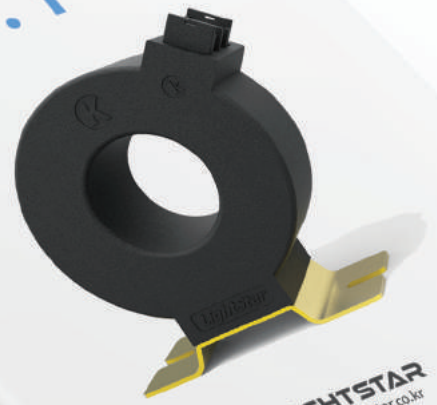


DIGITAL METER



LIGHTSTAR
www.lightstar.co.kr

C.T



LIGHTSTAR
www.lightstar.co.kr

Eng ver.
LIGHTSTAR
TOTAL CATALOGUE

TRANSDUCER



LIGHT
www.l

ANALOGUE



LIGHTSTAR
www.lightstar.co.kr

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Company Name

LIGHTSTAR

Establishment Date

October 15, 1979

President and CEO

Byung chen, Lim

Number of Employees

80

Head Office

ADDRESS #46034, 126, Jangansandan 8-ro, Jangan-eup, Gijang-gun, Busan

Tel +82-51-723-3000

Fax +82-505-115-3013

Homepage www.lightstar.co.kr(English)

www.vaw.co.kr(Korean)

Products

Analogue Meter, Digital Meter (Power, Energy, Current, Voltage, Frequency, PF..ETC.), Transducer
Current Transformer, Potential Transformer, Lighting Control System, Power Monitoring System

Organization





Electric Room

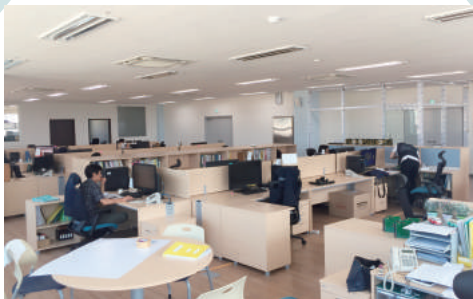


Factory of Meter

Photos



CEO



R&D Center



Factory of CT



Monitoring Room

Certificates



< CE - Current transformer >



< CE - Current transformer >



< CE - AC Ammeter >



< CE - AC Voltmeter >



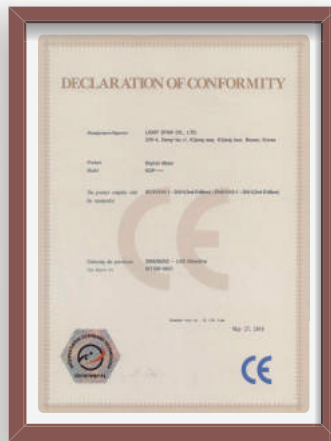
< CE - DC Ammeter >



< CE - AC Ammeter(Digital) >



< CE - AC Volt meter(Digital) >



< CE - Digital meter >



< CE - Panel Power Meter >



< CE - Digital Power Meter >



< ISO >



< ABS >

- Large LCD display
- I/O 4 Inputs, 2 Outputs
- RS-485 or TCP/IP Communication



Ordering Information



1	Function	2	Communication	3	Terminal
0	Basic Measurement	0	None	U	Bolt
1	Basic+2DO+4DI	1	RS-485	I	Pin
2	Basic+2Temp	2	TCP/IP		
3	Basic+2DO+4DI+2Temp				
4	Basic+2DO+4DI+Leakage Current				

Technical Data

Measurement & Accuracy

Current	≤0.5% of reading + 1digit
Voltage	≤0.5% of reading + 1digit
Frequency	≤0.1% of reading + 1digit
Active power (Import/Export)	≤0.5% of reading + 1digit
Reactive power (Import/Export)	≤1.5% of reading + 1digit
Apparent power (Import/Export)	≤1.5% of reading + 1digit
Power factor	≤1.5% of reading + 1digit
Active energy (Import/Export)	≤1.0% of reading + 1digit
Reactive energy (Import/Export)	≤3.0% of reading + 1digit

Inputs

Auxiliary Supply	AC 90~260V (50 or 60Hz), DC110V
Voltage (Direct or Secondary)	AC 40~500V
Current (Direct or Secondary)	AC 0.1~6.0A
Voltage Ratio	Max. 154KV(3P3W), 22.9KV(3P4W) / 110V
Current Ratio	Max. 6000A / 5A

Display

Type	5.1 inch LCD, White backlight
Number of Line	4Digits X 3Lines + 9Digits X 1Line
Max.Height of Character	15mm

Communication

RS-485 Modbus RTU	2-wire, 0~255 Address, 4800~19200bps
TCP/IP Modbus	Lan, RJ45 Port

Environmental Condition

Operating temperature	0~55°C
Storage temperature	-20~85°C
Relative humidity	≤80%
Ingress protection rating	IP52(front), IP20(case)

I/O

4 digital inputs, 2 digital outputs, 2Temp (PT100Ω)

Certificates

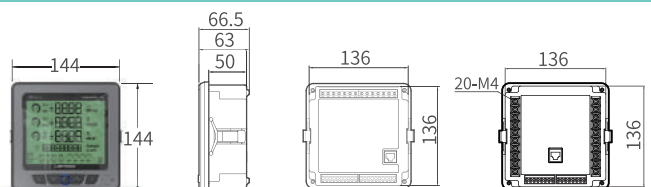
CE

Connections

Circuit	Three phase 3wire, Three phase 4wire
CT, PT, Aux Terminal	M4 Bolt
RS-485, I/O Terminal	Solid : 0.2~4.0mm ² (30~12AWG) Stranded : 0.2~2.5mm ² (30~12AWG)

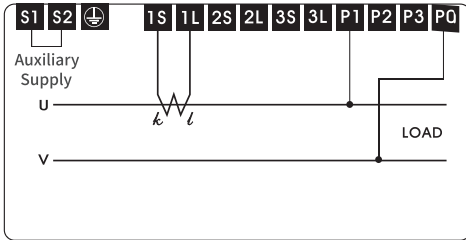
Dimensions

Panel Cutout(mm)	137(W) x 137(H)
Product(mm)	144(W) x 144(H) x 66.5(D)
Weight(g)	620g(unpacked), 840g(shipping)

