
- Applied tube : 7~13Φ



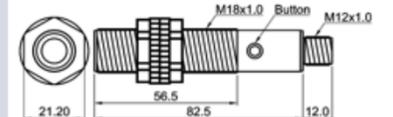
Type	Model	Output method	Output Status	Applied tube	Housing material	Dimension	Type	Model	Output method	Output Status	Applied tube	Housing material	Dimension
Photoelectric	FL-13N	NPN	NO/NC changeable	Transparent tube	94V0		Capacitive	CP13-10N	NPN	NO/NC changeable	Opaque tube	94V0	
	FL-13P	PNP						CP13-10P	PNP				

UX18 & PX18 series Precision Ultrasonic Sensor

- Operating voltage : 10~30VDC
- Output method : NPN or PNP or 4~20mA or 0~10V
- Output status : NO / NC changeable
- Protection class : IP-67

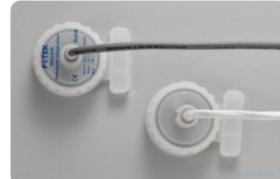
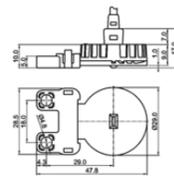


Housing	Model	Output method	Linear output	Settable range	Sensing range	Ultrasonic frequency	Response frequency	Resolution	Dimension
SUS-316	UX18-1MC	NPN+PNP	non		80~1000 mm	60~1000 mm	250KHz (Typical)	8Hz	0.1mm max.
	UX18-1MN-mA	NPN	4~20mA						
	UX18-1MN-V	NPN	0~10V						
PP	PX18-1MC	NPN+PNP	non		80~1000 mm	60~1000 mm	250KHz (Typical)	8Hz	0.1mm max.
	PX18-1MN-mA	NPN	4~20mA						
	PX18-1MN-V	NPN	0~10V						



## PHLS Series Photoelectric Leakage Sensor

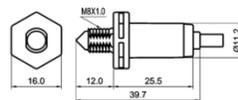
- Circular 360° detecting
- Solid compact structure IP-67
- 「PTFE」 High Corrosion resistance
- High sensitivity easy to detect rare leakage
- Easy application without sensitivity adjuster



Model	PHLS-01N-TF	PHLS-01NB-TF	PHLS-01P-TF	PHLS-01PB-TF	PHLS-01N	PHLS-01NB	PHLS-01P	PHLS-01PB
Output status	NO	NC	NO	NC	NO	NC	NO	NC
Output method	NPN		PNP		NPN		PNP	
Housing material	PTFE				PTFE			
Lead wire	3Φ/3c-2m (PTFE)				3Φ/3c-2m (PVC)			
Operating voltage	10 ~ 30VDC							

## PHLS-M8 Series M8 Photoelectric Leakage Sensor

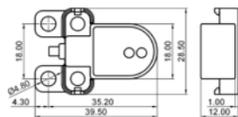
- 「PSU」 High Corrosion resistance
- Circular 360° detecting
- Solid compact structure IP-67
- Easy application without sensitivity adjuster



Model	PHLS-M8N	PHLS-M8NB	PHLS-M8P	PHLS-M8PB
Output status	NO	NC	NO	NC
Output method	NPN		PNP	
Housing material	PSU (Polysulfone)			
Lead wire	3Φ/3c-2m (PVC)			
Operating voltage	10 ~ 30VDC			

## CPLS Series Leakage sensor

- Rare leakage detectable
- Small compact structure
- Sensitivity adjuster : 270° Trimmer
- Corrosion resistance housing material : PP or PTFE



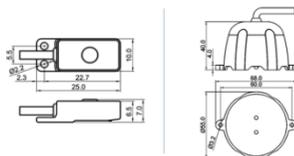
Model	CPLS-01N	CPLS-01NB	CPLS-01P	CPLS-01PB	CPLS-01N-TF	CPLS-01NB-TF	CPLS-01NS-TF	CPLS-01NBS-TF
Output status	NO	NC	NO	NC	NO	NC	NO	NC
Output method	NPN		PNP		NPN		NPN	
Applied site	Normal				Plastic site		Stainless steel site	
Sensitivity adjuster	270° Trimmer				270° Trimmer			
Housing material	PP				PTFE			
Operating voltage	10 ~ 30VDC							

## EPLS Series Electrode Leakage Sensor

- High Reliability
- High Noise Resistance
- Rare leakage detectable
- Small compact structure
- Easy application without sensitivity adjuster



Product	Mini type		Mini amplifier		Free power		Dimension	
Model	EPLS-01N	EPLS-01P	EPLS-A1N	EPLS-A1P	EPLS-F1	EPLS-FX	EPLS-01	EPLS-FX
Output method	NPN	PNP	NPN	PNP	Relay	Timer + Relay		
Output status	Leakage ON		Leakage ON		Leakage ON	Leakage ON		
Protection class	IP-67		IPX0		IP-67	IP-67		
Housing material	ABS intensive				Nylon intensive			
Operating voltage	10 ~ 30VDC				24~250 VAC/DC			



## Inductive Proximity Sensor



- ※ All DC type with 「Short-circuit」 & 「Polarity reversed」 protection.
- ※ All AC type with 「surge absorbing circuit」 to avoid surge damage.
- ※ High solid compact structure 「IP-67」 suited to applied in any poor circumstance.
- ※ All models with 「operating pilot」.
- ※ Conformity with 「IEC」 standard.

## ◆ Guiding of model

## Tubular type

**PM 12 E - 04 N B S - M12**  
 1 2 3 4 5 6 7 8

1. Type	「PM」 = Screw type ; 「PT」 = Tubular ; 「EX」 = Extensive ; 「TW」 = 2wires ; 「CP」 = Capacitive
2. Outline	「04」 = 4Φ ; 「05」 = M5*0.5 ; 「08」 = M8*1.0 ; 「12」 = M12*1.0 ; 「18」 = M18*1.0 ; 「30」 = M30*1.5
3. Special model	「E」 = Long sensing distance type ; 「non」 = Standard type
4. Sensing distance	「01」 = 1.0 mm ; 「02」 = 2.0 mm ; 「04」 = 4.0 mm ; 「05」 = 5.0 mm ; 「08」 = 8.0 mm ; 「10」 = 10.0 mm ; 「15」 = 15.0 mm ; 「20」 = 20.0 mm ; 「25」 = 25.0 mm
5. Output method	「N」 = NPN ; 「P」 = PNP ; 「C」 = NPN & PNP ; 「X」 = NPN/PNP & NO/NC ; 「S」 = SCR
6. Output status	「Non」 = NO type ; 「B」 = NC type
7. Body material	「Non」 = Cu plated Ni ; 「S」 = Short ; 「P」 = Plastic ; 「E」 = Full screw ; 「K」 = Stainless steel
8. Connection method	「Non」 = Lead wire type ; 「PG」 = M8 lead wire type ; 「M12」 = M12 connector type

## Plastic Square type

**LS - 04 N B - V - PG**  
 1 2 3 4 5 6

1. Type	「LS」 = Long square ; 「SP」 = Plate ; 「BS」 = Micro switch ; 「PS」 = Square ; 「PL」 = Long square ; 「PP」 = Plate ; 「CP」 = Capacitive
2. Sensing distance	「02」 = 2.0 mm ; 「04」 = 4.0 mm ; 「05」 = 5.0 mm ; 「08」 = 8.0 mm ; 「10」 = 10.0 mm ; 「15」 = 15.0 mm ; 「25」 = 25.0 mm
3. Output method	「N」 = NPN ; 「P」 = PNP ; 「C」 = NPN & PNP ; 「X」 = NPN/PNP & NO/NC ; 「S」 = SCR
4. Output status	「Non」 = NO type ; 「B」 = NC type
5. Sensing direction	「Non」 = Horizontal ; 「V」 = Vertical
6. Connection method	「Non」 = Lead wire type ; 「PG」 = M8 lead wire type ; 「M12」 = M12 connector type

## ◆ Guiding of model

Specification	DC type (3 wires)	DC type (2 wires)	AC type (2 wires)
Operating voltage	10 ~ 30 VDC	10 ~ 30 VDC	90 ~ 250 VAC
Power ripple	< 20% of Vp-p	< 20% of Vp-p	50/60Hz
Output current	150 mA max.	5.0 ~ 150 mA max.	100mA max.
Current consumption	10 mA max.	---	2.0mA max.
Residual voltage	< 0.1V	4.0V max.	< 15V
Leakage current	< 0.8 mA	0.8mA max.	< 4.0 mA
Protection circuit	Short-circuit & Polarity reversed	Short-circuit & Polarity reversed	surge absorbing circuit
Protection class	IP-67		

LS/SP/BS/PS/PL/PT/ CPS Series

Model	Output	Sensing Distance	Wire	Operating Voltage	Housing Material	Dimension
LS-02N	NPN	2.0 mm	3 wires	10-30 VDC	PBT	
LS-02NB	NPN	2.0 mm	3 wires	10-30 VDC	PBT	
LS-02P	PNP	2.0 mm	3 wires	10-30 VDC	PBT	
LS-02PB	PNP	2.0 mm	3 wires	10-30 VDC	PBT	
SP-04N	NPN	4.0 mm	3 wires	10-30 VDC	PBT	
SP-04NB	NPN	4.0 mm	3 wires	10-30 VDC	PBT	
SP-04P	PNP	4.0 mm	3 wires	10-30 VDC	PBT	
SP-04PB	PNP	4.0 mm	3 wires	10-30 VDC	PBT	
LS-04N	NPN	4.0 mm	3 wires	10-30 VDC	PBT	
LS-04NB	NPN	4.0 mm	3 wires	10-30 VDC	PBT	
LS-04P	PNP	4.0 mm	3 wires	10-30 VDC	PBT	
LS-04PB	PNP	4.0 mm	3 wires	10-30 VDC	PBT	
BS-02N	NPN	2.0 mm	3 wires	10-30 VDC	PBT	
BS-02NB	NPN	2.0 mm	3 wires	10-30 VDC	PBT	
BS-02P	PNP	2.0 mm	3 wires	10-30 VDC	PBT	
BS-02PB	PNP	2.0 mm	3 wires	10-30 VDC	PBT	
SP-05N	NPN	5.0 mm	3 wires	10-30 VDC	PBT	
SP-05NB	NPN	5.0 mm	3 wires	10-30 VDC	PBT	
SP-05P	PNP	5.0 mm	3 wires	10-30 VDC	PBT	
SP-05PB	PNP	5.0 mm	3 wires	10-30 VDC	PBT	
SP-05C-TW	NO	5.0 mm	2 wires	10-30 VDC	PBT	
SP-05CB-TW	NC	5.0 mm	2 wires	10-30 VDC	PBT	
PP-05N	NPN	5.0 mm	3 wires	10-30 VDC	PBT	
PP-05NB	NPN	5.0 mm	3 wires	10-30 VDC	PBT	
PP-05P	PNP	5.0 mm	3 wires	10-30 VDC	PBT	
PP-05PB	PNP	5.0 mm	3 wires	10-30 VDC	PBT	
PS-05N	NPN	5.0 mm	3 wires	10-30 VDC	PBT	
PS-05NB	NPN	5.0 mm	3 wires	10-30 VDC	PBT	
PS-05P	PNP	5.0 mm	3 wires	10-30 VDC	PBT	
PS-05PB	PNP	5.0 mm	3 wires	10-30 VDC	PBT	
PS-05X	N+P	4W	4W	10-30 VDC	PBT	
PL-05N	NPN	5.0 mm	3 wires	10-30 VDC	PBT	
PL-05NB	NPN	5.0 mm	3 wires	10-30 VDC	PBT	
PL-05P	PNP	5.0 mm	3 wires	10-30 VDC	PBT	
PL-05PB	PNP	5.0 mm	3 wires	10-30 VDC	PBT	
PL-05X	N+P	4W	4W	10-30 VDC	PBT	
PS-10S	SCR	10.0 mm	2 wires	90-250 VAC	PBT	
PS-10SB	SCR	10.0 mm	2 wires	90-250 VAC	PBT	
PS-15S	SCR	15.0 mm	2 wires	90-250 VAC	PBT	
PS-15SB	SCR	15.0 mm	2 wires	90-250 VAC	PBT	
PS-10N	NPN	10.0 mm	3 wires	10-30 VDC	PBT	
PS-10NB	NPN	10.0 mm	3 wires	10-30 VDC	PBT	
PS-10P	PNP	10.0 mm	3 wires	10-30 VDC	PBT	
PS-10PB	PNP	10.0 mm	3 wires	10-30 VDC	PBT	
PS-10X	N+P	4W	4W	10-30 VDC	PBT	
PS-25C	NPN & PNP	25.0 mm	4W	10-30 VDC	PBT	
PS-25CB	NPN & PNP	25.0 mm	M12	10-30 VDC	PBT	
PS-25C-M12	NPN & PNP	25.0 mm	M12	10-30 VDC	PBT	
PS-25C-V	NPN & PNP	25.0 mm	4W	10-30 VDC	PBT	
PS-25C-V-M12	NPN & PNP	25.0 mm	M12	10-30 VDC	PBT	
PS-25C-V-M12	NPN & PNP	25.0 mm	M12	10-30 VDC	PBT	
PSA-02N	NPN	2.0 mm	M12	10-30 VDC	ABS	
PSA-02P	PNP	2.0 mm	M12	10-30 VDC	ABS	
CPS-05N	NPN	5.0 mm	3 wires	10-30 VDC	PP	
CPS-05NB	NPN	5.0 mm	3 wires	10-30 VDC	PP	
CPS-05P	PNP	5.0 mm	3 wires	10-30 VDC	PP	
CPS-05PB	PNP	5.0 mm	3 wires	10-30 VDC	PP	
CPS-30N	NPN	30.0 mm	3 wires	10-30 VDC	PP	
CPS-30NB	NPN	30.0 mm	3 wires	10-30 VDC	PP	
CPS-30P	PNP	30.0 mm	3 wires	10-30 VDC	PP	
CPS-30PB	PNP	30.0 mm	3 wires	10-30 VDC	PP	

Model	Output	Sensing Distance	Wire	Operating Voltage	Housing Material	Dimension
SP-02N	NPN	2.0 mm	3 wires	10-30 VDC	PBT	
SP-02NB	NPN	2.0 mm	3 wires	10-30 VDC	PBT	
SP-02P	PNP	2.0 mm	3 wires	10-30 VDC	PBT	
SP-02PB	PNP	2.0 mm	3 wires	10-30 VDC	PBT	
PP-02N	NPN	2.0 mm	3 wires	10-30 VDC	PBT	
PP-02NB	NPN	2.0 mm	3 wires	10-30 VDC	PBT	
PP-02P	PNP	2.0 mm	3 wires	10-30 VDC	PBT	
PP-02PB	PNP	2.0 mm	3 wires	10-30 VDC	PBT	
LS-04N-V	NPN	4.0 mm	3 wires	10-30 VDC	PBT	
LS-04NB-V	NPN	4.0 mm	3 wires	10-30 VDC	PBT	
LS-04P-V	PNP	4.0 mm	3 wires	10-30 VDC	PBT	
LS-04PB-V	PNP	4.0 mm	3 wires	10-30 VDC	PBT	
BS-04N	NPN	4.0 mm	3 wires	10-30 VDC	PBT	
BS-04NB	NPN	4.0 mm	3 wires	10-30 VDC	PBT	
BS-04P	PNP	4.0 mm	3 wires	10-30 VDC	PBT	
BS-04PB	PNP	4.0 mm	3 wires	10-30 VDC	PBT	
SP-08N	NPN	8.0 mm	3 wires	10-30 VDC	PBT	
SP-08NB	NPN	8.0 mm	3 wires	10-30 VDC	PBT	
SP-08P	PNP	8.0 mm	3 wires	10-30 VDC	PBT	
SP-08PB	PNP	8.0 mm	3 wires	10-30 VDC	PBT	
SP-08C-TW	NO	8.0 mm	2 wires	10-30 VDC	PBT	
SP-08CB-TW	NC	8.0 mm	2 wires	10-30 VDC	PBT	
PP-08N	NPN	8.0 mm	3 wires	10-30 VDC	PBT	
PP-08NB	NPN	8.0 mm	3 wires	10-30 VDC	PBT	
PP-08P	PNP	8.0 mm	3 wires	10-30 VDC	PBT	
PP-08PB	PNP	8.0 mm	3 wires	10-30 VDC	PBT	
PS-08N	NPN	8.0 mm	3 wires	10-30 VDC	PBT	
PS-08NB	NPN	8.0 mm	3 wires	10-30 VDC	PBT	
PS-08P	PNP	8.0 mm	3 wires	10-30 VDC	PBT	
PS-08PB	PNP	8.0 mm	3 wires	10-30 VDC	PBT	
PS-08X	N+P	4W	4W	10-30 VDC	PBT	
PL-08N	NPN	8.0 mm	3 wires	10-30 VDC	PBT	
PL-08NB	NPN	8.0 mm	3 wires	10-30 VDC	PBT	
PL-08P	PNP	8.0 mm	3 wires	10-30 VDC	PBT	
PL-08PB	PNP	8.0 mm	3 wires	10-30 VDC	PBT	
PL-08X	N+P	4W	4W	10-30 VDC	PBT	
PS-05S	SCR	5.0 mm	2 wires	90-250 VAC	PBT	
PS-05SB	SCR	5.0 mm	2 wires	90-250 VAC	PBT	
PS-08S	SCR	8.0 mm	2 wires	90-250 VAC	PBT	
PS-08SB	SCR	8.0 mm	2 wires	90-250 VAC	PBT	
PS-15N	NPN	15.0 mm	3 wires	10-30 VDC	PBT	
PS-15NB	NPN	15.0 mm	3 wires	10-30 VDC	PBT	
PS-15P	PNP	15.0 mm	3 wires	10-30 VDC	PBT	
PS-15PB	PNP	15.0 mm	3 wires	10-30 VDC	PBT	
PS-15X	N+P	4W	4W	10-30 VDC	PBT	
SP-25C	NPN & PNP	25.0 mm	4 wires	10-30 VDC	PBT	
SP-25CB	NPN & PNP	25.0 mm	4 wires	10-30 VDC	PBT	
PP-25N	NPN	25.0 mm	3 wires	10-30 VDC	PBT	
PP-25NB	NPN	25.0 mm	3 wires	10-30 VDC	PBT	
PP-25P	PNP	25.0 mm	3 wires	10-30 VDC	PBT	
PP-25PB	PNP	25.0 mm	3 wires	10-30 VDC	PBT	
CPWS-30N	NPN	30.0 mm	3 wires	10-30 VDC	PP	
CPWS-30NB	NPN	30.0 mm	3 wires	10-30 VDC	PP	
CPWS-30P	PNP	30.0 mm	3 wires	10-30 VDC	PP	
CPWS-30PB	PNP	30.0 mm	3 wires	10-30 VDC	PP	