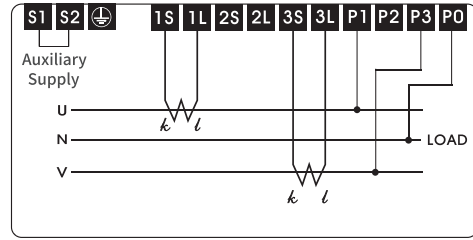


Connection Diagram

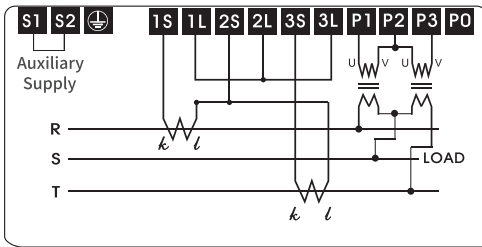
1Φ2W



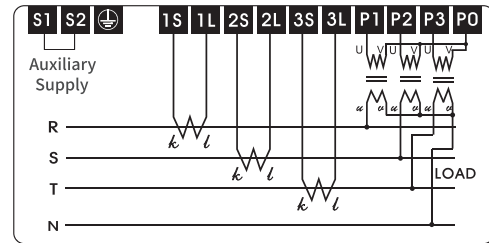
1Φ3W



3Φ3W

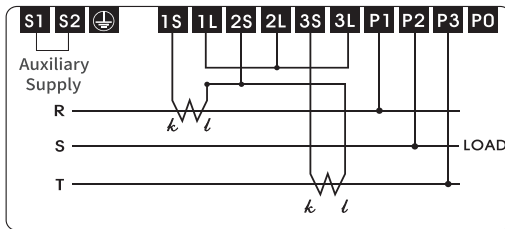


3Φ4W

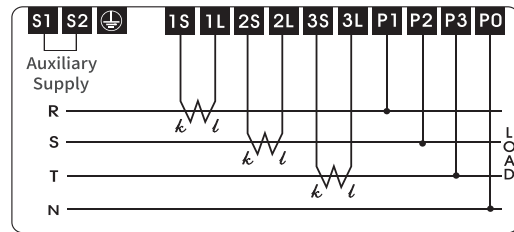


※ Method of direct connection without PT of line-to-line voltage 40~500V

3Φ3W

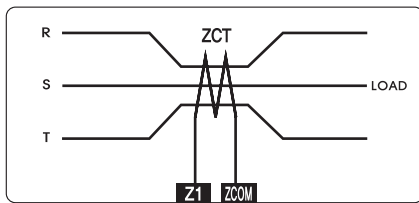


3Φ4W

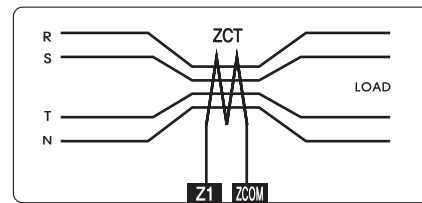


※ Method of connection with ZCT

3Φ3W

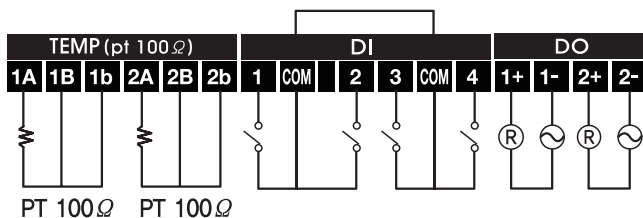


3Φ4W

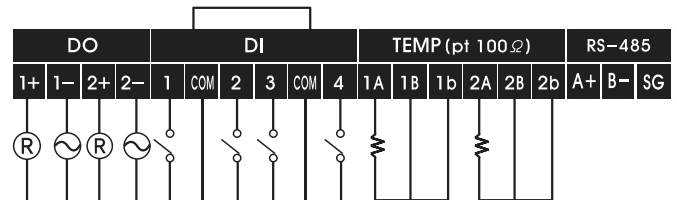


※ DI, DO, Temperature method of connection

Bolt terminal type



Pin terminal type



- LCD display
- RS-485 communication
- Rotating LED for WH



Ordering Information

KDX-300

Technical Data

Measurement & Accuracy

Current	≤0.5% of reading + 1digit
Voltage	≤0.5% of reading + 1digit
Frequency	≤0.05 % of reading + 1digit
Active power (Import/Export)	≤0.5% of reading + 1digit
Reactive power (Import/Export)	≤1.5% of reading + 1digit
Apparent power (Import/Export)	≤1.5% of reading + 1digit
Power factor	≤1.5% of reading + 1digit
Active energy (Import/Export)	≤1.0% of reading + 1digit
Reactive energy (Import/Export)	≤3.0% of reading + 1digit

Inputs

Auxiliary Supply	AC 90~260V (50 or 60Hz), DC110V
Voltage (Direct or Secondary)	AC 40~500V
Current (Direct or Secondary)	AC 0.1~6.0A
Voltage Ratio	Max. 154KV(3P3W), 22.9KV(3P4W) / 110V
Current Ratio	Max. 6000A / 5A

Display

Type	3.5inch LCD, white black light
Number of Line	4Digits X 3Lines + 9Digits X 1Line
Max.Height of Character	10.8mm

Communication

RS-485 Modbus RTU	2-wire, 0~255 Address, 4800~19200bps
-------------------	---

Environmental Condition

Operating temperature	0~55°C
Storage temperature	-20~85°C
Relative humidity	≤80%
Ingress protection rating	IP52(front), IP20(case)

Connections

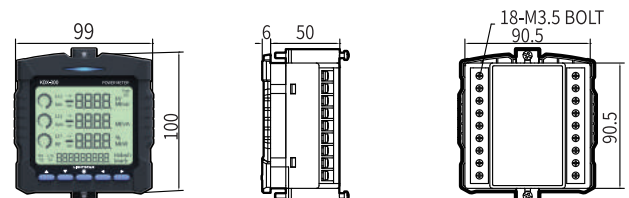
Circuit	Three phase 3wire, Three phase 4wire
CT, PT, Aux Terminal	M3.5 Bolt
RS-485 Terminal	Solid : 0.2~4.0mm ² (30~12AWG) Stranded : 0.2~2.5mm ² (30~12AWG)

Certificates

CE

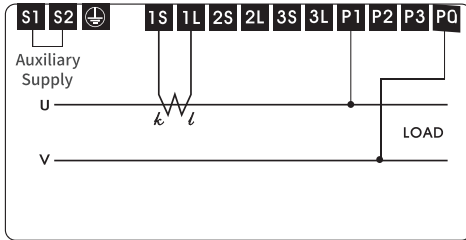
Dimensions

Panel Cutout(mm)	91.5(W)X91.5(H)
Product(mm)	99(W)X100(H)X50(D)
Weight(g)	420G(unpacked), 640G(shipping)

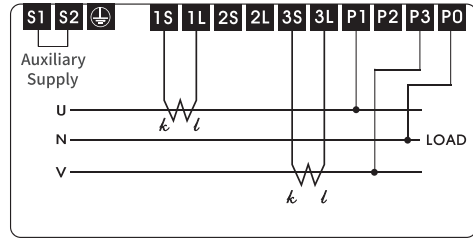


Connection Diagram

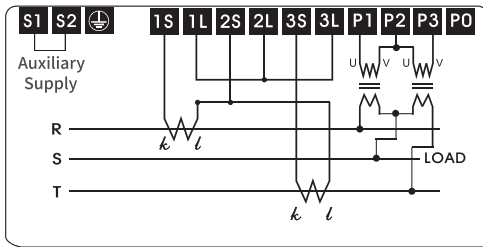
1Φ2W



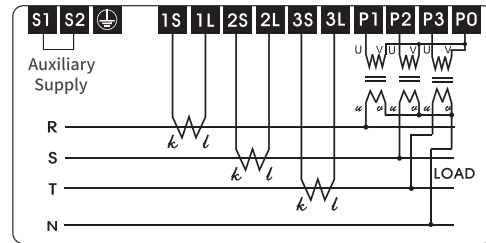
1Φ3W



3Φ3W



3Φ4W



- Compact size power, energy meter
- RS-485 Communication



Ordering Information



- 1** Communication
- C** RS-485 Modbus
- N** None

Technical Data

Measurement & Accuracy

Current	≤0.5% of reading + 1digit
Voltage	≤0.5% of reading + 1digit
Frequency	≤0.1% of reading + 1digit
Active power	≤0.5% of reading + 1digit
Reactive power	≤1.5% of reading + 1digit
Power factor	≤1.5% of reading + 1digit
Active energy	≤1.0% of reading + 1digit

Inputs

Auxiliary Supply	AC 90~260V (50 or 60Hz), DC110V
Voltage (Direct or Secondary)	AC 40~500V
Current (Direct or Secondary)	AC 0.1~6.0A
Voltage Ratio	Max. 154KV(3P3W), 22.9KV(3P4W) / 110V
Current Ratio	Max. 6000A / 5A

Display

Type	FND, Red color
Number of Line	4Digits X 3Lines
Height of Character	14mm

Communication

RS-485 Modbus RTU	2-wire, 0~255 Address 9600bps
-------------------	----------------------------------

Environmental Condition

Operating temperature	0~55°C
Storage temperature	-20~85°C
Relative humidity	≤80%
Ingress protection rating	IP54(front), IP20(case)

Connections

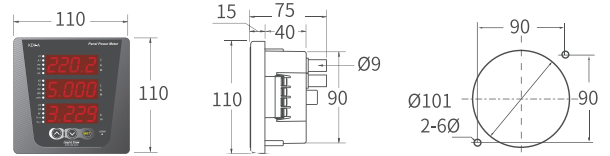
Circuit	Three phase 3wire Three phase 4wire
CT, PT, Aux Terminal	M4 Bolt
RS-485 Terminal	Solid : 0.2~4.0mm ² (30~12AWG) Stranded : 0.2~2.5mm ² (30~12AWG)

Certificates

CE, RoHS

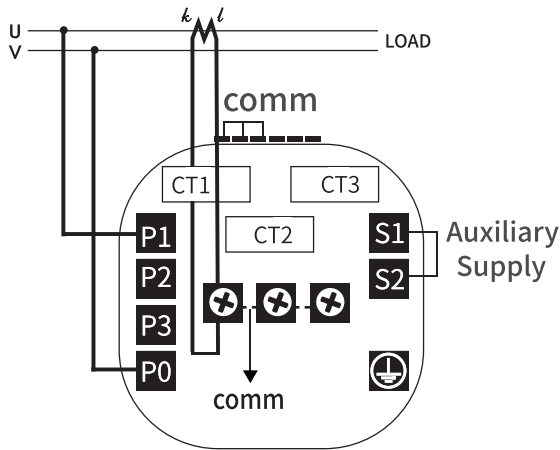
Dimensions

Panel Cutout(mm)	101Ø, 2 * 6Ø
Product(mm)	110(W) x 110(H) x 75(D)
Weight(g)	350g(unpacked), 570g(shipping)