※ Connection wires  
 Brown (棕) : +V Blue (青) : 0V  
 Black (黒) : Open White (白) : Close

PT04/PM05/EX05/PM08/TW08/EX08 Series

Model	Output	Sensing Distance	Wire	Operating Voltage	Housing Material	Dimension
PT04-01NS	NPN	0.8 mm	3 wires	10-30 VDC	SUS 304	
PT04-01NBS	NPN	0.8 mm	3 wires	10-30 VDC	SUS 304	
PT04-01PS	PNP	0.8 mm	3 wires	10-30 VDC	SUS 304	
PT04-01PBS	PNP	0.8 mm	3 wires	10-30 VDC	SUS 304	
PT04-01N	NPN	0.8 mm	3 wires	10-30 VDC	SUS 304	
PT04-01NB	NPN	0.8 mm	3 wires	10-30 VDC	SUS 304	
PT04-01P	PNP	0.8 mm	3 wires	10-30 VDC	SUS 304	
PT04-01PB	PNP	0.8 mm	3 wires	10-30 VDC	SUS 304	
EX04-01N	NPN	0.8 mm	3 wires	10-30 VDC	SUS 304	
EX04-01NB	NPN	0.8 mm	3 wires	10-30 VDC	SUS 304	
EX04-01P	PNP	0.8 mm	3 wires	10-30 VDC	SUS 304	
EX04-01PB	PNP	0.8 mm	3 wires	10-30 VDC	SUS 304	
PM05-01NS	NPN	0.8 mm	3 wires	10-30 VDC	Cu plated Ni	
PM05-01NBS	NPN	0.8 mm	3 wires	10-30 VDC	Cu plated Ni	
PM05-01PS	PNP	0.8 mm	3 wires	10-30 VDC	Cu plated Ni	
PM05-01PBS	PNP	0.8 mm	3 wires	10-30 VDC	Cu plated Ni	
PM05-01NS-K	NPN	0.8 mm	3 wires	10-30 VDC	SUS 304	
PM05-01NBS-K	NPN	0.8 mm	3 wires	10-30 VDC	SUS 304	
PM05-01PS-K	PNP	0.8 mm	3 wires	10-30 VDC	SUS 304	
PM05-01PBS-K	PNP	0.8 mm	3 wires	10-30 VDC	SUS 304	
PM05-01N	NPN	0.8 mm	3 wires	10-30 VDC	Cu plated Ni	
PM05-01NB	NPN	0.8 mm	3 wires	10-30 VDC	Cu plated Ni	
PM05-01P	PNP	0.8 mm	3 wires	10-30 VDC	Cu plated Ni	
PM05-01PB	PNP	0.8 mm	3 wires	10-30 VDC	Cu plated Ni	
EX05-01N-K	NPN	0.8 mm	3 wires	10-30 VDC	SUS 304	
EX05-01NB-K	NPN	0.8 mm	3 wires	10-30 VDC	SUS 304	
EX05-01P-K	PNP	0.8 mm	3 wires	10-30 VDC	SUS 304	
EX05-01PB-K	PNP	0.8 mm	3 wires	10-30 VDC	SUS 304	
EX05-01N-V-K	NPN	0.8 mm	3 wires	10-30 VDC	SUS 304	
EX05-01NB-V-K	NPN	0.8 mm	3 wires	10-30 VDC	SUS 304	
EX05-01P-V-K	PNP	0.8 mm	3 wires	10-30 VDC	SUS 304	
EX05-01PB-V-K	PNP	0.8 mm	3 wires	10-30 VDC	SUS 304	
PM05-01N-P	NPN	0.8 mm	3 wires	10-30 VDC	PP	
PM05-01NB-P	NPN	0.8 mm	3 wires	10-30 VDC	PP	
PM05-01P-P	PNP	0.8 mm	3 wires	10-30 VDC	PP	
PM05-01PB-P	PNP	0.8 mm	3 wires	10-30 VDC	PP	
PM08-01NSE	NPN	1.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM08-01NBSE	NPN	1.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM08-01PSE	PNP	1.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM08-01PBSE	PNP	1.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM08-01NE	NPN	1.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM08-01NBE	NPN	1.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM08-01PE	PNP	1.0 mm	3 wires	10-30 VDC	Cu plated Ni	

PM12/TW12/EX12/CP Series

Model	Output	Sensing Distance	Wire	Operating Voltage	Housing Material	Dimension
PM12-02NS	NPN	2.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM12-02NBS	NPN	2.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM12-02PS	PNP	2.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM12-02PBS	PNP	2.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM12-02N	NPN	2.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM12-02NB	NPN	2.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM12-02P	PNP	2.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM12-02PB	PNP	2.0 mm	3 wires	10-30 VDC	Cu plated Ni	
TW12-02C	NO	2.0 mm	2 wires	10-30 VDC	Cu plated Ni	
TW12-02CB	NC	2.0 mm	2 wires	10-30 VDC	Cu plated Ni	
PM12-02S	SCR	2.0 mm	2 wires	90-250 VAC	Cu plated Ni	
PM12-02SB	SCR	2.0 mm	2 wires	90-250 VAC	Cu plated Ni	
PM12-02N-E	NPN	2.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM12-02NB-E	NPN	2.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM12-02P-E	PNP	2.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM12-02PB-E	PNP	2.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM12-02XE	N+P NO/NC	2.0 mm	4 wires	10-30 VDC	Cu plated Ni	
TW12-02C-E	NO	2.0 mm	2 wires	10-30 VDC	Cu plated Ni	
TW12-02CB-E	NC	2.0 mm	2 wires	10-30 VDC	Cu plated Ni	
PM12E-05N-E	NPN	5.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM12E-05NB-E	NPN	5.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM12E-05P-E	PNP	5.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM12E-05PB-E	PNP	5.0 mm	3 wires	10-30 VDC	Cu plated Ni	
TW12E-05C-E	NO	5.0 mm	2 wires	10-30 VDC	Cu plated Ni	
TW12E-05CB-E	NC	5.0 mm	2 wires	10-30 VDC	Cu plated Ni	
PM12-02N-M12	NPN	2.0 mm	M12	10-30 VDC	Cu plated Ni	
PM12-02NB-M12	NPN	2.0 mm	M12	10-30 VDC	Cu plated Ni	
PM12-02P-M12	PNP	2.0 mm	M12	10-30 VDC	Cu plated Ni	
PM12-02PB-M12	PNP	2.0 mm	M12	10-30 VDC	Cu plated Ni	
PM12-02XM12	N+P NO/NC	2.0 mm	M12	10-30 VDC	Cu plated Ni	
TW12-02C-M12	NO	2.0 mm	M12	10-30 VDC	Cu plated Ni	
TW12-02CB-M12	NC	2.0 mm	M12	10-30 VDC	Cu plated Ni	
PM12E-05N-M12	NPN	5.0 mm	M12	10-30 VDC	Cu plated Ni	
PM12E-05NB-M12	NPN	5.0 mm	M12	10-30 VDC	Cu plated Ni	
PM12E-05P-M12	PNP	5.0 mm	M12	10-30 VDC	Cu plated Ni	
PM12E-05PB-M12	PNP	5.0 mm	M12	10-30 VDC	Cu plated Ni	
PM12E-05XM12	N+P NO/NC	5.0 mm	M12	10-30 VDC	Cu plated Ni	
TW12E-05C-M12	NO	5.0 mm	M12	10-30 VDC	Cu plated Ni	
TW12E-05CB-M12	NC	5.0 mm	M12	10-30 VDC	Cu plated Ni	
PM12-04N-P	NPN	4.0 mm	3 wires	10-30 VDC	PP	
PM12-04NB-P	NPN	4.0 mm	3 wires	10-30 VDC	PP	
PM12-04P-P	PNP	4.0 mm	3 wires	10-30 VDC	PP	
PM12-04PB-P	PNP	4.0 mm	3 wires	10-30 VDC	PP	
EX12-03N	NPN	3.0 mm	3 wires	10-30 VDC	Cu plated Ni	
EX12-03NB	NPN	3.0 mm	3 wires	10-30 VDC	Cu plated Ni	
EX12-03P	PNP	3.0 mm	3 wires	10-30 VDC	Cu plated Ni	
EX12-03PB	PNP	3.0 mm	3 wires	10-30 VDC	Cu plated Ni	
EX12-03N-V	NPN	3.0 mm	3 wires	10-30 VDC	Cu plated Ni	
EX12-03NB-V	NPN	3.0 mm	3 wires	10-30 VDC	Cu plated Ni	
EX12-03P-V	PNP	3.0 mm	3 wires	10-30 VDC	Cu plated Ni	
EX12-03PB-V	PNP	3.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM12-02LV	0-10 V	0-2.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM12-02LA	4-20 mA	0-2.0 mm	3 wires	10-30 VDC	Cu plated Ni	
CP08-06N	NPN	6.0 mm	3 wires	10-30 VDC	PP	
CP08-06NB	NPN	6.0 mm	3 wires	10-30 VDC	PP	
CP08-06P	PNP	6.0 mm	3 wires	10-30 VDC	PP	
CP08-06PB	PNP	6.0 mm	3 wires	10-30 VDC	PP	
CP12-10N	NPN	10.0 mm	3 wires	10-30 VDC	PP	
CP12-10NB	NPN	10.0 mm	3 wires	10-30 VDC	PP	
CP12-10P	PNP	10.0 mm	3 wires	10-30 VDC	PP	
CP12-10PB	PNP	10.0 mm	3 wires	10-30 VDC	PP	

Model	Output	Sensing Distance	Wire	Operating Voltage	Housing Material	Dimension
PM12-04NS	NPN	4.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM12-04NBS	NPN	4.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM12-04PS	PNP	4.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM12-04PBS	PNP	4.0 mm	3 wires	10-30 VDC	Cu plated Ni	
TW12-04C	NO	4.0 mm	2 wires	10-30 VDC	Cu plated Ni	
TW12-04CB	NC	4.0 mm	2 wires	10-30 VDC	Cu plated Ni	
PM12-04N	NPN	4.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM12-04NB	NPN	4.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM12-04P	PNP	4.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM12-04PB	PNP	4.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM12-04S	SCR	4.0 mm	2 wires	90-250 VAC	Cu plated Ni	
PM12-04SB	SCR	4.0 mm	2 wires	90-250 VAC	Cu plated Ni	
PM12-04N-E	NPN	4.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM12-04NB-E	NPN	4.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM12-04P-E	PNP	4.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM12-04PB-E	PNP	4.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM12-04XE	N+P NO/NC	4.0 mm	4 wires	10-30 VDC	Cu plated Ni	
TW12-04C-E	NO	4.0 mm	2 Wires	10-30 VDC	Cu plated Ni	
TW12-04CB-E	NC	4.0 mm	2 Wires	10-30 VDC	Cu plated Ni	
PM12E-08N-E	NPN	8.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM12E-08NB-E	NPN	8.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM12E-08P-E	PNP	8.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM12E-08PB-E	PNP	8.0 mm	3 wires	10-30 VDC	Cu plated Ni	
TW12E-08C-E	NO	8.0 mm	2 Wires	10-30 VDC	Cu plated Ni	
TW12E-08CB-E	NC	8.0 mm	2 Wires	10-30 VDC	Cu plated Ni	
PM12-04N-M12	NPN	4.0 mm	M12	10-30 VDC	Cu plated Ni	
PM12-04NB-M12	NPN	4.0 mm	M12	10-30 VDC	Cu plated Ni	
PM12-04P-M12	PNP	4.0 mm	M12	10-30 VDC	Cu plated Ni	
PM12-04PB-M12	PNP	4.0 mm	M12	10-30 VDC	Cu plated Ni	
PM12-04XM12	N+P NO/NC	4.0 mm	M12	10-30 VDC	Cu plated Ni	
TW12-04C-M12	NO	4.0 mm	M12	10-30 VDC	Cu plated Ni	
TW12-04CB-M12	NC	4.0 mm	M12	10-30 VDC	Cu plated Ni	
PM12E-08N-M12	NPN	8.0 mm	M12	10-30 VDC	Cu plated Ni	
PM12E-08NB-M12	NPN	8.0 mm	M12	10-30 VDC	Cu plated Ni	
PM12E-08P-M12	PNP	8.0 mm	M12	10-30 VDC	Cu plated Ni	
PM12E-08PB-M12	PNP	8.0 mm	M12	10-30 VDC	Cu plated Ni	
PM12E-08XM12	N+P NO/NC	8.0 mm	M12	10-30 VDC	Cu plated Ni	
TW12E-08C-M12	NO	8.0 mm	M12	10-30 VDC	Cu plated Ni	
TW12E-08CB-M12	NC	8.0 mm	M12	10-30 VDC	Cu plated Ni	
PM12-04S-P	SCR	4.0 mm	2 wires	90-250 VAC	PP	
PM12-04SB-P	SCR	4.0 mm	2 wires	90-250 VAC	PP	
EX12-05N	NPN	5.0 mm	3 wires	10-30 VDC	Cu plated Ni	
EX12-05NB	NPN	5.0 mm	3 wires	10-30 VDC	Cu plated Ni	
EX12-05P	PNP	5.0 mm	3 wires	10-30 VDC	Cu plated Ni	
EX12-05PB	PNP	5.0 mm	3 wires	10-30 VDC	Cu plated Ni	
EX12-05N-V	NPN	5.0 mm	3 wires	10-30 VDC	Cu plated Ni	
EX12-05NB-V	NPN	5.0 mm	3 wires	10-30 VDC	Cu plated Ni	
EX12-05P-V	PNP	5.0 mm	3 wires	10-30 VDC	Cu plated Ni	
EX12-05PB-V	PNP	5.0 mm	3 wires	10-30 VDC	Cu plated Ni	
PM12-05LV	0-10 V	0-5.				