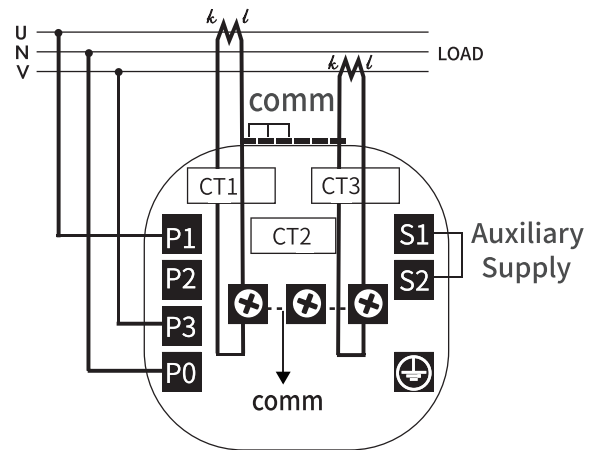


Connection Diagram

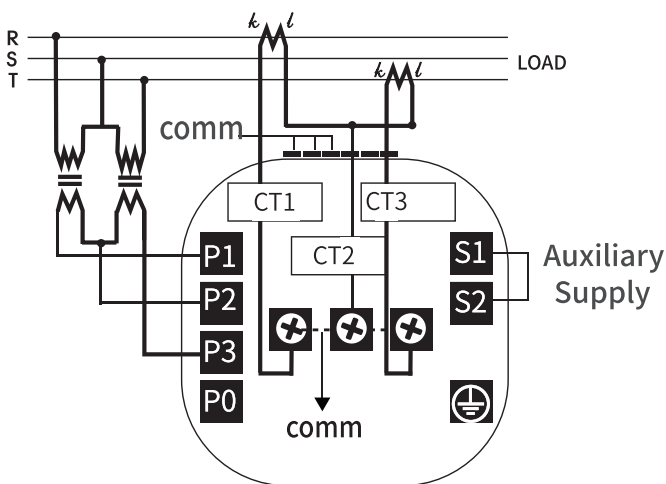
1Φ2W



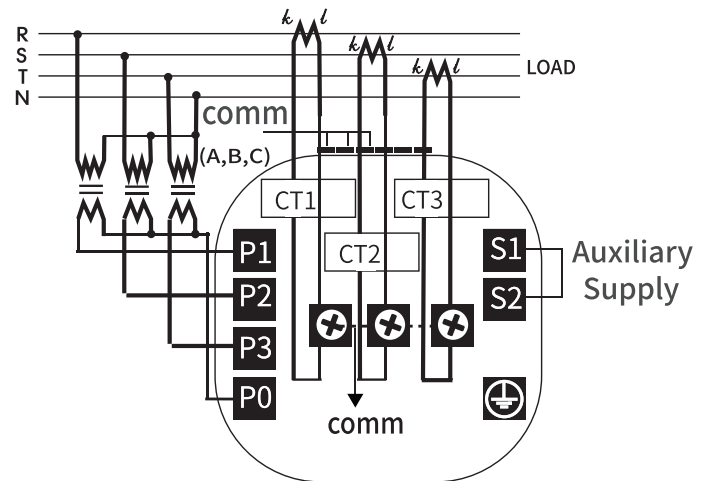
1Φ3W



3Φ3W

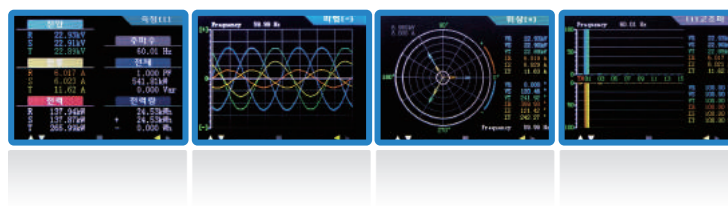


3Φ4W



- Power Quality Meter
- Color LCD display
- Waveform, Vector diagram
- 15th Harmonic

• Display



Ordering Information

KDQ-100

Technical Data

Measurement & Accuracy

Current	≤0.2% of reading + 1digit
Voltage	≤0.2% of reading + 1digit
Frequency	≤0.1% of reading + 1digit
Active power	≤0.5% of reading + 1digit
Reactive power	≤1.0% of reading + 1digit
Power factor	≤1.0% of reading + 1digit
Active energy	≤1.0% of reading + 1digit
Reactive energy	≤1.0% of reading + 1digit
Phase angle	≤0.5°

Inputs

Auxiliary Supply	AC 90~260V (50 or 60Hz), DC110V
Voltage (Direct or Secondary)	AC 40~500V
Current (Direct or Secondary)	AC 0.05~5.5A
Voltage Ratio	2000 : 1
Current Ratio	2000 : 1

Display

Type	TFT color LCD 3.2inch
Dot pixels	320X240

Communication

RS-485 Modbus RTU	2-wire, 0~255 Address, 4800~19200bps
-------------------	---

Power quality measurement

Waveform	7680sampling/sec
Phase Angle	Vector diagram
Harmonic	1 st ~ 15 th

Environmental Condition

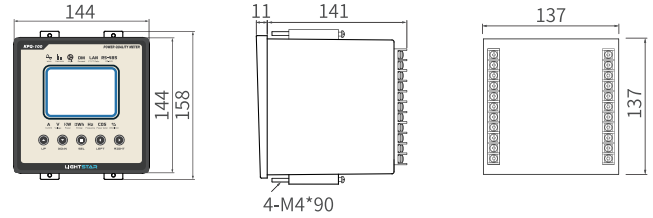
Operating temperature	0~55°C
Storage temperature	-20~85°C
Relative humidity	≤80%
Ingress protection rating	IP54(front), IP20(case)

Connections

Circuit	Three phase 3wire, Three phase 4wire,
CT, PT, Aux Terminal	M4 Bolt
RS-485 Terminal	M4 Bolt

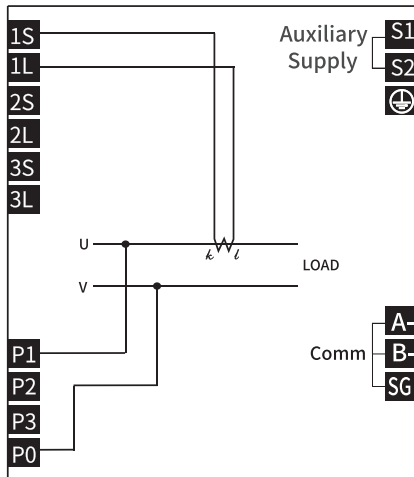
Dimensions

Panel Cutout(mm)	137(W) x 137(H)
Product(mm)	144(W) x 144(H) x 152(D)
Weight(g)	820g(unpacked), 1100g(shipping)

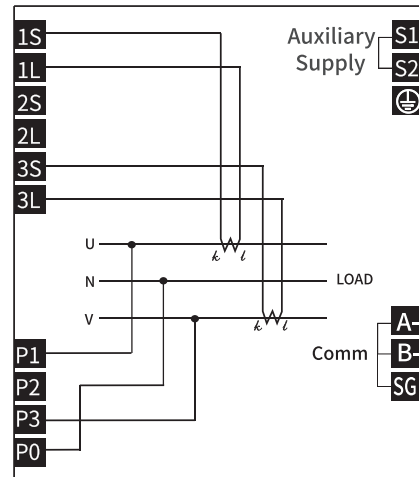


Connection Diagram

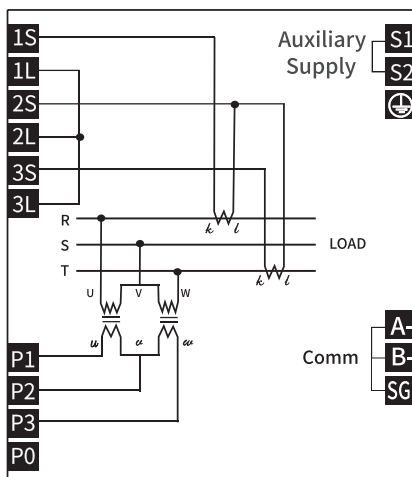
1Φ2W



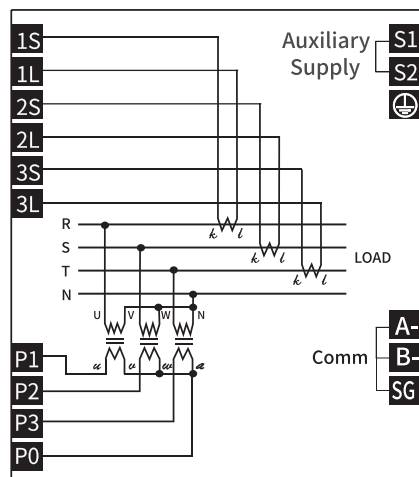
1Φ3W



3Φ3W



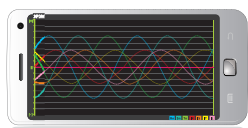
3Φ4W



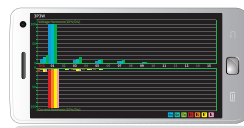
• App Android



• CB ON / OFF



• LOCAL/ REMOTE



Ordering Information

KDQ-200

Technical Data

Measurement & Accuracy

Current	≤ 0.3% of reading + 0.2% of F.S
Voltage	≤ 0.3% of reading + 0.2% of F.S
Frequency	≤ 0.1% of reading + 0.02% Hz
Active power	≤ 1.0% of reading + 0.2% of F.S
Reactive power	≤ 1.0% of reading + 0.2% of F.S
Power factor	≤ 1.0% of reading + 0.2% of F.S
Active energy	≤ Active Power Accuracy + 0.1 count/h

Inputs

Auxiliary Supply	AC 90~260V (50 or 60Hz)
Voltage (Direct or Secondary)	AC 500V
Current (Direct or Secondary)	AC 5A
Voltage Ratio	0 ~ 3200.000
Current Ratio	0 ~ 2,000
CB OPEN / CLOSE DI	AC / DC 110V or 220V

Outputs

CB OPEN / CLOSE DO	16A AC 240V, 30A DC 125V
DI 1~8	5A AC 240V, 5A DC 30V

Display

Type	Character LCD
Number of Line	20 Character X 4Lines
Height of Character	123.5(W)mm X 43.0(H)mm (Viewing area)

Power quality measurement

Waveform	7680sampling/sec
Phase Angle	Vector diagram
Harmonic	1 st ~ 15 th

Communication

RS-485 Modbus RTU	2 Wire, 0 ~ 255 Address 9600, 19200, 38400 bps
Bluetooth v2.0 EDR	Android application(5m)

Environmental Condition

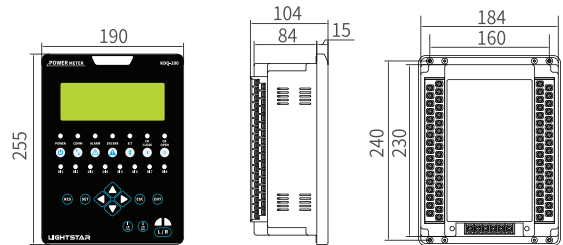
Operating temperature	0~55°C
Storage temperature	-20~85°C
Relative humidity	≤80%
Ingress protection rating	IP54(front), IP20(case)

Connections

Circuit	one phase 2wire	CT, PT, Aux Terminal	M4 Bolt
	one phase 3wire	RS-485 Terminal	M4 Bolt

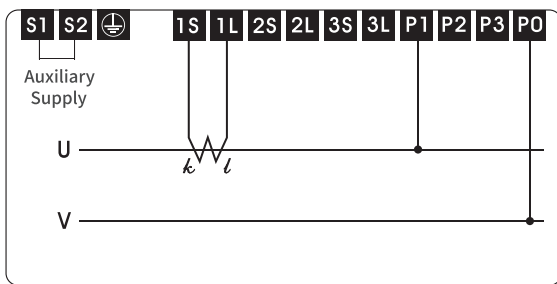
Dimensions

Panel Cutout(mm)	231(W) X 185(H)
Product(mm)	190(W) x 255(H) x 104(D)
Weight(g)	1810g(unpacked), 2020g(shipping)

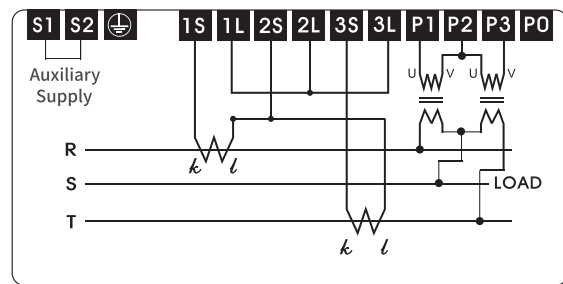


Connection Diagram

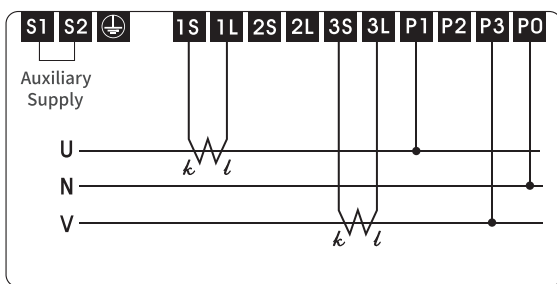
1Φ2W



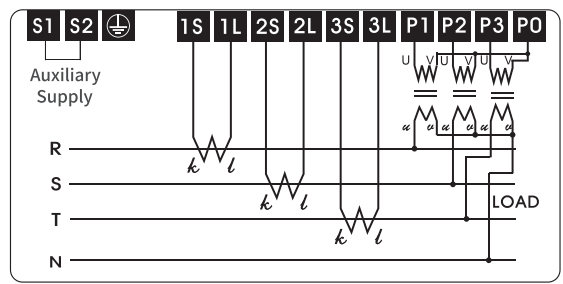
1Φ3W



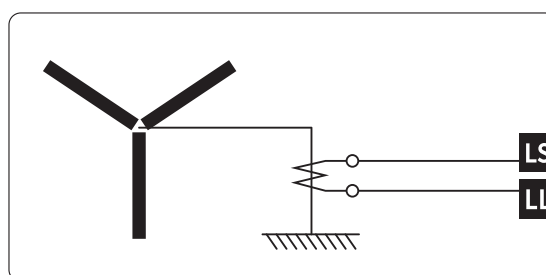
3Φ3W



3Φ4W



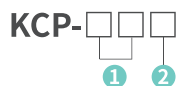
Connection - LCT



- For balanced three phase



Ordering Information



1	Digital output	2	Communication
06	6 Point	C	RS-485 Modbus
12	12 Point	N	None

Technical Data

Measurement & Accuracy

Current	≤0.5% of reading + 2digit
Voltage	≤0.5% of reading + 2digit
Active power	≤0.5% of reading + 2digit
Reactive power	≤1.5% of reading + 2digit
Power factor	≤3.0% of reading + 2digit
Minimum Measurable	100mA at AC 110V