### Magmatic Sensor



- ※ High compact
- ※ High Reliability
- ※ High Noise Resistance
- ※ Short circuit protection
- ※ High protection class IP-67

#### Guiding of model

#### FC Series

$$\frac{FC - 20}{1} \frac{R - H}{2} \frac{- M}{3} \frac{- 2M}{4} \frac{- 2M}{5}$$

- Series** 「FC」 = Magnetic sensor ; 「MS」 = M8 Tubular type
- Model** 「20」 = Plastic housing ; 「11」 = Plastic housing  
「05」 = Plastic housing ; 「08」 = M8
- Output method** 「R」 = Reed contact ; 「RE」 = Output protection ; 「RN」 = Reed contact NPN  
「RP」 = Reed contact PNP ; 「N」 = NPN output ; 「P」 = PNP output  
「D」 = Two wire solid state output
- Sensitivity or Output status** 「Non」 = Standard sensitivity (< 80 Gauss) ; 「H」 = High sensitivity (< 40 Gauss)  
「L」 = Low sensitivity (< 120 Gauss) ; 「B」 = NC type
- Connection** 「2M」 = 2m cable ; 「1M」 = 1m cable ; 「4M」 = 4m cable  
「PG」 = M8 connector Lead wire ; 「PE」 = Plastic connector Lead wire

Model	Output	Wire	Operating Voltage	Output Current	Sensor	Housing Material	Outline	Model	Output	Wire	Operating Voltage	Output Current	Sensor	Housing Material	Outline
FC-20R	a*	2W	5~240V	0.5A	Reed	Nylon		FC-20zR	a*	2W	5~240V	0.5A	Reed	Zn alloy	
FC-20RE	a*	2W	5~60VDC	150 mA				FC-20zRE	a*	2W	5~60VDC				
FC-20RN	NPN	3W	5~30VDC					FC-20zRN	NPN	3W	5~30VDC				
FC-20RP	PNP	3W	5~30VDC	150 mA	Hall	Nylon		FC-20zRP	PNP	3W	5~30VDC	Hall	Zn alloy		
FC-20D	T*	2W	10~30VDC					FC-20zD	T*	2W	10~30VDC				
FC-20N	NPN	3W	5~30VDC	150 mA	Hall	Nylon		FC-20zN	NPN	3W	5~30VDC	Hall	Zn alloy		
FC-20P	PNP	3W	5~30VDC					FC-20zP	PNP	3W	5~30VDC				
FC-05R	a*	2W	5~240V	0.5A	Reed	Nylon		FC-05zR	a*	2W	5~240V	0.5A	Reed	Zn alloy	
FC-05RE	a*	2W	5~60VDC	FC-05zRE				a*	2W	5~60VDC					
FC-05D	T*	2W	10~30VDC	FC-05zD				T*	2W	10~30VDC					
FC-05N	NPN	3W	5~30VDC	150 mA	Hall	Nylon		FC-05zN	NPN	3W	5~30VDC	Hall	Zn alloy		
FC-05P	PNP	3W	5~30VDC					FC-05zP	PNP	3W	5~30VDC				
FC-11R	a*	2W	5~240V	0.5A	Reed	Nylon		FC-58zR	a*	2W	5~240V	0.5A	Reed	Zn alloy	
FC-11D	T*	2W	10~30VDC	FC-58zD				T*	2W	10~30VDC					
FC-11N	NPN	3W	5~30VDC	FC-58zRN				NPN	3W	5~30VDC					
FC-11P	PNP	3W	5~30VDC	50 mA	Hall	Nylon		FC-58zRP	PNP	3W	5~30VDC	Hall	Zn alloy		
FC-36D	T*	2W	10~30VDC					FC-36zD	T*	2W	10~30VDC				
FC-36N	NPN	3W	5~30VDC	50 mA	Hall	Nylon		FC-36zN	NPN	3W	10~30VDC	Hall	Zn alloy		
FC-36P	PNP	3W	5~30VDC					FC-36zP	PNP	3W	5~30VDC				
FC-37D	T	2W	10~30VDC	50 mA	Hall	Nylon		FC-10D	T	2W	10~30VDC	Hall	ABS		
FC-37N	NPN	3W	5~30VDC					FC-10N	NPN	3W	5~30VDC				
FC-37P	PNP	3W	5~30VDC	150 mA	Hall	Nylon		FC-10P	PNP	3W	5~30VDC	Hall	Nylon		
FC-47R	a*	2W	5~240V					FC-48R	接貼	2W	5~240V				0.5A
FC-47D	T*	2W	10~30VDC	FC-48D	T*	2W	10~30VDC	150 mA							
FC-47N	NPN	3W	5~30VDC	FC-48N	NPN	3W	5~30VDC	150 mA							
FC-47P	PNP	3W	5~30VDC	150 mA	Hall	Nylon		FC-48P	PNP	3W	5~30VDC	Hall	Zn alloy		
FC-50R	a*	2W	5~240V					FC-50SR	a*	2W	5~240V				0.5A
FC-50D	T*	2W	10~30VDC	FC-50SD	T*	2W	10~30VDC	150 mA							
FC-50N	NPN	3W	5~30VDC	FC-50SN	NPN	3W	5~30VDC	150 mA							
FC-50P	PNP	3W	5~30VDC	150 mA	Hall	Nylon		FC-50SP	PNP	3W	5~30VDC	Hall	Zn alloy		
FC-53R	a*	2W	5~240V					FC-59R	a*	2W	5~240V				0.5A
FC-53D	T*	2W	10~30VDC	FC-59D	T*	2W	10~30VDC	150 mA							
FC-53N	NPN	3W	5~30VDC	FC-59N	NPN	3W	5~30VDC	150 mA							
FC-53P	PNP	3W	5~30VDC	150 mA	Hall	Nylon		FC-59P	PNP	3W	5~30VDC	Hall	Zn alloy		
FC-06R	a*	2W	5~240V					FC-06zR	a*	2W	5~240V				0.5A
FC-06D	T*	2W	10~30VDC	FC-06zD	T*	2W	10~30VDC	150 mA							
FC-06N	NPN	3W	5~30VDC	FC-06zN	NPN	3W	5~30VDC	150 mA							
FC-06P	PNP	3W	5~30VDC	150 mA	Hall	Zn alloy		FC-06zP	PNP	3W	5~30VDC	Hall	Zn alloy		
FC-07R	a*	2W	5~240V					FC-07zR	a*	2W	5~240V				0.5A
FC-07D	T*	2W	10~30VDC	FC-07zD	T*	2W	10~30VDC	150 mA							
FC-07N	NPN	3W	5~30VDC	FC-07zN	NPN	3W	5~30VDC	150 mA							
FC-07P	PNP	3W	5~30VDC	150 mA	Hall	Zn alloy		FC-07zP	PNP	3W	5~30VDC	Hall	Zn alloy		

※Remarks : Note : 「a\*」 = Contact output ; 「T\*」 = Two wires Transister output

### MS08/FC08/FC12/FC18 Series

Model	Output	Wire	Operating Voltage	Output Current	Sensor	Housing Material	Outline	Model	Output	Wire	Operating Voltage	Output Current	Sensor	Housing Material	Outline			
MS08-10N	NPN	3W	5~30VDC	150 mA	Hall	Cu plated Ni		FC-08R	a*	2W	5~240V	0.1A	Reed	Cu plated Ni				
MS08-10P	PNP	3W	5~30VDC	150 mA				FC-08D	T*	2W	10~30VDC	150 mA				Hall	PP	
								FC-08N	NPN	3W	5~30VDC							
FC-12R	a*	2W	5~240V	0.5A	Hall	Cu plated Ni		FC-18R	a*	2W	5~240V	0.5A	Reed	PP				
FC-12D	T*	2W	10~30VDC	150 mA				FC-18D	T*	2W	10~30VDC	150 mA				Hall	PC	
FC-12N	NPN	3W	5~30VDC					FC-18N	NPN	3W	5~30VDC							
FC-T12R	a*	2W	5~240V	0.1A	Hall	PC		FC-T12N	NPN	3W	5~30VDC	150 mA	Hall	PC				
FC-T12D	T*	2W	10~30VDC	150 mA				FC-T12P	PNP	3W	5~30VDC							

#### Fixed parts

PNS / PNA (for FC-20)		BSS / BSA (for FC-48) / BES / BEA (for FC-04)				PH (for FC-20)	
		Alumina alloy cylinder		Stainless steel cylinder			
		Model	Inner dia.	Outer dia.	Model	Inner dia.	Outer dia.
		BSA-20 / BEA-20	20φ	25φ	BSS-06 / BES-06	6φ	8.5φ
		BSA-25 / BEA-25	25φ	30φ	BSS-08 / BES-08	8φ	10φ
		BSA-30 / BEA-30	30φ	35φ	BSS-10 / BES-10	10φ	11φ
		BSA-32 / BEA-32	32φ	38φ	BSS-12 / BES-12	12φ	13.2φ
		BSA-40 / BEA-40	40φ	47φ	BSS-16 / BES-16	16φ	17φ
		BSA-50 / BEA-50	50φ	58φ	BSS-20 / BES-20	20φ	21.5φ
		BSA-63 / BEA-63	63φ	72φ	BSS-25 / BES-25	25φ	26.5φ
		BSA-80 / BEA-80	80φ	89φ	BSS-32 / BES-32	32φ	33.5φ
		BSA-100 / BEA-100	100φ	110φ	BSS-40 / BES-40	40φ	42φ
					BSS-50 / BES-50	50φ	52φ
					BSS-63 / BES-63	63φ	65φ
						MS-06	
						MS-59	
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## Pressure Meter & Sensor

### PRT&PRS Series Digital Pressure Meter

- Approved :
- Meter face is rotatable
- Accuracy : Precision type :  $\pm 0.3\%$  max. ; Normal type :  $\pm 1.0\%$  max.
- Communication : RS-485 or Transmitter : 4 ~ 20 mA available
- Alarm out : NPN or PNP or Relay
- Pressure unit : Bar / Psi / KPa / Kg/cm2 / mmHg / mmAq or others
- Wetted parts material : SUS-316L or PP or PVDF are available



### Guiding of model

#### PRT - DF - 10 S R - mA - SUS - 14PT - M12 - PG4C

1. Series	「PRT」= 3" Tri display pressure meter ; 「PRS」= 3" Single display pressure meter ; 「PRS-DF」= 3" Twin face display pressure meter 「PRK」= 3" Panel type Single display pressure meter ; 「PRX」= 2" Single display pressure meter 「PRZ」= 2" Panel type Single display pressure meter ; 「PRD」= 30Φ Single display pressure meter
2. Direction	「non」= Single face ; 「DF」= Double face ; 「PF」= PRZ 2.5" Panel type
3. Measuring range	「C10K」= -10.00 ~ +10.00 Kpa ; 「P10K」= 0 ~ +10.00 Kpa ; 「P30K」= 0 ~ +30.00 Kpa ; 「C1」= -1.00 ~ 1.00 Bar 「C10」= -1.00 ~ 10.00 Bar ; 「01」= 0.00 ~ 1.00 Bar ; 「10」= 0.00 ~ 10.00 Bar ; 「30」= 0.00 ~ 30.00 Bar 「100」= 0.0 ~ 100.0 Bar ; 「250」= 0 ~ 250 Bar ; 「400」= 0 ~ 400 Bar ; 「600」= 0 ~ 600 Bar 「Hg」= mmHg (Torr) ; 「Aq」= mmAq [Special pressure range or pressure unit are accepted to produce]
4. Type	「S」= Precision type ; 「T」= Teflon type ; 「non」= Normal type
5. Output	「non」= no output ; 「P」= PNP*2 ; 「N」= NPN*2 ; 「R」= Relay*2
6. Option	「RS」= with RS-485 ; 「non」= without RS-485 ; 「mA」= 4~20mA ; 「V」= 0~10V
7. Port material	「TF」= PVDF ; 「PP」= PP ; 「SUS」= SUS-316L
8. Tooth rule	「14PT」= PT 1/4"-3.2Φ ; 「14PTS」= PT 1/4"-0.6Φ ; 「14PTL」= PT 1/4"-8Φ ; 「14G」= G 1/4"-4.2Φ ; 「14GS」= G 1/4"-0.6Φ 「14GL」= G 1/4"-8Φ ; 「18PT」= PT 1/8" ; 「12NPT」= NPT 1/2" ; 「12FNPT」= FNPT 1/2" ; 「716M」= 7/16"-20UNF ; 「716F」= 7/16"-20UNF
9. Connection	「non」= Lead wire 2m ; 「5M」= Lead wire 5m ; 「M12」= M12 connection
10. Wires	「non」= 8 cores ; 「4C」= 4 cores ; 「PG-4C」= 4C/M12 Lead wire ; 「PG-8C」= 8C/M12 Lead wire



### PRC Series Battery type LCD Pressure meter

- Approved :
- Lowest current consumption : 2μA max.
- Multi economy mode : Battery life is prolonged over 5 years
- High / Low alarm is settable : Decimal point 0 ~ 2
- Power supply by Carbon Zinc battery (3A) : Economy & Easy to obtain



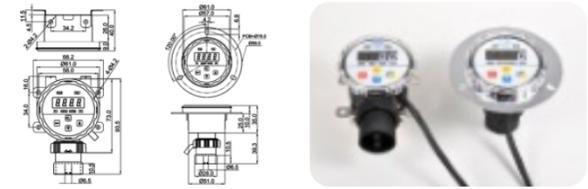
### Guiding of model

#### PRC - 100K S - TF - 12FNPT

1. Series	「PRC」= Battery LCD display pressure meter	3. Type	「S」= Precision type ; 「non」= Normal type
2. Measure range	「100KS」= 「-100~+100KPa」 or 「0 ~ +100KPa」 or 「-100 ~ 0 KPa」 「30」= 「-1 ~ +30Bar」 or 「0 ~ +30Bar」 「100」= 「0 ~ +100Bar」 or 「-1 ~ +100Bar」 「400」= 「0 ~ +400Bar」 or 「-1 ~ +400Bar」 ※「1.0 Bar」= 「1.02 Kg/cm2」= 「14.5 Psi」= 「0.1 MPa」= 「100 KPa」	4. Port material	「TF」= PVDF ; 「PP」= PP ; 「SUS」= SUS-316L
		5. Tooth rule	「14PT」= PT 1/4"-3.2Φ ; 「14G」= G 1/4"-4.2Φ 「12NPT」= NPT 1/2" ; 「12FNPT」= FNPT 1/2" 「716M」= 7/16"-20UNF ; 「716F」= 7/16"-20UNF

### DPM series Wind Velocity Meter & Differential Pressure Meter

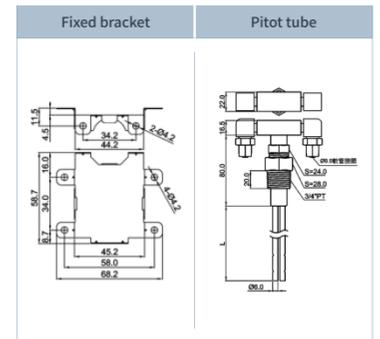
- Correction coefficient settable
- Peak & valley value display
- Linearity accuracy 0.5% of FS
- Communication or transmitter available



### Guiding of model

#### DPM - PF - 1K N - RS - M12 - PG4C

1. Series	「DPM」= 2" Differential pressure meter ; 「WVM」= 2" Wind velocity meter
2. Type	「PF」= 2.5" Panel type ; 「non」= Exposed type
3. Measuring range	「1K」= -1000Pa ~ +1000Pa ; 「5K」= -5.00KPa ~ +5.00Kpa 「50K」= -50.00KPa ~ +50.00KPa
4. Output method	「N」= NPN*2 or 「P」= PNP*2 or 「non」= Without output
5. Optioned	「RS」= with RS-485 ; 「mA」= 4~20mA ; 「V」= 0~10V or 「non」= Without
6. Connection	「2M」= Lead wire 2m ; 「M12」= M12 connection
7. Port material	「TF」= PVDF ; 「PP」= PP ; 「SUS」= SUS-316L



### PRA/PRV Series Compact Pressure Transmitter

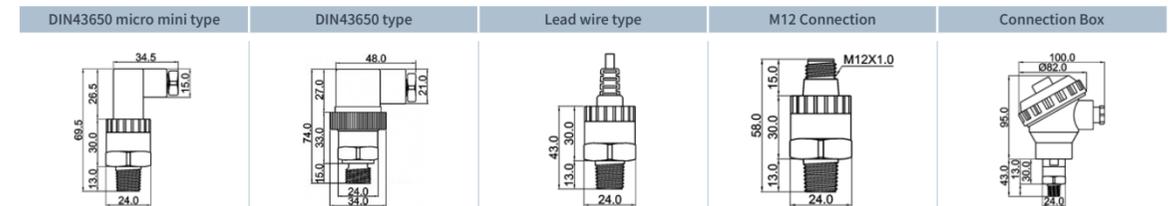
- Ceramic pressure sensor suited to chemical fluids
- Accuracy less than  $\pm 0.3\%$  of F.S.
- Repeatability less than  $\pm 0.3\%$  of F.S.
- Overload pressure over 200% of rated pressure.
- Burst pressure over 300% of rated pressure.
- Wetted parts material with 「PVDF」 or 「PP」 or 「SUS-316L」



### Guiding of model

#### PRA - 01 S - TF - 14PTL - M12

1. Series	「PRA」= O/P = 4~20mA 「PRV」= O/P = 0 ~ 10V or 0~5V or 1~5V or 1~6V	4. Port material	「TF」= PVDF ; 「SUS」= SUS-316L ; 「PP」= PP
2. Measure range	「P10K」= Range = 0~10.0KPa ; 「30」= Range = 0~30.0Bar 「N1」= Range = -1.0~0.0Bar ; 「100」= Range = 0~100Bar 「C1」= Range = -1.0 ~ +1.0Bar ; 「250」= Range = 0~250Bar 「P6」= Range = 0~0.6Bar ; 「400」= Range = 0~400Bar 「01」= Range = 0~1.0Bar ; 「600」= Range = 0~600Bar 「10」= Range = 0~10.0Bar	5. Tooth rule	「14PT」= PT 1/4"-3.2Φ ; 「14PTS」= PT 1/4"-0.6Φ 「14PTL」= PT 1/4"-8Φ ; 「14G」= G 1/4"-4.2Φ 「14GS」= G 1/4"-0.6Φ ; 「14GL」= G 1/4"-8Φ 「18PT」= PT 1/8" ; 「12NPT」= NPT 1/2" 「12FNPT」= FNPT 1/2" ; 「716M」= 7/16"-20UNF (male) 「716F」= 7/16"-20UNF (Female)
3. Type	「S」= 精密型 ; 「T」= Teflon type ; 「non」= Normal type	6. Connection	「non」= DIN 43650A micro mini ; 「LM」= DIN 43650 「BX」= Connection box ; 「M12」= M12 connector 「2M」= 2m lead wire ; 「0.5M」= 0.5m lead wire