Inputs

Auxiliary Supply	AC 90~260V (50 or 60Hz), DC 110V
Voltage (Direct or Secondary)	Line to Line Voltage(S-T) Max. 500V
Current (Direct or Secondary)	Current R Max. 5A
Voltage Ratio	22.9kV / 110V
Current Ratio	Max. 6000A / 5A

Display

Type	FND, Red color
Number of Line	4Digits X 3Lines
Height of Character	14mm

Communication

RS-485 Modbus RTU	2-wire, 0~255 Address 9600bps
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Environmental Condition

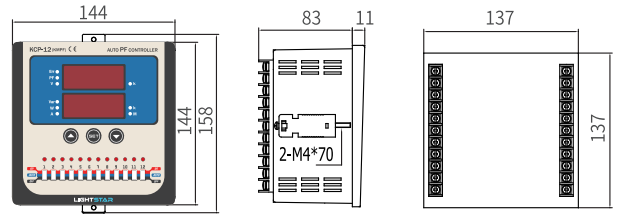
Operating temperature	0~55°C
Storage temperature	-20~85°C
Relative humidity	≤80%
Ingress protection rating	IP54(front), IP20(case)

Connections

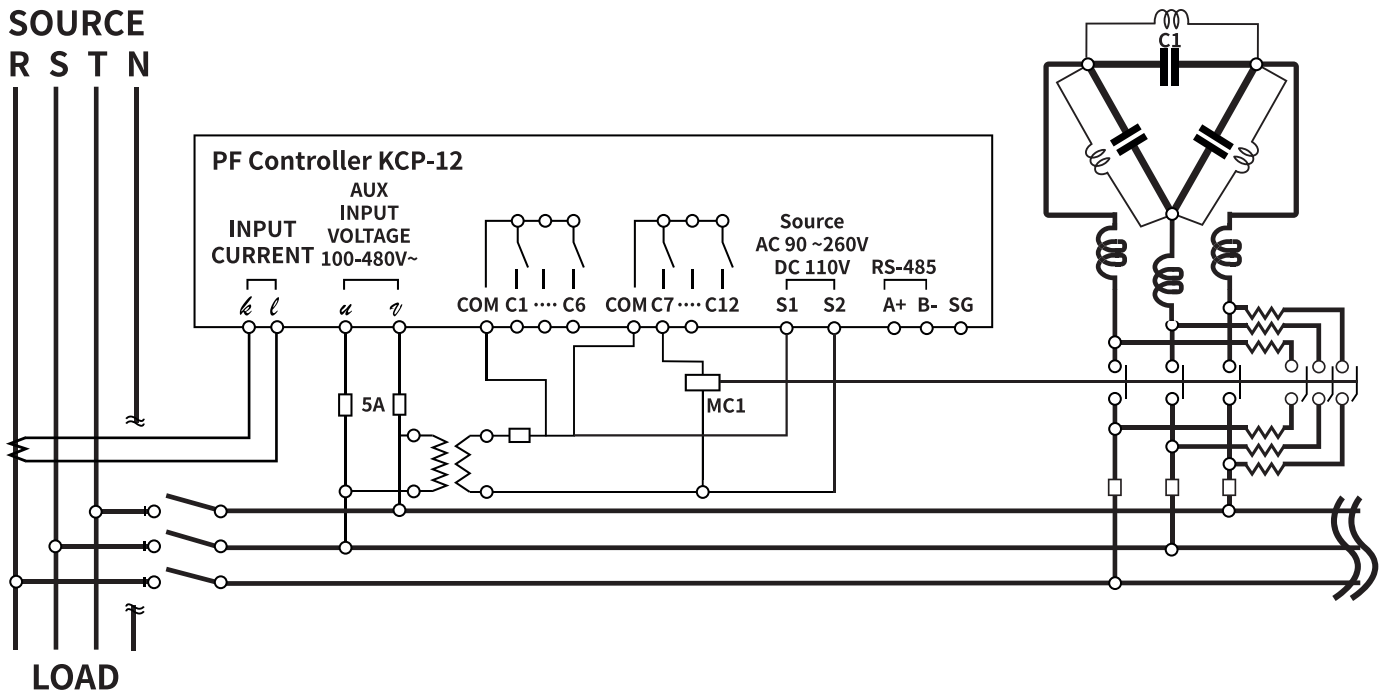
Circuit	One phase 1 Wire(for Balanced)
CT, PT, Aux Terminal	M4 Bolt
RS-485 Terminal	Solid : 0.2~4.0mm ² (30~12AWG) Stranded : 0.2~2.5mm ² (30~12AWG)

Dimensions

Panel Cutout(mm)	137(W) x 137(H)
Product(mm)	144(W) x 144(H) x 90(D)
Weight(g)	630g(unpacked), 840g(shipping)



Connection Diagram



Three-phase Voltage and Current



Ordering Information

KDO-100

Technical Data

Measurement & Accuracy

Current	≤ 0.5% of reading + 1digit
Voltage	≥ 0.5% of reading + 1digit

Inputs

Auxiliary Supply	AC 90~260V (50 or 60Hz)
Voltage (Direct or Secondary)	AC 500V
Current (Direct or Secondary)	AC 5A
Voltage Ratio	AC 220/110V, 380/110, 380√3/190√3, 440/110
Current Ratio	Max. 6000A / 5A

Display

Type	FND, Red color
Number of Line	3Digits X 2Lines
Height of Character	14 mm

Environmental Condition

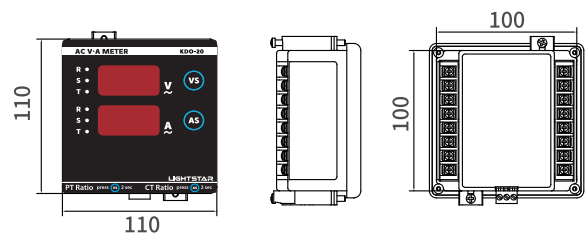
Operating temperature	0~55°C
Storage temperature	-20~85°C
Relative humidity	≤80%
Ingress protection rating	IP54(front), IP20(case)

Connections

Circuit	Three phase 3wire Three phase 4wire	CT, PT, Aux Terminal	M4 Bolt
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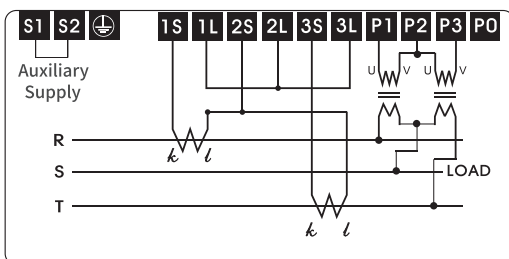
Dimensions

Panel Cutout(mm)	101(W) x 101(H)
Product(mm)	110(W) x 110(H) x 60(D)
Weight(g)	300g(unpacked), 410g(shipping)

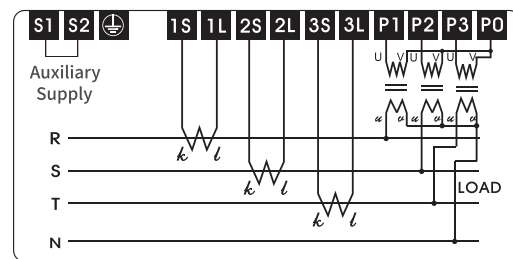


Connection Diagram

3Φ3W



3Φ4W



KDU-100 measure Voltage and Frequency.
When the set value is exceeded, alarm occurs.



Ordering Information

KDU-100

Technical Data

Measurement & Accuracy

Current	≤ 0.5% of reading + 1digit
Frequency	≤ 0.1% of reading + 1digit

Inputs

Auxiliary Supply	AC 90~260V (50 or 60Hz)
Voltage (Direct or Secondary)	AC 100 ~ 500V
Frequency	45 ~ 65Hz
Upper / Lower limit Voltage	500 ~ 100V
Upper / Lower limit Frequency	61~39Hz
Delay time	1.0~3.0 sec

Display

Type	FND, Red color
Number of Line	3Digits X 2Lines
Height of Character	14 mm

Environmental Condition

Operating temperature	0~55°C
Storage temperature	-20~85°C
Relative humidity	≤80%
Ingress protection rating	IP54(front), IP20(case)

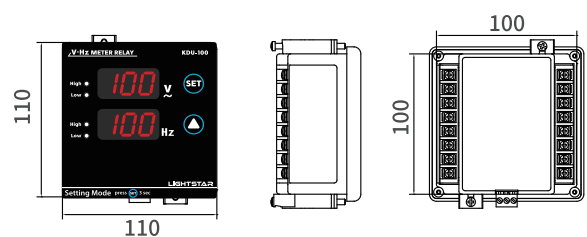
Output

Connections

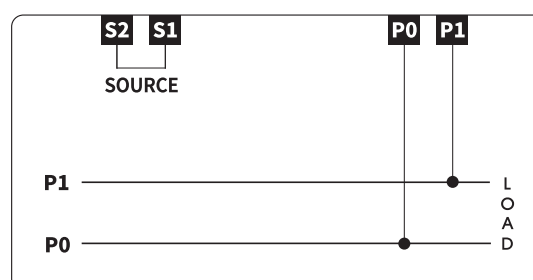
Circuit	SINGLE PHASE	CT, PT, Aux Terminal	M4 Bolt
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Dimensions

Panel Cutout(mm)	101(W) x 101(H)
Product(mm)	110(W) x 110(H) x 60(D)
Weight(g)	270g(unpacked), 390g(shipping)

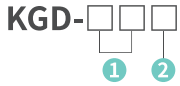


Connection Diagram





Ordering Information



① Number of circuit	② Communication
08 8 circuit	C RS-485 Modbus
12 12 circuit	N None
16 16 circuit	
20 20 circuit	

Technical Data

Inputs

Auxiliary Supply	AC 110~220V (50 or 60Hz), DC 110V
ZCT	100mV / 200mA

Display

Type	FND, Red color
Number of Line	5 Digit
Height of Character	14mm

Outputs

Digital Output	AC 250V / 1A 0.3 sec, DC 24V / 2A
Buzzer	70dB

Communication

RS-485 Modbus RTU	2 Wire, 0~255 Address 9600bps
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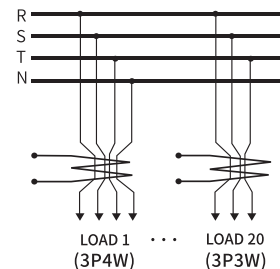
Environmental Condition

Operating temperature	-10~55°C	Withstand Voltage	2.2kV - 1min
Storage temperature	-20~85°C	Surge impulse Voltage	1.2μs, 50μs, 6kV
Relative humidity	45~80%	Burst Immunity Test	Level 4 (IEC 61000-4-4)
Insuration resistance	5MΩ		

Connections

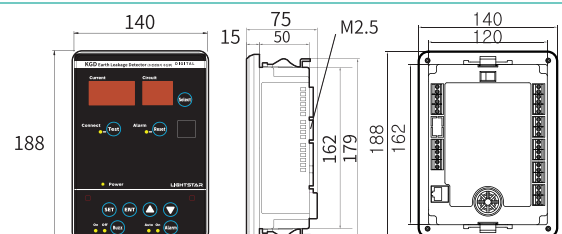
Circuit	Three phase 3wire Three phase 4wire
CT, PT, Aux Terminal	M4 Bolt
RS-485 Terminal	Solid : 0.2~4.0mm ² (30~12AWG) Stranded : 0.2~2.5mm ² (30~12AWG)

Connection Diagram



Dimensions

Panel Cutout(mm)	122(W) x 163(H)
Product(mm)	140(W) x 188(H) x 75(D)
Weight(g)	510g(unpacked), 710g(shipping)





Ordering Information

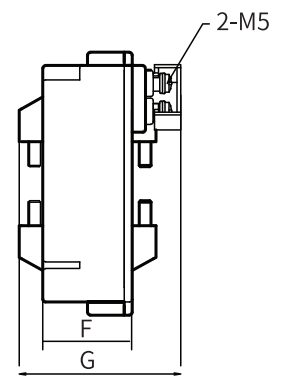
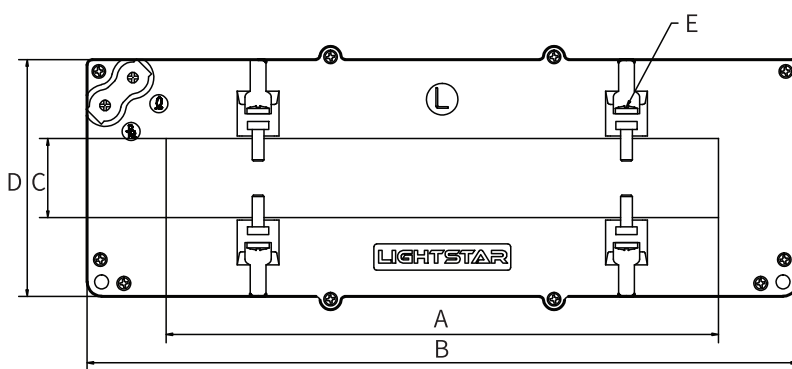
KGB-□