Type	Precision type	Normal type
Pressure sensor	SUS-316L	Ceramic (AL2 O3 96%)
Accuracy (Max.)	$\pm 0.3\%$ of F.S. @ 25°C max.	$\pm 1.0\%$ of F.S. @ 25°C max.
Repeatability	$\leq \pm 0.3\%$ FS max.	$\leq \pm 1.0\%$ FS max.
Zero stability	@ 25°C $\pm 0.05\%$ FSO	@ 25°C $\pm 0.1\%$ FSO
Thermal drift	@ 25°C $\pm 0.05\%$ FSO	@ 25°C $\pm 0.1\%$ FSO
Pressure port temperature	$\pm 0.05\%$ FS / °C	$\pm 0.1\%$ FS / °C
Measured fluids	Water or Chemical fluid or gases	

AT/KT Series Flow Sensor & Flow Meter

- Approved :
- Accuracy : ± 1.0% of FS max
- Pulse rate (K - factor) is settable
- Unit of Flow total meter is selectable (Liter/Gallon/Kilo-liter)
- Status of Flow rate meter limit output (NO/NC) is changeable
- Unit of pulse is selectable (LPM/GPM/KLPM)
- Power on delay time is settable for Flow rate meter limit output
- AT series display unit may be installed in four directions



Guiding of model

ATP - 15 - RS - PF - DIN - M12

1. Series	「KTM」/「ATM」= Flow rate Meter & Flow total meter with transmitter 「KTP」/「ATP」= Flow rate Meter & Flow total meter 「KTS」/「ATS」= Flow rate Meter ; 「KTW」= Flow Sensor 「KTE」= Flow rate Meter with Communication or Transmitter	4. Material of Union	「PP」= PP 「PF」= PVDF 「PVC」= PVC 「ST」= SUS 316
2. Pipe size	「08」= 「DN08 (1/4")」 / 「10」= 「DN10 (3/8")」 「15」= 「DN15 (1/2")」 / 「20」= 「DN20 (3/4")」 「25」= 「DN25 (1")」 / 「40」= 「DN40 (1 1/2")」 「50」= 「DN50 (2")」 / 「65」= 「DN65 (2 1/2")」 「80」= 「DN80 (3")」 / 「100」= 「DN100 (4")」	5. Pipe standard	「DIN」= DIN standard 「JIS」= JIS standard 「ANSI」= ANSI standard 「FA」= Clamping type 「FG」= Flange type
3. Option	「Non」= Standard type 「RS」= KTP & ATP & KTE series with MODBUS communication 「A」= KTM & ATM & KTE series with Transmitter (4 ~ 20mA) 「V」= KTM & ATM & KTE series with Transmitter (0 ~ 5V) 「P」= KTW & ATW series pulse output only	6. Connection method	「Non」= Lead wire(3m) 「5m」= Lead wire(5m) 「M12」= Connector M12

KI Series Inserted type Flow Meter & Flow Sensor

- Approved :
- Gas-proof structure are suited for corrosion surroundings
- Accuracy : ± 1.0% of FS max
- Pulse rate (K - factor) is settable
- Unit of Flow total meter is selectable (Liter/Gallon/Kilo-liter)
- Status of Flow rate meter limit output (NO/NC) is changeable
- Unit of pulse is selectable (LPM/GPM/KLPM)
- Power on delay time is settable for Flow rate meter limit output



Guiding of model

<b>KIC - TF - S</b> 1 2 3	<b>KIP - TF - S - RS - M12</b> 1 2 3 4 5	<b>KIB - TF - S - RS</b> 1 2 3 4	<b>KIW - TF - S - MM</b> 1 2 3 5

1. Series	「KIM」= Flow rate Meter & Flow total meter with transmitter 「KIP」= Flow rate Meter & Flow total meter (RS-485 optioned) 「KIC」= Battery type flow meter 「KIB」= Flow rate Meter or Sensor 「KIW」= Flow Sensor	4. Option	「Non」= Standard type 「RS」= KIP & KIB series with RS-485 「A」= KIM & KIB series with transmitter (4~20mA)
2. Inserted tube	「PVC」= PVC ; 「PP」= PP ; 「TF」= PVDF	5. Connection	「Non」= KIC series 「2m」= KIW or KIP or KIM series with cable 2M 「MM」= KIW series with DIN 43650A micro mini 「M12」= KIP or KIM series with M12 connector
3. Tube length	「S」= Short tube (Applied in 1"~ 4") 「L」= Length tube (Applied in 6"~ 24")		

KTX & KTY Series Flow Meter & Flow Sensor

- Approved :
- High resolution : 0.1cc/Pulse min.
- High accuracy : ± 1.0% of FS max
- Low activated flow rate : 0.02 LPM min.
- Multiple connection : 「NPT」 or 「Hose Barb」 or 「Straight tube」 or 「Flared」
- Multi-function : 「0~5V」 or 「4~20mA」 or 「RS-485」 or 「Alarm output」



Guiding of model

KTX - 03H - RS - PF - M12

1. Series	「KTX」= Mini Flow meter 「KTY」= Mini Flow sensor	3. Option	「Non」= Pulse NPN & PNP output (for KTY) 「Non」= Alarm NPN & PNP output (for KTX) 「RS」= With MODBUS RS-485 (for KTX) 「mA」= With Transmitter (4 ~ 20mA)(for KTX) 「V」= With Transmitter (0 ~ 5V)(for KTX)
2. Tube type	「02N」= 1/8" NPT (0.04 ~ 17.20LPM) 「03H」= 3/16" Hose Barb (0.04 ~ 1.80LPM) 「04T」= 1/4" Straight tube (0.02 ~ 8.20LPM) 「04F」= 1/4" Flared (0.02 ~ 2.50LPM) 「06T」= 3/8" Straight tube (0.04 ~ 17.20LPM) 「06H」= 3/8" Hose Barb (0.04 ~ 17.20LPM) 「06F」= 3/8" Flared (0.04 ~ 9.80LPM)	4. Material of body	「PP」= PP ; 「PFA」= PFA 「PVDF」= PVDF 「PVC」= Body = PP & Tube = PVC
		5. Connection method	「Non」= Lead wire (2m) ; 「PE」= PE connector 「M12」= Connector M12

Dimension

KTX	KTY	Tube size		
		Hose Barb : 「03H」 	Hose Barb : 「06H」 	Threaded : 「02N」 
		Straight tube : 「04T」 	Straight tube : 「06T」 	Flared : 「04F」&「06F」 

Dimension [ AT / KT / KTE ]


### Digital Thermal mass flow meter

- Measure accuracy : ± 2.0% of F.S.
- Two meter function : Flow rate meter + Flow total meter
- Multi-function : RS-485 or Transmitter or Alarm output optional



#### Guiding of model

**ATF - AN - 050 - RS - N2**  
 1 2 3 4 5

1. Series	「ATF」= Digital Thermal mass flow meter	3. Range	「050」= 50 LPM ; 「100」= 100 LPM 「200」= 200 LPM ; 「300」= 300 LPM 「500」= 500 LPM ; 「1000」= 1000 LPM
2. Output method	「AN」= 4~20mA + NPN output ; 「VN」= 0~5V + NPN output 「AP」= 4~20mA + PNP output ; 「VP」= 0~5V + PNP output 「2N」= Two NPN output ; 「2P」= Two PNP output	4. Option	「RS」= With RS-485 ; 「non」= Without RS-485
		5. Gases	「non」= Dry air ; 「N2」= N2 ; 「O2」= O2

※Remark : 「AN」= 4~20mA(P1) + NPN output(P2) ; 「VN」= 0~5V(P1) + NPN output(P2)  
 「AP」= 4~20mA(P1) + PNP output(P2) ; 「VP」= 0~5V(P1) + PNP output(P2)  
 「2N」= NPN output(P1) + NPN output(P2) ; 「2P」= PNP output(P1) + PNP output(P2)

Flow range	Tube size	Flow range	Tube size	Flow range	Tube size
0~50LPM		0~200LPM		0~400LPM	
0~100LPM	1/4"RC	0~300LPM	1/2"RC	0~500LPM	3/4"RC
---		---		0~1000LPM	

#### Specification

Model	ATF-AN-□	ATF-AP-□	ATF-VN-□	ATF-VP-□	ATF-2N-□	ATF-2P-□	ATF-2N-□-RS	ATF-2P-□-RS
Alarm output	Single NPN	Single PNP	Single NPN	Single PNP	Twice NPN	Twice PNP	Twice NPN	Twice PNP
Transmitter	4~20mA		0~5V or 1~5V		non			
Communication	non		non		RS-485			
Measuring range	「050」= 0.0 ~ 50.0 L/min (LPM) ; 「100」= 0.0 ~ 100.0 L/min (LPM) ; 「200」= 0.0 ~ 200.0 L/min (LPM) ; 「300」= 0.0 ~ 300.0 L/min (LPM) 「400」= 0.0 ~ 400.0 L/min (LPM) ; 「500」= 0.0 ~ 500.0 L/min (LPM) ; 「1000」= 0.0 ~ 1000.0 L/min (LPM)							

### Flow controller with Total flow meter

- Flow controller with Total flow meter
- Maximum control volume : 50.0 LPM
- Control Accuracy : ± 2.0% of F.S.
- Multi setting method : Digital or Analog or Communication



#### Guiding of model

**ATC - 2V - 50 - 08 - RS**  
 1 2 3 4 5

1. Series	「ATC」= Digital Thermal mass flow controller	3. Range	「50」= 50 LPM max.
2. Function	「AN」= 4~20mA(Tr) & NPN flow rate alarm output 「VN」= 1~5V or 0~5V(Tr) & NPN flow rate alarm output 「2N」= NPN flow total alarm output & NPN flow rate alarm output 「2V」= 0~10V(IN) & 1~5V(Tr)	4. Connector	「08」= 8Φ ; 「06」= 6Φ 「non」= 1/4" RC
		5. Option	「RS」= With RS-485 「non」= Without RS-485

※Remark : 「AN」= 4~20mA(P1) & NPN flow rate alarm output(P2)  
 「VN」= 0~5V(P1) & NPN flow rate alarm output(P2)  
 「2N」= NPN low total alarm output(P1) & NPN flow rate alarm output(P2)  
 「2V」= 1~5V(P1) & 0~10V(P2) ; ※ 「Tr」= Transmitter

#### Specification

Model	ATC-2V-50-□	ATC-AN-50-□	ATC-VN-50-□	ATC-2N-50-□	ATC-2N-50-□-RS
Alarm output	non	Single NPN	Single NPN	Twice NPN	Twice NPN
Transmitter	1~5V	4~20mA	0~5V or 1~5V	non	
Flow rate setting	0 ~ 10V Press key 「SET」				
Communication	non				RS-485
Control range	「50」= 0.0 ~ 50.0 L/min				

### Temperature & Humidity & Current & Voltage Transmitter

#### TDX & TDZ Series Temperature Transmitter

- 「℃」 or 「°F」 Selectable
- Communication method : RS-485
- Transmitter : 4~20mA or 0~10V
- Alarm output : NPN & PNP



Model	TDX / TDZ-100-RS		TDX / TDZ-100-mA		TDX / TDZ-100-V		Dimension	
	Transmitter	non	4 ~ 20 mA	0 ~ 10V	TDX	TDZ		
Communication	RS-485		non		non			
Temperature range	-40 ~ +125°C							
Accuracy	±1.0% of F.S. @ 25°C max.							
Operating voltage	10 ~ 30VDC							

#### HT-RS Series Transmitter

- Temperature & Humidity & Dew point (3 in 1)
- Communication method RS-485
- Communication protocol is settable
- Magnetic fixed available



#### HTM-72 Series Meter

- Meter for Temperature & Humidity & Dew point
- Alarm output : Relay \*2 or RS-485+NPN\*2
- Outline : 72\*72\*38 (Panel type)



Model	HT-RS-□□M	HT-RS-RJ11-□□M	Model	HTM-72	HTM-72-RS
Connection method	Lead wire (4C/4.0Φ)	RJ11 Lead wire connector	Communication	non	RS-485 Modbus RTU
Communication	RS-485 Modbus RTU		Alarm output	Relay*2	NPN*2
Temperature range	-20.0 ~ +80.0°C (-4.0 ~ +176.0 °F)		Current output	0.5A/125VAC	150mA max
Humidity range	0.0 ~ 100.0%RH		Display range	-20.0 ~ +80.0°C (-4.0 ~ +176.0 °F)	
Dew point	-40 ~ +20.0°C (-40.0 ~ +68.0 °F)		Humidity range	0.0 ~ 100.0%RH	
Resolution	Temperature ; 0.1°C ; Humidity ; 0.1%		Dew point	-40 ~ +20.0°C (-40.0 ~ +68.0 °F)	
Accuracy	Humidity: ±3% max. ; Temperature ; ±0.5°C max.				

#### CT-32 Series Current Communication module

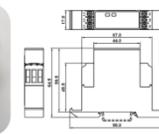
- 6 unit current detection
- Communication : RS-485
- Accuracy : ± 1.0% max.



Model	CT-32-RS	Dimension		
		CT-60	CT-100	CT-32-RS
Display range	0.0 ~ 999.9 A			
CT input current	40mA(VAC) max.			
Current range	0.0 ~ 99.9A			
Current error	±1.0% of FS			
Power supply	24VDC / AC			

#### TR Series 2 Wires Current or Voltage Transmitter

- Wide loop voltage 6~36VDC
- Linearity accuracy ± 1.0% of FS
- Current loop transmitter 4~20mA



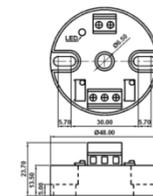
**TR - 5A - VAC - 60Hz**  
 1 2 3 4

1. Series	「TR」= Transmitter
2. Input range	「5A」= 0~5A ; 「100」= 0~100V 「600」= 0~600V or Others
3. Input Voltage	「VAC」= AC voltage ; 「VDC」= DC voltage
4. Frequency	「60Hz」= Power frequency 60Hz 「50Hz」= Power frequency 50Hz

#### TR-2W Series 2 Wires Temperature Transmitter

**TR - 2W - PT - 100E**  
 1 2 3 4

- |           |   |
|-----------|---|
| 1. Series | 「TR」= Transmitter   |
| 2. Wires  | 「2W」= Two wires 4~20mA  |
| 3. Sensor | 「PT」= PT-100Ω   |
| 4. Range  | 「100E」= -100 ~ +100 °C ; 「100」= 0 ~ +100 °C<br>「150」= 0 ~ +150 °C ; 「200」= 0 ~ +200 °C<br>「300」= 0 ~ +300 °C ; 「400」= 0 ~ +400 °C |



## NT Series Temperature Controller

§ Intelligence § Easiness § Performance  
§ Stability § Reliability § Sensitivity

- ◎ Approved :
- ◎ Output volume display
- ◎ Load current display
- ◎ Turn off control function
- ◎ Fast auto-tuning setting
- ◎ Soft start function
- ◎ Ramp control function
- ◎ Manual output control function
- ◎ Communication function available



### Guiding of model

**NT - 48 R - CT - RS**  
1 2 3 4 5

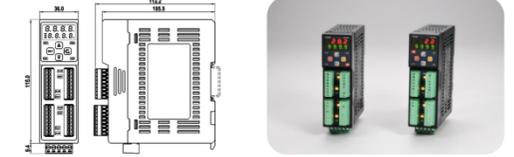
1. Series	「 NT 」 = New generation Temperature controller
2. Outline	「 10 」 = 24*48*100 ; 「 20 」 = 48*96*60 ; 「 21 」 = 96*48*60 ; 「 22 」 = 22.6*75*100 「 32 」 = 32*75*65 ; 「 48 」 = 48*48*72 (1/16 DIN) ; 「 72 」 = 72*72*60 ; 「 96 」 = 96*96*60 (1/16 DIN)(Unit : mm)
3. Output method	「 R 」 = Relay (3A/250VAC) ; 「 V 」 = SSR (30mA/12V) ; 「 L 」 = Linear output (4~20mA)
4. Option	「 CT 」 = Heater break detection ; 「 mA 」 = 4~20mA input ; 「 mV 」 = 0 ~ 10V input 「 RS 」 = RS-485 (MODBUS) ; 「 S 」 = PV transmitter

Item	Specification
Operating voltage	90~265 VAC / 50 / 60 Hz or 24 VDC / AC
Temperature sensor	PT / K / J / R / S / T / B / E / N / L (selectable) or 4~20mA or 0~10VDC
Control method	Fuzzy + PID or ON / OFF selectable
Control output	Relay or SSR or 4~20mA (Optioned)
Alarm output	Relay 1a (5A/250VAC SPDT)
Temperature range	-999 ~ 9999 or -99.9 ~ 999.9
Setting range	-999 ~ 9999 or -99.9 ~ 999.9
Accuracy	±0.1% of FS ± 1 digit

Model	NT-10	NT-48	NT-21	NT-72
Picture				
Outline	24*48*100	48*48*72	96*48*60	72*72*60
Alarm	Single alarm	Two alarm	Two alarm	Two alarm
Model	NT-22	NT-32	NT-20	NT-96
Picture				
Outline	22.6*75*100	32*75*65	48*96*60	96*96*60
Alarm	Single alarm	Two alarm	Two alarm	Two alarm

## NT-4M Series 4 Channel Temperature Control Module

- ◎ High speed control and high quality communication : 5 unit 「 MCU 」 inside
- ◎ Ramp control : Unit = °C /minute to control the raising speed of temperature Easily
- ◎ Alarm mode 「 ALT=11 」 : Heating & cooling control is available



Model	NT-4MR	NT-4MV	NT-4ML
Control output	Relay	SSR	Linear output
Output current	5A/250VAC max.	100mA max.	4 ~ 20mA
Operating voltage	10~30VDC		
Current consumption	150mA max.		
Communication	RS-485		
Temperature sensor	PT / K / J / R / S / T / B / E / N / L (Selectable)		
Control method	Fuzzy + PID control		
Alarm output	Relay 1a(5A/250VAC max.)		
Accuracy	± < 0.1 % OF F.S. + 1 DIGIT>		
Setting range	-999 ~ 9999		

## Heater Controller

- ◎ Approved :
- ◎ Communication : RS-485
- ◎ Output method : SSR(40A)
- ◎ Alarm function : OEM
- ◎ High reliability & stability



## PWM Fan Controller

- ◎ PWM fan voltage : 12 ~48VDC
- ◎ Fan faulty detecting
- ◎ Communication : RS-485
- ◎ PWM control frequency : 25K hz



Model	NT-A2	NT-A2-CT	Model	PWM-322-RS	PWM-324-RS
Current detector	non	CT	PWM output	PWM *2 unit(25KHz)	PWM *4 unit(25KHz)
Operating voltage	90~265 VAC / 50/60 Hz		Output method	FET / 12A max.	NPN / 50mA max.
Current consumption	5 VA max.		PWM Voltage	5V or 12V (Selectable)	
Temperature sensor	PT / K / J / R / S / T / B / E / N / L (Selectable)		Fan voltage	12~48VDC	
Control method	Fuzzy + PID control		Communication	RS-485	
Output method	Triac 40A / 600VAC		Temperature sensor	NTC-10KΩ	
Over heat protection	Relay 1a (10A/250VAC SPDT)		Temperature range	0.0°C ~ +120.0°C	
Fuse	8A/250VAC		Accuracy	±1.0% of FS	
Rated current	6A/250VAC max.		Control method	Fuzzy PID or Proportion or Manual	

## TC Series Temperature controller

- ◎ With cold junction compensation
- ◎ All model with sensor break alarm
- ◎ Accuracy less than 0.5% FS
- ◎ Stand-by or over heat alarm optioned
- ◎ Heat break alarm optioned



### Guiding of model

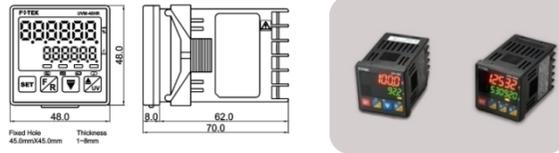
**TC - 4896 D A - PT - R 3 - S - A**  
1 2 3 4 5 6 7 8 9

1. Series	「 TC 」 = Temperature controller	7. Setting range	DIP switch - 「 1 」 = 0~199 ; 「 3 」 = 0~399 「 5 」 = 0~599 ; 「 9 」 = 0~999 VR setting - 「 1 」 = 0~100 ; 「 2 」 = 0~200 ; 「 4 」 = 0~400 「 6 」 = 0~600 ; 「 12 」 = 0~1200
2. Outline	「 4896 」 = 48*96 ; 「 48 」 = 48*48 ; 「 72 」 = 72*72 「 96 」 = 96*96 ; 「 21 」 = 96*48	8. Control method	「 S 」 = ON/OFF ; 「 Non 」 = P+D ON/OFF
3. Setting	「 D 」 = DIP switch ; 「 A 」 = VR ; 「 N 」 = Without setting	9. Alarm	「 A 」 = Standby or over heat alarm 「 AH 」 = Standby or over heat alarm + Heatbreak alarm
4. Display	「 A 」 = Deviation ; 「 D 」 = Digital display ; 「 N 」 = No display		
5. Sensor	「 PT 」 = RTD PT-100Ω ; 「 J 」 = J type ; 「 Non 」 = K type		
6. Output	「 R 」 = Relay ; 「 V 」 = SSR ; 「 L 」 = 4~20mA ; 「 N 」 = No output		

Item	Specification	Item	Specification
Operating voltage	110/220VAC ± 20% 50/60 Hz or 24VDC/AC (Option)	Control output	Relay or SSR or 4~20mA (Option)
Sensor	PT or K or J (Option)	Offset correction	VR setting range = ±10°C
Control method	P+D ON/OFF or ON/OFF (Option)	Alarm output	Relay 1a (5A/250VAC SPDT)
Cycle time	「 Relay 」 = 20 seconds ; 「 SSR 」 = 2 seconds	Alarm range	VR setting range 50°C

### UV Series Joule Meter & Life meter

- 20mW/cm<sup>2</sup>/200mW/cm<sup>2</sup>/1000mW/cm<sup>2</sup> selectable
- Operating voltage : 90 ~ 265VAC 50/60Hz or 24VDC
- Alarm output : Relay 5A/250VAC



Product	UV Joule meter				UV Life meter		
	Model	UVM-48HR-mA	UVM-48HR-RS	UVT-48HR-mA	UVT-48HR-RS	UVT-48R-mA	UVT-48R-RS
Communication	non	RS-485	non	RS-485	non	RS-485	non
Transmitter	4 ~ 20 mA	non	4 ~ 20 mA	non	4 ~ 20 mA	non	4 ~ 20 mA
Input voltage	0 ~ 10V		0 ~ 10V		0 ~ 5V		0 ~ 5V
Power range	0.0 ~ 999999.9J or 0 ~ 99999.9J				non		
Life time	non				0 ~ 999,999H or 0.0 ~ 99,999.9H		
Strength	0~100.0% or 0~20.00 mW/cm <sup>2</sup> or 0~200.0 mW/cm <sup>2</sup> or 0~2000 mW/cm <sup>2</sup> or 0~10000 mW/cm <sup>2</sup>						0~100.0%

### UVA & UVC Series UV Sensor

- High compact
- High Reliability
- High Noise Resistance



#### Guiding of model

**UVA - 245 - 2H 10V - 12G - M12**  
 1 2 3 4 5 6

- Series: 「UVC」 = 185 or 245nm; 「UVA」 = 365 or 405nm
- Spectral detection: 「185」 = 185nm; 「245」 = 245nm; 「365」 = 365nm; 「405」 = 405nm
- Intensity range: 「2D」 = 0~20mW; 「2H」 = 0~200mW; 「2K」 = 0~2KmW; 「10K」 = 0~10KmW
- Output range: 「05V」 = 0 ~ 5V; 「10V」 = 0 ~ 10V
- Tooth rule: 「12G」 = G1/2; 「14G」 = G1/4; 「LS」; 「LSF」
- Connection: 「M12」 = M12 connector; 「2M」 = Lead wire 2m

UVC/A-□□□□-12G-2M	UVC/A-□□□□-14G-2M	UVC/A-□□□□-LS
UVC/A-□□□□-12G-M12	UVC/A-□□□□-14G-M12	UVC/A-□□□□-LSF

### DPM Series Temperature & Humidity Meter

- Operating voltage : 90~265VAC
- Humidity accuracy : ± 2.0% RH
- Humidity transmitter : 4~20mA



Outline	Model	Transmitter	Control output	Control method	Temp sensor	Accuracy	Display range			Dimension	
							Temp	Humidity	Dew point	DPM-1	DPM-2
48*96	DPM-1	Non	Relay	Hi/Lo	K/J/PT	± 0.1% of FS	0 ~ 999° C	0.0 ~ 99.9%	-9 ~ +20° C		
	DPM-1S	4~20mA									
96*48	DPM-2	Non	Relay	Hi/Lo	K/J/PT	± 0.1% of FS	0 ~ 999° C	0.0 ~ 99.9%	-9 ~ +20° C		
	DPM-2S	4~20mA									

### HS Series Precision Humidity sensor

- High reliability & Low thermal drift
- Humidity accuracy : ±2.0% RH
- High corrosion resistance



Model	Operating voltage	Transmitter	Range	Accuracy	Linearity	Repeatability	Connection	Dimension	
								HS-MA	HS-02
HS-MA	8 ~ 30VDC	4~20mA	0.0~100% RH	±2.0% of F.S. max	±0.5% of F.S. max	±0.5% of F.S. max	M12 connector		
HS-02	5.0VDC ±10%	0.8V ~ 3.9V	0.0~100% RH	±2.0% of F.S. max	±0.5% of F.S. max	±0.5% of F.S. max	M12 connector		

### CT Series Current detect board

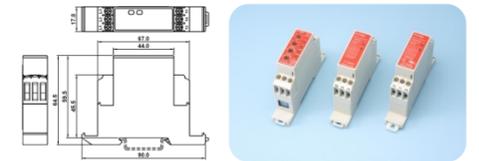
- Operating voltage : 90~265VAC 50/60Hz
- Alarm output : Relay(5A/250VAC)
- Current range : 0.0~999.9A
- Detectable current : 0.1A min.



Type	Standard		Heat break detector	Current transmitter	Dimension	
	Model	CT-6P	CT-12P	CT-12P-RS	CT-12PE-RS	CT-12P
CT input	6 units	12 units	12 units	12 units		
Communication	non		RS-485	RS-485		
Current detector	non		non	cu.01 ~ cu.12		
Detect function	Heat brea		Heat brea	Heat break & Current measuring		

### PR Series Phase Relay

- Approved :
- Slim compact outline : 17.8mm
- High frequency interruption resistance
- Conform to IECI/EN 50178 & IEC/EN 61000-6-2 & IEC/EN 61000-6-3



Type	Phase Loss & Reversed Detecting				Phase Loss & Reversed & Hi/Lo voltage Detecting	
	Model	PR-K1	PR-K1E	PR-KA	PR-KAE	PR-K2
Contact	3A/250VAC	10A/250VAC	3A/250VAC	10A/250VAC	3A/250VAC	10A/250VAC
Operating voltage	200~480VAC / 50/60Hz			200~550VAC / 50/60Hz (Switching power)		

### SQ Series Spark quencher

- Approved :
- To extend contact life
- To eliminate coil noise
- To wipe off contact spark



Model	Phase	C value	R value	Operatingvoltage	Approved	
SQ1-1-01-120W	單相	0.1μF	120Ω	150VAC (50/60Hz)		
SQ1-1-01-150W	單相	0.1μF	150Ω			
SQ1-1-02-150W	單相	0.2μF	150Ω			
SQ1-1-03-150W	單相	0.3μF	150Ω	250VAC (50/60Hz)		
SQ1-2-01-120W	單相	0.1μF	120Ω			
SQ1-2-01-150W	單相	0.1μF	150Ω			
SQ1-1-01-120P	單相	0.1μF	120Ω	150VAC (50/60Hz)		
SQ1-1-01-150P	單相	0.1μF	150Ω			
SQ1-1-02-150P	單相	0.2μF	150Ω			
SQ1-1-03-150P	單相	0.3μF	150Ω	250VAC (50/60Hz)		
SQ1-2-01-120P	單相	0.1μF	120Ω			
SQ1-2-01-150P	單相	0.1μF	150Ω			
SQ1-115P	單相	0.1μF	510Ω	250VAC	CE / RoHS	
SQ1-211W	單相	0.1μF	100Ω	250VAC (50/60Hz)	CE / RoHS	
SQ1-201W	單相	0.1μF	120Ω	24VDC		
SQ1-502W	單相	0.47μF	2.7Ω	24VDC	CE / RoHS	
SQ1-511W	單相	0.1μF	100Ω	630VAC		
SQ3-351W	3相	0.22μF	100Ω	400VAC	CE / RoHS	
SQ3-511W	3相	0.1μF	510Ω	630VAC		
SQ1-4K5W	單相	0.1μF	510Ω	1.5KVAC	CE / RoHS	
SQ3-651W	3相	0.47μF	47Ω	900VAC		
Lightning Protection	CM-LE-380	3相	2.2μF	470K	1KVAC	CE / RoHS
	CM-LL-380	3相	2.2μF	470K		

Model	Dimension
SQ1-1xx	
SQ2-1xx	
SQ1-2-01-XXP	
SQ1-115P	
SQ1-2xxW	
SQ1-5xxW	
SQ3-xxxW	
SQ1-4K5W / SQ3-651W / CM-LE-380 / CM-LL-380	

## Digital Counter

### SC Series Digital Counter

- Power : 110/220VAC
- Input method : Single or Two phase
- Output control : N/R/C
- Multiplier : 0.001~9.999
- Divisor : 1~9999



Type	Outline	Model	Digit	Setting	Output	Freq.	Type	Outline	Model	Digit	Setting	Output	Freq.	Dimension
Total	72*72	SC-360	6	Non	Non	30Hz or 2.5KHz selectable	Preset + Total	72*72	SC-3616	6	Single preset	One Relay	30Hz or 2.5KHz selectable	72.0
	96*48	SC-260	6						SC-3526	6				96.0
Single preset	72*72	SC-321	2	Single preset	One Relay			72*72	Dual preset	Two Relay	SC-3626	6		96.0
		SC-341	4								SC-326	6		
		SC-351	5								SC-362M	6		
		SC-361	6								SC-362Ma	6		
Two preset	96*48	SC-261	6	Two preset	Two Relay	96*48	Two preset	Two Relay	SC-342	4	96.0			
		SC-342	4						SC-352	5				
Two preset	72*72	SC-352	5	Two preset	Two Relay	72*72	Two preset	Two Relay	SC-362	6	96.0			
		SC-362	6						SC-262	6				

### MC Series Digital Counter

- Power : 90 ~ 265VAC
- Input method : Single or Two phase
- Output control : N/R/C/A
- Multiplier : 0.001~9.999



Type	Outline	Model	Digit	Setting	Output	Freq.	Type	Outline	Model	Digit	Setting	Output	Freq.	Dimension
Total	72*72	MC-360	6	Non	Non	1 ~ 5K Hz settable	Twin Counter	48*48	MC-426	6	Two preset	Two Relay	1 ~ 5K Hz settable	48.0
	96*48	MC-260	6						72*72	MC-326				6
Single preset	48*48	MC-441	4	Single preset	One Relay			48*48	Two preset	Two Relay	MC-226	6		96.0
		MC-461	6								MC-462M	6		
		MC-341	4								MC-362M	6		
		MC-361	6								MC-262M	6		
Two preset	96*48	MC-261	6	Two preset	Two Relay	96*48	Two preset	Two Relay	MC-442	4	96.0			
		MC-442	4						MC-462	6				
Two preset	72*72	MC-462	6	Two preset	Two Relay	72*72	Two preset	Two Relay	MC-342	4	96.0			
		MC-342	4						MC-362	6				
Two preset	96*48	MC-262	6	Two preset	Two Relay	96*48	Two preset	Two Relay	MC-362	6	96.0			
		MC-262	6						MC-261T	6				

### HC Series Digital Counter

- Power : 110/220VAC
- Input method : Single phase
- Output control : N/R/C



Type	Outline	Model	Digit	Setting	Output	Freq.	Type	Outline	Model	Digit	Setting	Output	Freq.	Dimension
Total	72*72	HC-4T	4	non	non	30 / 2.5K Hz	Single preset	72*72	HC-21P	2	Single preset	One Relay	30 / 2.5K Hz	72.0
		HC-5T	5						HC-31P	3				76.0
Two preset	72*72	HC-6T	6	Two preset	Two Relay			72*72	Single preset	One Relay	HC-41P	4		96.0
		HC-42P	4								HC-51P	5		
		HC-52P	5								HC-61P	6		
		HC-52P	5								HC-61P	6		

### MC/H5C/SK Series Digital Counter

- Power : 90 ~ 250VAC
- Input method : Single phase
- Output control : N/R/C



Type	Model	Digit	Output	Freq.	Reset	Model	Digit	Output	Freq.	Reset	Dimension
48*48	H5C-4D	4	Relay	30/1K Hz	N/R	SC-2D	2	Relay	30/1K Hz	N/R	H5C-4D/MC48-4D
	MC48-4D	4				SC-3D	3				MC50-4D/SC-xD/SK-xD
60*50	MC60-4D	4	Relay	1~5k Hz	N/R/C	SC-4D	4	Relay	30Hz	Power ON reset	MC60-4D
						SK-1D	1				MC50-4D
50*60	MC50-4D	4	Relay	1~5k Hz	N/R/C	SK-2D	2	Relay	30Hz	Power ON reset	MC50-4D
						SK-3D	3				MC50-4D
50*60	MC50-4D	4	Relay	1~5k Hz	N/R/C	SK-4D	4	Relay	30Hz	Power ON reset	MC50-4D
						SK-4D	4				MC50-4D

### SM Series Tachometer & Line Speed Meter

- Power : 110/220VAC or 90~265VAC
- PPR setting : 1~999
- Diameter : 1~999mm
- Response : 0.1~99.9ms
- Output control : Hi / Lo



Outline	Model	Alarm Output	Transmitter	Power	Display	Decimal point	Meter	Dimension		
								SM-10	SM-20	SM-30
28*48	SM-10	Relay	Non	90~265 VAC	4 digits	Auto or settable	RPM / LSN / DM selectable	48.0	15.0	85.0
96*48	SM-20	Relay	Non	110/220 VAC				96.0	9.0	87.5
	SM-20S	Non	4~20mA	110/220 VAC				72.0	11.0	117.0
72*72	SM-30	Relay	Non	110/220 VAC				72.0	11.0	117.0
	SM-30S	Non	4~20mA	110/220 VAC				72.0	11.0	117.0

### AVR Series Voltage Regulator

- Power : 90~265VAC
- Real time feed back control
- Constantly voltage control
- Phase control



### TW Series Weekly Clock

- Power : 90~265VAC
- 20 modes of function
- 32 segment of preset time per day
- With Ni-cd Recharged battery



Outline	Model	Transmitter	Output method	Rated current	Dimension	Outline	Model	Control method	Output method	Rated current	Dimension
48*48	AVR-48A	Non	Triac	5A	48.0	48*48	TW-48	Auto / Manual / OFF selectable	Relay	5A / 250VAC	72.0
	AVR-48A-RS	RS-485	10mA	72.0							
	AVR-48L	Non	Photo coupler	10mA							
72*72	AVR-72A	Non	Triac	15A	72.0	72*72	TW-72	Auto / Manual / OFF selectable	Relay	5A / 250VAC	72.0
	AVR-72A-RS	RS-485	15A	72.0							

### DM/AM Series Multi function Digital Meter

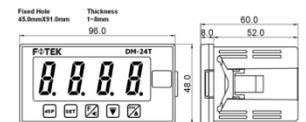
- Resolution : 24 bit
- Operating voltage : 90~265VAC or 15~60 VAC/DC
- Various input : DC voltage / AC voltage / AC current / DC current
- Multi function : Communication RS-485 / Transmitter 4~20mA
- Alarm output : Relay



### Guiding of model

AMA - 24 T - mV - RS - 24V  
1 2 3 4 5 6

- Type: 「DM」: DC Meter ; 「DMA」: DC current meter ; 「DMV」: DC voltage meter ; 「AMA」: AC current meter ; 「AMV」: AC voltage meter
- Outline: 「24」: 96\*48 (4 digits) ; 「25」: 96\*48 (5 digits)
- Output method: 「T」: No output ; 「2」: Relay output \*2
- Input method: 「non」: Standard ; 「mV」: 0~50mV (for shunt) ; 「mA」: 0~30mA (for CT-09/CT-100)
- Optional: 「non」: Standard ; 「RS」: RS-485 ; 「mA」: 4~20mA
- Operating voltage: 「24V」: 15~60 VAC/DC ; 「non」: 90~265 VAC



Type	DC input									
Model	DM-24T	DM-242	DM-25T	DM-252	DMA-24T	DMA-242	DMA-25T	DMA-252	DMV-24T	DMV-242
Output	Non	Relay*2	Non	Relay*2	Non	Relay*2	Non	Relay*2	Non	Relay*2
Unit	Blank (28 sorts applied)				A (VDC)				V (VDC)	
Range	-1999 ~ 9999		-19999 ~ 19999		0 ~ 9999		0 ~ 19999		0 ~ 9999	
Input	int.0 ~ int.5 selectable or mV				0~5A or mV				0~600VDC or mV	

Type	AC input					
Model	AMA-24T	AMA-242	AMA-25T	AMA-252	AMV-24T	AMV-242
Output	Non	Relay*2	Non	Relay*2	Non	Relay*2
Unit	A (VAC)			V (VAC)		
Range	0 ~ 9999			0 ~ 9999		
Input	0~5A or mA					

DRM/ARM Series Digital Voltage or Current Meter

- Power supply : 90~265VAC or 24VDC/AC
- Output method : Relay
- Display range : -1999~9999
- Accuracy : ± 0.1% of FS
- Decimal point : 0/1/2 selectable



Guiding of model

DRM - 1 4 1 - mV - 24V  
1 2 3 4 5 6

- Series: 「DRM」= DC meter ; 「ARM」= AC meter ; 「MV」= Voltage meter  
「MA」= Current meter ; 「AV」= AC voltage meter ; 「DV」= DC voltage meter  
「AA」= AC Current meter ; 「DA」= DC Current meter
- Outline: 「1」= 48\*24 ; 「2」= 96\*48 ; 「3」= 72\*72
- Digits: 「4」= 0~9999 (4 digits) ; 「5」= 0~19999 (5 digits)
- Presets: 「T」= Non-presets ; 「1」= Single preset
- Option: 「mV」= mV input ; 「mA」= mA input ; 「S」= With resender
- power supply: 「non」= 90~265VAC ; 「24V」= 24VDC/AC

※ Unit label

%	RPM	M <sup>3</sup> /min	M <sub>l</sub> /min	KPA	mV	V
%RH	RPH	M <sup>3</sup> /H	Yd <sub>l</sub> /min	PSI	V	A
°F	pcs/min	pcs/H	RPS	Kgf/cm <sup>2</sup>	mA	m <sup>3</sup> /min
°C	Hz	KA	mmHg	PPM	A	ℓ/min

Meter	Model	Input	Output	Meter	Model	Input	Output	Meter	Model	Input	Output	Meter	Model	Input	Output	Dimension							
Voltage	AV-14T	0~400V	Relay	Digital	AV-141	0~400V	Relay	Preset digital	ARM-14T	0~10V	Relay	Relay	ARM-141	0~10V	Relay	DIN24*48							
	DV-14T	0~400V			DV-141	0~400V			DRM-14T	0~10V			DRM-141	0~10V									
	DV-14T-mV	0~100mV			DV-141-mV	0~100mV			DRM-14T-mV	0~100mV			DRM-141-mV	0~100mV									
	AA-14T	0~5A			AA-141	0~5A			DRM-14T-mA	4~20mA			DRM-141-mA	4~20mA									
Current	DA-14T	0~5A	Relay	Digital	DA-141	0~5A	Relay	Preset digital	DRM-14T-VR	VR	Relay	Relay	DRM-141-VR	VR	Relay	DIN24*48							
	DA-14T-mA	4~20mA			DA-141-mA	4~20mA			DRM-14T-mA	4~20mA			DRM-141-mA	4~20mA									

Meter	Model	Input	Output	Meter	Model	Input	Output	Meter	Model	Input	Output	Meter	Model	Input	Output	Dimension							
Voltage	AV-34T	600VAC	Relay	Digital	AV-341	600VAC	Relay	Preset digital	ARM-34T	0~10V	Relay	Relay	ARM-341	0~10V	Relay	DIN72*72							
	DV-34T	600VDC			DV-341	600VDC			DRM-34T	0~10V			DRM-341	0~10V									
	DV-34T-mV	0~100mV			DV-341-mV	0~100mV			DRM-34T-mV	0~100mV			DRM-341-mV	0~100mV									
	AA-34T	0~10A			AA-341	0~10A			DRM-34T-mA	4~20mA			DRM-341-mA	4~20mA									
Current	DA-34T	0~10A	Relay	Digital	DA-341	0~10A	Relay	Preset digital	DRM-34T-VR	VR	Relay	Relay	DRM-341-VR	VR	Relay	DIN72*72							
	DA-34T-mA	0~20mA			DA-341-mA	0~20mA			DRM-34T-mA	4~20mA			DRM-341-mA	4~20mA									

MV/MA Series Preset type Voltage or Current Meter

- Power supply : 90~265VAC
- Output method : Relay 5A/250VAC
- Display range : 0~9999
- Accuracy : ± 0.1% of FS



Meter	Outline	Model	Transmitter	Input	Meter	Outline	Model	Transmitter	Input	Dimension	
										MV-21R / MA-21R	MV-72R / MA-72R
Voltage	96*48	MV-21R	Non	0~400 VAC	Current	96*48	MA-21R	Non	0~5A	100.0	98.0
		MV-21R-S	4~20 mA	VAC			MA-21R-S	4~20 mA	VAC		
Voltage	72*72	MV-72R	Non	0~400 VAC	Current	72*72	MA-72R	Non	0~5A	72.0	10.0
		MV-72R-S	4~20 mA	VAC			MA-72R-S	4~20 mA	VAC		

AV/DV/AA/DA Series Digital Voltage or Current Meter

- Power supply : 110/220 VAC
- Accuracy : ± 0.2% of FS
- Decimal point : 0~3 settable



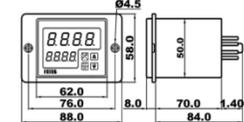
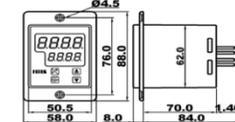
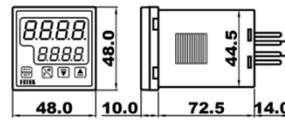
Meter	Model	Range	Input	Meter	Model	Range	Input	Meter	Model	Range	Input	Dimension	
												AV-24T	AV-25T
Voltage	AV-24T	9999	0~600 VAC	Digital	ARM-24T	9999	0~50 VAC	Current	AA-24T	9999	0~5A	96.0	9.0
	AV-25T	19999	VAC		ARM-25T	19999	VAC		AA-24T-1	9999	0~200mA		
	DV-24T	9999	0~600 VDC		DRM-24T	9999	0~50 VDC		DA-24T	9999	0~5A		
	DV-25T	19999	VDC		DRM-25T	19999	VDC		DA-24T-1	9999	0~200mA		
								DA-24T-2	9999	4~20 mA			

TM/TMP/SY/STP/H5T/H5M Series Digital Timer

- Power : 90~265VAC or 24VDC
- Timing method selectable
- Setting accuracy : 0.05% of FS
- Repetivity : 0.1% of FS

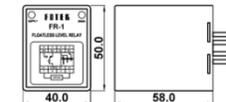
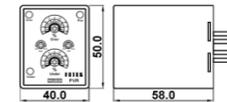


Type	Sh.	Model	Range	Setting	Unit	Control	Reset	Output	Type	Sh.	Model	Range	Setting	Unit	Control	Reset	Output									
Power ON delay timer	48*48	TM48-4D	9999	Key	S / 0.1S / 0.01S / M / 0.1M / H / 0.1H 99M59S / 99H59M selectable	Power ON delay	Power off reset	Limit & instantaneous or Two Limit selectable	Multi-function timer	48*48	TMP48-4D	9999	Key	S / 0.1S / 0.01S / M / 0.1M / H / 0.1H 99M59S / 99H59M selectable	Integrated or ON delay or OFF delay selectable	Manual or Auto reset selectable	N / R / C selectable									
		H5T-4D	9999	Switch							H5M-4D	9999	Switch													
		TM50-2D	99	Key							TMP50-2D	99	Key													
	50*60	TM50-3D	999	Key						TMP50-3D	999	Key														
		TM50-4D	9999	Key						TMP50-4D	9999	Key														
		SY-2D	99	Switch						STP-2D	99	Switch														
	60*50	SY-3D	999	Switch						STP-3D	999	Switch														
		SY-4D	9999	Switch						STP-4D	9999	Switch														
		TM60-3D	999	Key						TMP60-3D	999	Key														
			TM60-4D	9999						Key																



PVR/PR Series Phase Relay

FR Series Level Relay



Model	High Limit	Low Limit	ON Delay	OFF Delay	Output	Power	Model	ON Resistor	OFF Resistor	Control Output	Response Time	Power
PR-1	non	non	1.0S	1.0S	Relay	220 or 380 or 415 440 or 480 VAC	FR-1	<30KΩ	>60KΩ	Relay	ON < 80ms OFF < 160ms	110 or 220 380 VAC
PVR-3	±20%	±20%	0~10S	0~10S			FR-1L	<4KΩ	>15KΩ			
					FR-1H	<70KΩ	>300KΩ					
					FR-2	<30KΩ	>60KΩ	2R				

SQ Series Spark Quencher

- To extend the life of contact
- To quench the spark of contact
- To quench the noise of coil



Type	Model	Volt.	C. Value	R. Value	Peak Volt.	R. Watt.	Power Freq.	Dimension		
								SQ1-211W	SQ3-351W / SQ3-511W	Q1-115P
Wire	SQ1-211W	300VAC	0.1μF	100Ω	750Vp-p	2W	50/60 Hz	Cable Ø2.5		
	SQ3-351W	300VAC	0.47μF	100Ω	900Vp-p			Cable Ø2.5		
	SQ3-511W	550VAC	0.1μF	100Ω	1500Vp-p			Cable Ø2.5		
PCB	SQ1-115P	250VAC	0.1μF	100Ω	500Vp-p	Cable Ø2.5				

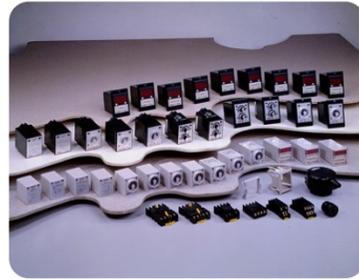
CR Series Current Relay

- Power : 110V or 220V or 380VAC
- Power ON delay : Appr. 2S
- Accuracy : 5% of FS
- Output status : NO/NC changeable



Type	Model	CT	Input current	Current range	Output method	Gate in	ON delay	Dimension		
								CR-06 / CR-09 / CR-05A	CT-06	CT-09
CT input	CR-06	CT-06	0~10mA	0~10A	1a/1b	Non	Non	Cable Ø2.5		
	CR-09	CT-09	0~30mA	0~30A	1a	NPN	2S	Cable Ø2.5		
Dir	CR-05A	---	0~5A	0~5A	1a	NPN	2S	Cable Ø2.5		

## Timer



### H3 - FK - M3 - 220

- Series
  - 「H3」= 40\*50; 「H3B」= 40\*50; 「H2Y」= 58\*88(Panel); 「H3Y」= 47\*70(Panel)
  - 「H5B」= 48\*48; 「TM48」= 48\*48; 「STPN」= 50\*60; 「STPY」= 58\*88(Panel)
  - 「MY」= MY Relay type; 「TF」= Power OFF delay; 「FK」= Flicker
  - 「TDVN」= Twin timer; 「TDVY」= Twin timer(Panel); 「MCVN」= Motor controller
- function
  - 「non」= Power ON delay; 「FK」= Flicker; 「TRD」= Y-△ Starter; 「TF」= Power off delay
- Range
  - 「Mx」= Multi-range; 「xS」= Single range(S); 「xM」= Single range(M); 「xH」= Single range(H)
- Power
  - 「12V」= 12VDC; 「24V」= 24VDC; 「110V」= 110VAC; 「220V」= 220VAC

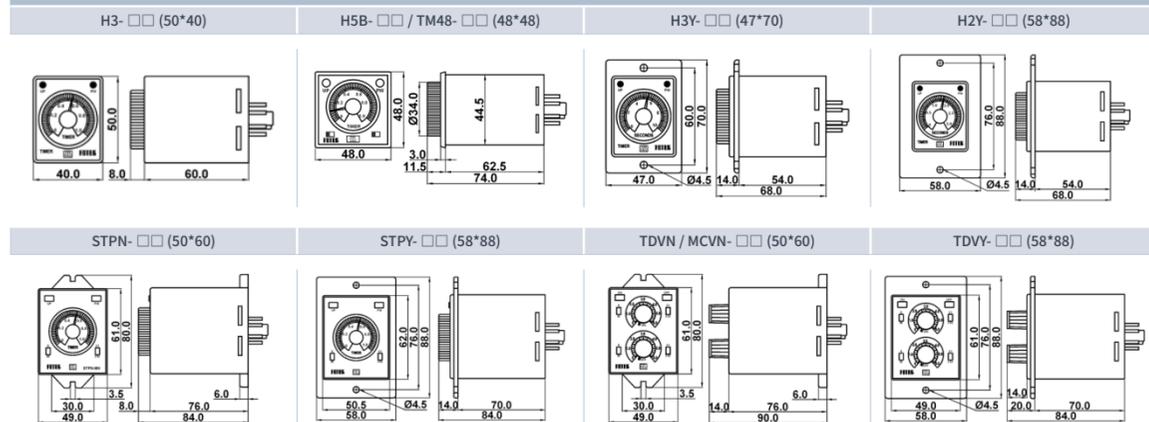
Type	Model (50*40)	Type	Model (50*40)	Type	Model (48*48)	Type	Model (48*48)	Type	Model (50*60)	Type	Model (58*88)	Time Range	Type	Model	Time Range
Power ON Delay	H3-M1	Power ON Delay	H3B-M1	Power ON Delay	H5B-M1	Power ON Delay	TM48-M1	Power ON Delay	STPN-M1	Power ON Delay	STPY-M1	1S/10S/1M/10M	Flicker	H3-FK-M3	3S/30S/3M/30M
	H3-M3		H3B-M3		H5B-M3		TM48-M3		STPN-M3		STPY-M3	3S/30S/3M/30M		H5B-FK-M3	3S/30S/3M/30M
	H3-M6		H3B-M6		H5B-M6		TM48-M6		STPN-M6		STPY-M6	6S/60S/6M/60M		TM48-FK-M3	3S/30S/3M/30M
	H3-M1H		H3B-M1H		H5B-M1H		TM48-M1H		STPN-M1H		STPY-M1H	1M/10M/1H/10H		STPN-FK-M3	3S/30S/3M/30M
	H3-M3H		H3B-M3H		H5B-M3H		TM48-M3H		STPN-M3H		STPY-M3H	3M/30M/3H/30H		STPY-FK-M3	3S/30S/3M/30M
	H3-M6H		H3B-M6H		H5B-M6H		TM48-M6H		STPN-M6H		STPY-M6H	6M/60M/6H/60H			

Type	Model (50*40)	Time Range	Type	Model (50*40)	Time Range	Type	Model (50*40)	Time Range	Type	Model (58*88)	Time Range	Type	Model (58*88)	Time Range	Type	Model (58*88)	Time Range
Power ON Delay	H3-1S	1S	Power ON Delay	H3-3M	3M	Power ON Delay	H3-3H	3H	Power ON Delay	H2Y-1S	1S	Power ON Delay	H2Y-3M	3M	Power ON Delay	H2Y-3H	3H
	H3-3S	3S		H3-6M	6M		H3-6H	6H		H2Y-3S	3S		H2Y-6M	6M		H2Y-6H	6H
	H3-6S	6S		H3-10M	10M		H3-10H	10H		H2Y-6S	6S		H2Y-10M	10M		H2Y-10H	10H
	H3-10S	10S		H3-30M	30M		H3-30H	30H		H2Y-10S	10S		H2Y-30M	30M		H2Y-30H	30H
	H3-30S	30S		H3-60M	60M		H3-60H	60H		H2Y-30S	30S		H2Y-60M	60M		H2Y-60H	60H
	H3-60S	60S								H2Y-60S	60S						

Type	Model (47*70)	Time Range	Type	Model (47*70)	Time Range	Type	Model (47*70)	Time Range	Type	Model (50*40)	Time Range	Type	Model (48*48)	Time Range	Type	Model (50*60)	Time Range
Power ON Delay	H3Y-1S	1S	Power ON Delay	H3Y-3M	3M	Power OFF Delay	H3Y-3H	3H	Power OFF Delay	H3-TF-3S	3S	Power OFF Delay	H5B-TF-3S	3S	Power OFF Delay	TFN-3S	3S
	H3Y-3S	3S		H3Y-6M	6M		H3Y-6H	6H		H3-TF-6S	6S		H5B-TF-6S	6S		TFN-6S	6S
	H3Y-6S	6S		H3Y-10M	10M		H3Y-10H	10H		H3-TF-10S	10S		H5B-TF-10S	10S		TFN-10S	10S
	H3Y-10S	10S		H3Y-30M	30M		H3Y-30H	30H		H3-TF-30S	30S		H5B-TF-30S	30S		TFN-30S	30S
	H3Y-30S	30S		H3Y-60M	60M		H3Y-60H	60H		H3-TF-60S	60S		H5B-TF-60S	60S		TFN-60S	60S
	H3Y-60S	60S								H3-TF-3M	180S		H5B-TF-3M	180S		TFN-3M	180S

Type	Model (22*28)	Time Range	Type	Model (22*28)	Time Range	Type	Model (22*28)	Time Range	Type	Model (58*88)	Time Range	Type	Model (50*40)	Time Range
Power ON Delay	MY-1S	1S	Power ON Delay	MY-3M	3M	Twin Timer	MY-3H	3H	Twin Timer	TDVN-M3	S/M	Motor Starter	TDVY-M3	S/M
	MY-3S	3S		MY-6M	6M		MY-6H	6H		TDVN-M6	S/M		TDVY-M6	S/M
	MY-6S	6S		MY-10M	10M		MY-10H	10H		TDVN-M3H	M/H		TDVY-M3H	M/H
	MY-10S	10S		MY-30M	30M		MY-30H	30H		TDVN-M6H	M/H		TDVY-M6H	M/H
	MY-30S	30S		MY-60M	60M		MY-60H	60H		TDFN-12H	12H/30M		TDVY-12H	12H/30M
	MY-60S	60S												

### Dimension



## Solid state module



- ※ Approved :
- ※ High Dielectric strength over 4KV
- ※ High Isolation strength over 100MΩ/500VDC
- ※ High surge current sustenance
- ※ High surge voltage sustenance
- ※ Conformity with EN60947-4-3 and EN60950

### Guiding of model

#### Terminal type

### SSR - F 40 DA - H - R

- Product
  - 「SSR」= Single phase ON/OFF control(ON/OFF control)
  - 「SCR」= Single phase Linear control(Linear control)
  - 「ASR」= Single phase Enhanced heat sink type(ON/OFF control)
  - 「ACR」= Single phase Enhanced heat sink type(Linear control)
  - 「HPR」= Single phase High power(ON/OFF control)
  - 「TSR」= Three phases(ON/OFF control)
  - 「ESR」= Three phases High power(ON/OFF control)
  - 「LSR」= Three phases High power(ON/OFF control)
  - 「EZR」= Plug type single phase(ON/OFF control)
- Type
  - 「F」= Fuse type; 「K」= Heat sink type; 「non」= Standard type
- Output current
  - 「10」= 10A; 「25」= 25A; 「40」= 40A; 「50」= 50A
  - 「60」= 60A; 「80」= 80A; 「100」= 100A
- Input method
  - 「D」= 4~32VDC; 「A」= 80~250VAC
  - 「L」= 4~20mA; 「V」= Variable resistor
- Output voltage
  - 「A」= AC voltage; 「D」= DC voltage
- Output voltage range
  - 「H」= High voltage type; 「Non」= Standard type
- Control method
  - 「Non」= Zero cross control; 「R」= Random control

#### PCB or Relay type

### SSR - P 03 DA - H

- Product
  - 「SSR」= Single phase solid state module
- Mounting method
  - 「P」= PCB type; 「M」= Mini PCB type
  - 「Y」= Relay type; 「R」= Relay type
- Output current
  - 「03」= 3A; 「05」= 5A
- Input method
  - 「D」= 4~32VDC
- Output voltage
  - 「A」= AC voltage; 「D」= DC voltage
- Output voltage range
  - 「H」= High voltage type
  - 「Non」= Standard type
  - 「R」= Random control

### SSR-Y & SSR-R & SSR-P & SSR-M Series PCB type

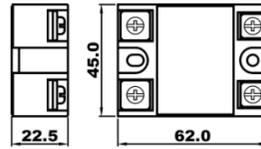
- ◎ Approved :
- ◎ Endured surge current over 10 times
- ◎ With double surge resistance circuit
- ◎ Conformity with EN60947-4-3 and EN60950



Type	Model	Rated current	Load voltage	Input method	Dimension	Type	Model	Rated current	Load voltage	Input method	Dimension
MY type	SSR-Y05DA	5A	24~380 VAC	4~32 VDC		PCB TYPE	SSR-P03DA	3A	24~380 VAC	4~32 VDC	
	SSR-Y05DD	5A	5~60 VDC	4~32 VDC			SSR-P03DD	3A	5~60 VDC	4~32 VDC	
Relay type	SSR-R02DA	2A	24~380 VAC	4~32 VDC		PCB TYPE	SSR-M01DA	1A	24~380 VAC	4~32 VDC	
	SSR-R05DD	5A	5~60 VDC	4~32 VDC			SSR-M05DD	5A	5~60 VDC	4~32 VDC	

### SSR & SCR Series Standard type

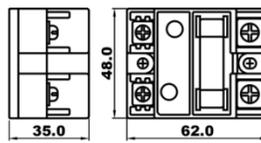
- Approved :
- Heat sink separated
- Endured surge current over 10 times
- With double surge resistance circuit
- Conformity with EN60947-4-3 and EN60950



Type	Model	Rated current	Load voltage	Input method	Type	Model	Rated current	Load voltage	Input method	Type	Model	Rated current	Load voltage	Input method	
DC to AC	SSR-10DA	10A	24-380 VAC	4-32 VDC	AC to AC	SSR-10AA	10A	24-380 VAC	80-250 VAC	DC to AC	SSR-10VA	10A	24-380 VAC	250kΩ / 110VAC 500kΩ / 220VAC	
	SSR-25DA	25A				SSR-25AA	25A				SSR-25VA	25A			
	SSR-40DA	40A				SSR-40AA	40A				SSR-40VA	40A			
	SSR-50DA	50A				SSR-50AA	50A				SSR-50VA	50A			
	SSR-75DA	75A				SSR-75AA	75A				SSR-75VA	75A			
	SSR-10DA-H	10A	90-480 VAC			SSR-10AA-H	10A	90-480 VAC			SSR-10VA-H	10A	90-480 VAC		1MΩ / 380VAC 2MΩ / 480VAC
	SSR-25DA-H	25A				SSR-25AA-H	25A				SSR-25VA-H	25A			
	SSR-40DA-H	40A				SSR-40AA-H	40A				SSR-40VA-H	40A			
	SSR-50DA-H	50A				SSR-50AA-H	50A				SSR-50VA-H	50A			
	SSR-75DA-H	75A				SSR-75AA-H	75A				SSR-75VA-H	75A			
Phase control	SCR-10LA	10A	90-250 VAC	4-20 mA	Phase control	SCR-10LA-H	10A	250-480 VAC	4-20 mA	DC to DC	SSR-05DD	5A	5-60 VDC	4-32 VDC	
	SCR-25LA	25A				SCR-25LA-H	25A				SSR-10DD	10A	5-120 VDC		
	SCR-40LA	40A				SCR-40LA-H	40A				SSR-25DD	25A			
	SCR-50LA	50A				SCR-50LA-H	50A				SSR-50DD	50A	5-300 VDC		
	SCR-75LA	75A				SCR-75LA-H	75A				SSR-75DD	75A			
													SSR-05DD-H		5A

### SSR-F Series Fuse type

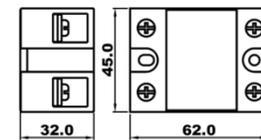
- Approved :
- Heat sink separated
- Endured surge current over 10 times
- With double surge resistance circuit
- Conformity with EN60947-4-3 and EN60950



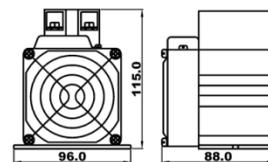
Type	Model	Fuse	Rated current	Load voltage	Input method	Type	Model	Fuse	Rated current	Load voltage	Input method	Type	Model	Fuse	Rated current	Load voltage	Input method
DC to AC	SSR-F-10DA	10A	6A	24-380 VAC	4-32 VDC	AC to AC	SSR-F-10AA	10A	6A	24-380 VAC	80-250 VAC	Phase control	SCR-F-10LA	10A	6A	90-250 VAC	4-20 mA
	SSR-F-25DA	25A	16A				SSR-F-25AA	25A	16A				SCR-F-25LA	25A	16A		
	SSR-F-40DA	32A	25A				SSR-F-40AA	32A	25A				SCR-F-40LA	32A	25A		
	SSR-F-10DA-H	10A	6A	90-480 VAC			SSR-F-10AA-H	10A	6A	SCR-F-10LA-H			10A	6A	250-480 VAC		
	SSR-F-25DA-H	25A	16A				SSR-F-25AA-H	25A	16A	SCR-F-25LA-H			25A	16A			
	SSR-F-40DA-H	32A	25A				SSR-F-40AA-H	32A	25A	SCR-F-40LA-H			32A	25A			

### HPR Series High power type

- Approved :
- Heat sink separated
- Endured surge current over 10 times
- With double surge resistance circuit
- Conformity with EN60947-4-3 and EN60950

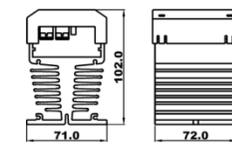


Type	Model	Rated current	Load voltage	Input method	Type	Model	Rated current	Load voltage	Input method	Dimension
DC to AC	HPR-60DA	60A	24-380 VAC	4-32 VDC	AC to AC	HPR-60AA	60A	24-380 VAC	20-265 VAC/DC	HPR-□□+
	HPR-80DA	80A				HPR-80AA	80A			
	HPR-100DA	100A				HPR-100AA	100A			
	HPR-60DA-H	60A	24-550 VAC			HPR-60AA-H	60A	24-550 VAC		
	HPR-80DA-H	80A				HPR-80AA-H	80A			
	HPR-100DA-H	100A				HPR-100AA-H	100A			



### ASR & ACR Series Enhanced heat sink

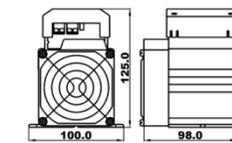
- Approved :
- Heat sink integrated
- Endured surge current over 10 times
- With double surge resistance circuit
- Conformity with EN60947-4-3 and EN60950



Type	Model	Fan	Rated current	Load voltage	Input method	Type	Model	Fan	Rated current	Load voltage	Input method	Dimension
DC to AC	ASR-40DA	X	32A	24-550 VAC	4-32 VDC	Phase control	ACR-40LA	X	32A	90-250 VAC	4-20 mA	100.0 x 125.0 x 98.0
	ASR-60DA	X	48A				ACR-60LA	X	48A			
	ASR-80DA+	V	64A				ACR-80LA+	V	64A			
	ASR-100DA+	V	80A				ACR-100LA+	V	80A			
	ASR-40AA	X	32A				ACR-40LA-H	X	32A			
AC to AC	ASR-60AA	X	48A	24-550 VAC	80-250 VAC	ACR-60LA-H	X	48A	250-480 VAC	4-20 mA		
	ASR-80AA+	V	64A			ACR-80LA-H+	V	64A				
	ASR-100AA+	V	80A			ACR-100LA-H+	V	80A				

### ASR-F & ACR-F Series Fuse type Enhanced heat sink

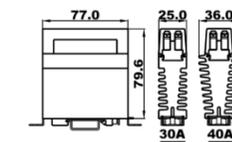
- Approved :
- Heat sink integrated
- Endured surge current over 10 times
- With double surge resistance circuit
- Conformity with EN60947-4-3 and EN60950



Type	Model	Fan	Fuse	Rated current	Load voltage	Input method	Type	Model	Fan	Fuse	Rated current	Load voltage	Input method
DC to AC	ASR-F-40DA	X	63A	32A	24-550 VAC	4-32 VDC	Phase control	ACR-F-40LA	X	63A	32A	90-250 VAC	4-20 mA
	ASR-F-60DA	X	80A	48A				ACR-F-60LA	X	80A	48A		
	ASR-F-80DA+	V	100A	64A				ACR-F-80LA+	V	100A	64A		
	ASR-F-100DA+	V	125A	80A				ACR-F-100LA+	V	125A	80A		
AC to AC	ASR-F-40AA	X	63A	32A	24-550 VAC	80-250 VAC	ACR-F-40LA-H	X	63A	32A	250-480 VAC	4-20 mA	
	ASR-F-60AA	X	80A	48A			ACR-F-60LA-H	X	80A	48A			
	ASR-F-80AA+	V	100A	64A			ACR-F-80LA-H+	V	100A	64A			
	ASR-F-100AA+	V	125A	80A			ACR-F-100LA-H+	V	125A	80A			

### SSR-K Series Rail type

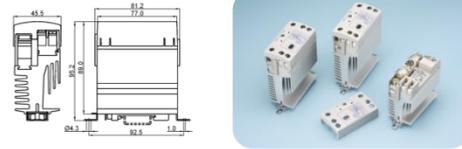
- Approved :
- Heat sink integrated
- Endured surge current over 10 times
- With double surge resistance circuit
- Conformity with EN60947-4-3 and EN60950



Type	Model	Rated current	Load voltage	Input method	Type	Model	Rated current	Load voltage	Input method	Type	Model	Rated current	Load voltage	Input method
DC to AC	SSR-K10DA	10A	24-380 VAC	4-32 VDC	AC to AC	SSR-K10AA	10A	24-380 VAC	20-265 VAC/DC	Phase control	SCR-K10LA	10A	90-380 VAC	4-20 mA
	SSR-K20DA	20A				SSR-K20AA	20A				SCR-K20LA	20A		
	SSR-K30DA	30A				SSR-K30AA	30A				SCR-K30LA	30A		
	SSR-K40DA	40A				SSR-K40AA	40A				SCR-K40LA	40A		
	SSR-K10DA-H	10A	90-550 VAC			SSR-K10AA-H	10A	180-550 VAC			SCR-K10LA-H	10A		
	SSR-K20DA-H	20A				SSR-K20AA-H	20A				SCR-K20LA-H	20A		
	SSR-K30DA-H	30A				SSR-K30AA-H	30A				SCR-K30LA-H	30A		
	SSR-K40DA-H	40A				SSR-K40AA-H	40A				SCR-K40LA-H	40A		
DC to DC	SSR-K25DD	25A	5-60VDC	4-32 VDC	Plug type	EZR-40DA	16A	24-380 VAC	4-32 VDC	Dimension	66.0 x 40.5 x 37.0			
	SSR-K10DD-H	10A	5-150VDC			EZR-40DA-H	16A					90-480 VAC		
	SSR-K10LD	10A	5-60 VDC			4-20 mA	EZR-40AA						16A	24-380 VAC
							EZR-40AA-H					16A	90-480 VAC	

**SCR-FK & SSR-FK Series Rail type SSR & SCR**

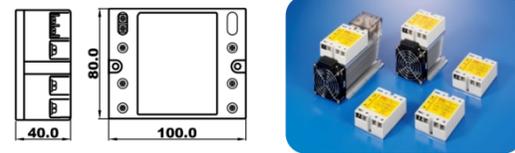
- Approved : CE
- Heat sink integrated
- Endured surge current over 10 times
- With double surge resistance circuit
- Conformity with EN60947-4-3 and EN60950



Input	4~20 mA				VR 500KΩ (1/4W)											
	Model	SCR-FK-25LA	SCR-FK-40LA	SCR-FK-25LAH	SCR-FK-40LAH	SSR-FK-25VA	SSR-FK-40VA	SSR-FK-25VAH	SSR-FK-40VAH							
Current max.	25A	40A	25A	40A	25A	40A	25A	40A	40A							
Current rated	20A	32A	20A	32A	20A	32A	20A	32A	32A							
Fuse	40A	63A	40A	63A	40A	63A	40A	63A	63A							
Output voltage	220VAC 50/60Hz				380VAC 50/60Hz				220VAC 50/60Hz				380VAC 50/60Hz			

**ESR Series 3 Phase SSR**

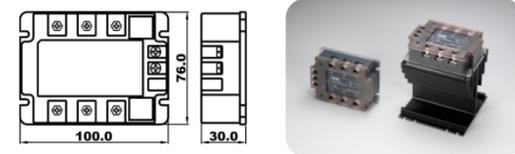
- Approved : CE
- Heat sink separated
- Endured surge current over 10 times
- With double surge resistance circuit
- Conformity with EN60947-4-3 and EN60950



Type	Model	Fan	Fuse	Rated current	Load voltage	Input method	Type	Model	Fan	Fuse	Rated current	Load voltage	Input method	Dimension
DC to AC	ESR-25DA	X	X	18A	24~380 VAC	4~32 VDC	AC to AC	ESR-25AA	X	X	18A	24~380 VAC	20~265 VAC/DC	ESR-□□□ + Heat sink + Fan
	ESR-40DA	X	X	28A				ESR-40AA	X	X	28A			
	ESR-60DA	X	X	42A				ESR-60AA	X	X	42A			
	ESR-80DA	X	X	56A				ESR-80AA	X	X	56A			
	ESR-100DA	X	X	70A				ESR-100AA	X	X	70A			
	ESR-25DA-H	X	X	18A	90~480 VAC			ESR-25AA-H	X	X	18A			
	ESR-40DA-H	X	X	28A				ESR-40AA-H	X	X	28A			
	ESR-60DA-H	X	X	42A				ESR-60AA-H	X	X	42A			
	ESR-80DA-H	X	X	56A				ESR-80AA-H	X	X	56A			
	ESR-100DA-H	X	X	70A				ESR-100AA-H	X	X	70A			
DC to AC	ESR-40DA+	V	63A	28A	24~380 VAC	4~32 VDC	AC to AC	ESR-40AA+	V	63A	28A	24~380 VAC	20~265 VAC/DC	ESR-□□□ + Heat sink + Fan
	ESR-60DA+	V	80A	42A				ESR-60AA+	V	80A	42A			
	ESR-80DA+	V	100A	56A				ESR-80AA+	V	100A	56A			
	ESR-100DA+	V	125A	70A				ESR-100AA+	V	125A	70A			
	ESR-40DA-H+	V	63A	28A				ESR-40AA-H+	V	63A	28A			
	ESR-60DA-H+	V	80A	42A	ESR-60AA-H+			V	80A	42A				
	ESR-80DA-H+	V	100A	56A	ESR-80AA-H+			V	100A	56A				
	ESR-100DA-H+	V	125A	70A	ESR-100AA-H+			V	125A	70A				

**TSR Series 3 Phase SSR**

- Approved : CE
- Heat sink separated
- Endured surge current over 10 times
- With double surge resistance circuit
- Conformity with EN60947-4-3 and EN60950



Type	Model	Rated current	Load voltage	Input method	Type	Model	Rated current	Load voltage	Input method	Dimension
DC to AC	TSR-25DA	18A	24~380 VAC	4~32 VDC	AC to AC	TSR-25AA	18A	24~380 VAC	80~250 VAC	TSR-□□□ + Heat sink
	TSR-40DA	28A				TSR-40AA	28A			
	TSR-50DA	40A				TSR-50AA	40A			
	TSR-75DA	60A	TSR-75AA			60A				
	TSR-25DA-H	18A	90~480 VAC			TSR-25AA-H	18A			
	TSR-40DA-H	28A				TSR-40AA-H	28A			
	TSR-50DA-H	40A				TSR-50AA-H	40A			
	TSR-75DA-H	60A	TSR-75AA-H			60A				

**LSR Series 3 Phase Enhanced heat sink**

- Approved : CE
- Heat sink integrated
- Endured surge current over 10 times
- With double surge resistance circuit
- Conformity with EN60947-4-3 and EN60950



Type	Model	Fan	Fuse	Rated current	Load voltage	Input method	Type	Model	Fan	Fuse	Rated current	Load voltage	Input method
DC to AC	LSR-25DA	X	X	20A	24~550 VAC	4~32 VDC	AC to AC	LSR-25AA	X	X	20A	24~550 VAC	20~265 VAC
	LSR-40DA+	V	X	32A				LSR-40AA+	V	X	32A		
	LSR-60DA+	V	X	48A				LSR-60AA+	V	X	48A		
	LSR-80DA+	V	X	64A				LSR-80AA+	V	X	64A		
	LSR-100DA+	V	X	80A				LSR-100AA+	V	X	80A		
	LSR-100DAN+	V	X	100A				LSR-100AAN+	V	X	100A		
DC to AC	LSR-F-25DA	X	35A	20A	24~550 VAC	4~32 VDC	AC to AC	LSR-F-25AA	X	35A	20A	24~550 VAC	20~265 VAC
	LSR-F-40DA+	V	63A	32A				LSR-F-40AA+	V	63A	32A		
	LSR-F-60DA+	V	80A	48A				LSR-F-60AA+	V	80A	48A		
	LSR-F-80DA+	V	100A	64A				LSR-F-80AA+	V	100A	64A		
	LSR-F-100DA+	V	125A	80A				LSR-F-100AA+	V	125A	80A		
	LSR-F-100DAN+	V	125A	100A				LSR-F-100AAN+	V	125A	100A		

**LSR-AL Series 3 Phase Safety type Enhanced heat sink**

- Approved : CE
- Alarm output : NPN
- Heat sink integrated
- Endured surge current over 10 times
- With double surge resistance circuit
- Conformity with EN60947-4-3 and EN60950



Type	Model	Fan	Fuse	Rated current	Load voltage	Input method	Type	Model	Fan	Fuse	Rated current	Load voltage	Input method
DC to AC	LSR-25DA-AL	X	X	20A	180~550 VAC	4~32 VDC	DC to AC	LSR-F-25DA-AL	X	35A	20A	180~550 VAC	4~32 VDC
	LSR-40DA-AL	V	X	32A				LSR-F-40DA-AL	V	63A	32A		
	LSR-60DA-AL	V	X	48A				LSR-F-60DA-AL	V	80A	48A		
	LSR-80DA-AL	V	X	64A				LSR-F-80DA-AL	V	100A	64A		
	LSR-100DA-AL	V	X	80A				LSR-F-100DA-AL	V	125A	80A		
	LSR-100DAN-AL	V	X	100A				LSR-F-100DAN-AL	V	125A	100A		
Remarks	1. Aux. power : 24VDC ±10% 2. Fan power : 24VDC ±10% 3. Alarm function : Load power loss phase or Fuse break / 3 phase output module over heat / Temperature sensor error / Fan error												
Dimension	LSR-25DA (AL) / LSR-25AA			LSR-xxDA (AL) /AA			LSR-F-xxDA (AL) /AA			LSR-F-xxDAN (AL) /AAN			
	96.0			96.0			96.0			96.0			
	128.0			128.0			128.0			128.0			

**DSV Series Digital Constant Voltage Regulator**

- Approved : CE
- Constant voltage control by Voltage feedback
- Power frequency 50/60 Hz auto-detect
- Soft start / kick start time settable
- Output volume limit settable
- Multi-input type selectable (4~20mA / 0~20mA / 1~5V / 2~10V / 0~5V / 0~10V or VR-10kΩ)



Model	DSV-240-RS	DSV-340-RS	DSV-440-RS	DSV-265-RS	DSV-365-RS	DSV-465-RS	DSV-240	DSV-340	DSV-440	DSV-265	DSV-365	DSV-465
voltage	220VAC	380VAC	440VAC	220VAC	380VAC	440VAC	220VAC	380VAC	440VAC	220VAC	380VAC	440VAC
Current	32A max.			65A max.			32A max.			65A max.		
Fuse	63A			80A			63A			80A		
Input	RS-485 (Modbus-RTU or ASCII)						4~20mA / 0~20mA / 1~5V / 2~10V / 0~5V / 0~10V or VR-10kΩ					

ULC & KSC Series Digital Power Regulator

- Approved :
- Power frequency 50/60 Hz auto-detect
- Zero cross control or phase control selectable/Soft start or kick start time settable
- Multi-input type selectable (4~20mA / 0~20mA / 1~5V / 2~10V / 0~5V / 0~10V or VR-10kΩ)
- Aux. power : 90~265VAC
- Load voltage : 220~480VAC 50/60 Hz



Type	Three Phase				Single Phase				
	Model	ULC-40-RS	ULC-40-CT-RS	ULC-80-RS	ULC-80-CT-RS	KSC-40-RS	KSC-40-CT-RS	KSC-80-RS	KSC-80-CT-RS
Current detect	Non	CT	Non	CT	Non	CT	Non	CT	CT
Communication	RS-485		RS-485		RS-485		RS-485		
Current rated	40A		65A		40A		65A		
Main power	220~480VAC 50 / 60Hz								

LCR Series 3 Phase Digital Power Regulator

- Approved :
- Power frequency 50/60 Hz auto-detect
- Zero cross control or phase control selectable/Soft start or kick start time settable
- Multi-input type selectable (4~20mA / 0~20mA / 1~5V / 2~10V / 0~5V / 0~10V or VR-10kΩ)



Type	Model	Fuse	Max. load	Rated load	Control	Load voltage	Aux. power	Type	Model	Fuse	Max. load	Rated load	Control	Load voltage	Aux. power	Dimension
Standard	LCR-40	63A	40A	32A	Zero cross control or phase control selectable	180~440VAC 50 / 60Hz	90~265VAC 50 / 60Hz	High Voltage	LCR-40H	63A	40A	32A	Zero cross control or phase control selectable	280~550VAC 50 / 60Hz	90~265VAC 50 / 60Hz	
	LCR-60	80A	60A	48A					LCR-60H	80A	60A	48A				
	LCR-80	100A	80A	64A					LCR-80H	100A	80A	64A				
	LCR-100	125A	100A	80A					LCR-100H	125A	100A	80A				
	LCR-100N	125A	100A	100A					LCR-100HN	125A	100A	100A				

TSC/DSC/EPS/TPS series Digital Power Regulator

- Approved :
- Power frequency 50/60 Hz auto-detect
- Zero cross control or phase control selectable/Soft start or kick start time settable
- Multi-input type selectable (4~20mA / 0~20mA / 1~5V / 2~10V / 0~5V / 0~10V or VR-10kΩ)



Type	Model	Fuse	Max. load	Rated load	Aux. power	Load voltage	Type	Model	Fuse	Max. load	Rated load	Aux. power	Load voltage	Type	Model	Fuse	Max. load	Rated load	Aux. power	Load voltage	
3 phase	TSC-340	63A	40A	32A	90~265VAC	180~440VAC 50/60Hz	3 phase	TPS3-40	63A	40A	32A	220 or 380VAC 50/60Hz	180~440VAC 50/60Hz	2 phase	TPS2-100	125A	100A	80A	220 or 380VAC 50/60Hz	180~440VAC 50/60Hz	
	TSC-365	80A	65A	48A				TPS3-60	80A	60A	48A				TPS2-125	125A	125A	100A			
	EPS3-40	63A	40A	32A				TPS3-80	100A	80A	64A				TPS2-160	160A	160A	125A			
	EPS3-60	80A	60A	48A				TPS3-100	125A	100A	80A				TPS2-200	200A	200A	160A			
	ESP3-80	100A	80A	64A				TPS3-125	125A	125A	100A				TPS1-160	160A	160A	125A			
								TPS3-160	160A	160A	125A				TPS1-200	200A	200A	160A			
Single phase	DSC-240	32A	32A	25A	220 or 380VAC	non	Single phase	EPS1-40	63A	40A	32A	220 or 380VAC 50/60Hz	180~440VAC 50/60Hz	2 phase	EPS2-40	63A	40A	32A	220 or 380VAC 50/60Hz	180~440VAC 50/60Hz	
	DSC-340	32A	32A	25A				380VAC	EPS1-60	80A	60A				48A	EPS2-60	80A	60A			48A
	DSC-440	32A	32A	25A				440VAC	EPS1-80	100A	80A				64A	EPS2-80	100A	80A			64A
	DSC-265	80A	65A	48A				220VAC	EPS1-100	125A	100A				80A	EPS2-100	125A	100A			80A
	DSC-365	80A	65A	48A				380VAC	EPS1-125	125A	125A				100A	EPS2-125	125A	125A			100A
	DSC-465	80A	65A	48A				440VAC	EPS1-150	160A	150A				125A	EPS2-150	160A	150A			125A

DSC-240/DSC-340/DSC-440	DSC-265/DSC-365/DSC-465	TSC-340/TSC-365	EPS1-40~125
EPS2-40~125/EP3-40~80	EPS1-150/EP2-150	TPS1/TPS2/TPS3	LCR&LSR-100N

Heat sink

Notice of use

H type heat sink				H type Fixed bracket	
	Model	Length(L mm)	Current rated	SSR(quantity)	
	HS-50H	50.0	10A max.	Single	
	HS-100H	100.0	20A max.	Twice	
	HS-150H	150.0	30A max.	Three	
	HS-200H	200.0	---	Four	
	HS-250H	250.0	---	Five	
	HS-300H	300.0	---	Six	

Standard type (HS-xx)				
	Type	Length(L mm)	Current rated	SSR(quantity)
	HS-50	50.0	15A max.	Single
	HS-100	100.0	30A max.	Twice
	HS-150	150.0	50A max.	Three
	HS-200	200.0	---	Four
	HS-250	250.0	---	Five

How to use Heat sink & Cooling fan [ 3 phase ] & [ Single phase ]

3 phase Line current	Heat sink	Cooling fan	3 phase Line current calculated	Single phase Line current	Heat sink	Cooling fan
IL < 5 Amps	X	X	IL = W ÷ (√3 x VL x cosθ)	IL < 5 Amps	X	X
IL < 10 Amps	HS-ESR-100	V	IL = W ÷ (√3 x VL x cosθ)	IL < 12 Amps	HS-50H	X
IL < 25 Amps	HS-ESR-100	V	VL : Line voltage	IL < 25 Amps	HS-50	X
IL > 10 Amps	HS-ESR-100K	V	cosθ : Power factor	IL > 25 Amps	HS-50	V

Notice of use

- To protect the solid state module against a short-circuit of the load, please use a fuse with a I<sup>2</sup>t value < 1/2 I<sup>2</sup>t value specified.
- The thermal conductive silicone rubber or thermal grease is required when the solid state module is mounted on a heat sink
- The rated current is corresponding to a resistive load, if the solid state module is applied in other loads, Please consider the inrush current at turn on and the surge voltage at turn off.
  - Electric discharge lamps : Those loads have the 「inrush current」 at turn on and the 「surge voltage」 at turn off, please use 「high voltage type」 on 220VAC mains.
  - Incandescent lamp : The rated current of the module must be over 4 times of the incandescent lamp current.
  - Three phase motors : The rated current of the module must be over 4 times of the three phase motor average current .
  - Transformer loads : The rated current of the module must be over 10 times of the transformer current.
  - Capacitor loads, the rated current of the module must be over 3 times of the capacitor current .

Notice of safety

- WARNING** Potentially hazardous situation, if mishandling, may result in death or serious injury.
- Please do not touch any terminal of this module while power supply is supplied, if do, it may result in electronic shock.
  - 「Power supply system」 must be shutdown before renew the fuse, if not, it may result in electronic shock.
  - Please rated the load current within the specified value, if not, it may result to burn up this module or fuse.
    - if ambient temperature over 45°C , please reduce the load current under 90% of rated current,
    - if ambient temperature over 55°C , please reduce the load current under 80% of rated current.
  - Please tighten the screw terminal over the tighten torque required, if not, it may result to burn up this module or fuse.
 

Item	Tighten torque min.(Class 8.9)
M4	Over 30.3 kgf-cm
M5	Over 53 kgf-cm
M6	Over 93.8 kgf-cm
  - If this module is burned up, it may be in short circuit condition or malfunction, please settle an independent alarm system to ensure safety protection, if not, it may result in a serious accident.