①	Type	CB AF	Rated Current	Primary	Secondary
①	KGB-05	400AF 3P3W, 3P4W	Max. 400A	200mA	100mV
	KGB-07	400AF 3P3W 600AF 3P4W	Max. 600A	200mA	100mV
①	KGB-11	600AF 3P4W	Max. 1000A	200mA	100mV
		800AF 3P3W, 3P4W			
		1000AF 3P3W, 3P4W			

Technical Data

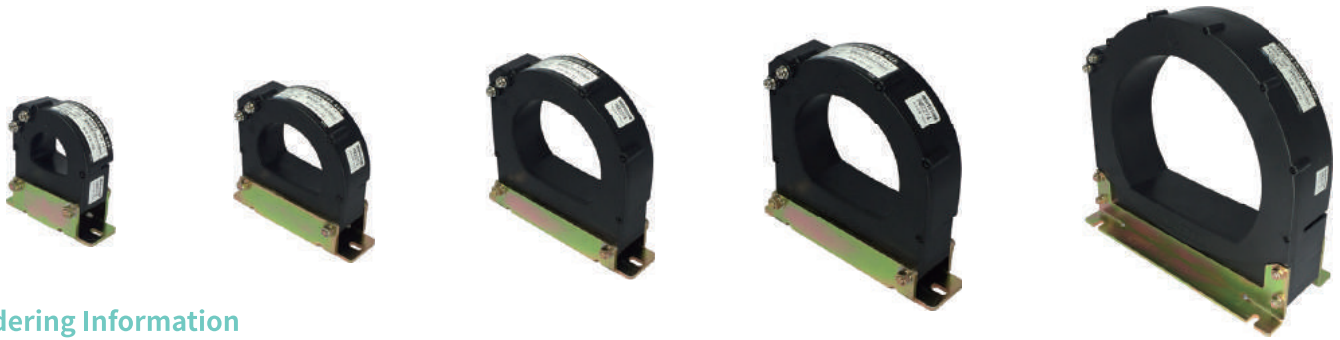
Insulation Voltage	Max.600V	Frequency	50/60Hz
Operating temperature	-10~+50°C	Weight	KGB-04 (200g), KGB-06 (880g), KGB-10 (1400g)

Dimensions



Unit : mm

TYPE	A	B	C	D	E	F	G
KGB-05	163	225	30	90	8-M5X30mm	34	61
KBG-07	210	270	30	90	8-M5X30mm	34	61
KBF-11	260	330	30	100	16-M5X30mm	38	65



Ordering Information

KGC-□

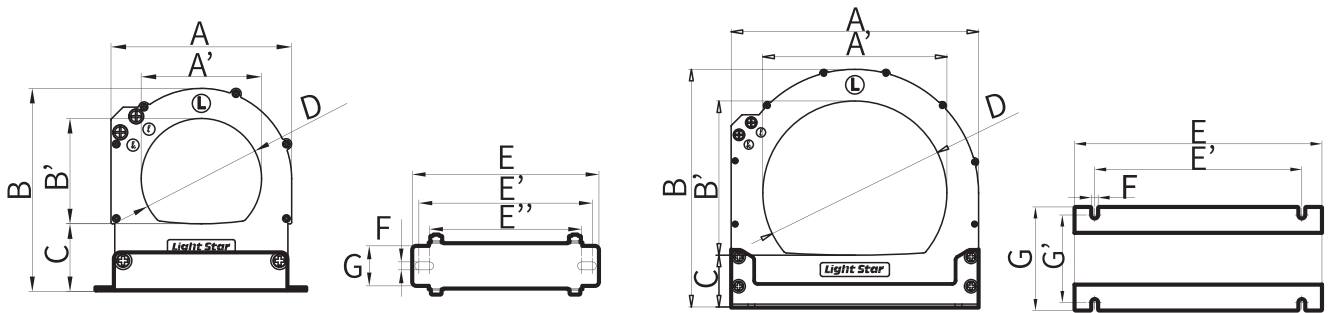
①

Type	CB AF	Rated Current	Primary	Secondary
KGC-30	100AF min	Max. 100A	200mA	100mV
KGC-50	225AF	Max. 250A	200mA	100mV
KGC-75	400AF	Max. 400A	200mA	100mV
KGC-100	600AF	Max. 600A	200mA	100mV
KGC-150	1000AF	Max. 1000A	200mA	100mV

Technical Data

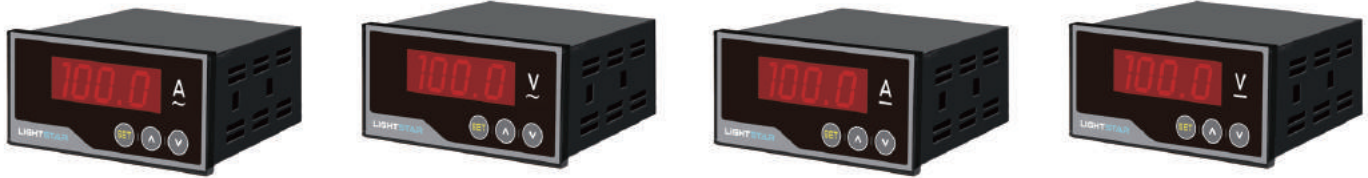
Insulation Voltage	Max.600V	Weight	KGC-30 (150g), KGC-50 (200g), KGC-75 (300g), KGC-100(1000g), KGC-150(1500g)
Operating temperature	-10 ~ +50°C		
Frequency	50/60Hz		

Dimensions



Unit : mm

TYPE	A	A'	B	B'	C	D	E	E'	E''	F	G	G'
KGC-30	72	37	87.5	29	표준 45 or 25	ø37	90	80	70	6	30	-
KGC-50	100	62	102.5	48	표준 45 or 25	ø62	120	110	100	6	30	-
KGC-75	120	80	135	70	표준 45 or 30	ø80	140	130	114	6	30	-
KGC-100	150	113	155	90	표준 45 or 27	ø113	170	160	150	6	40	-
KGC-150	215	160	210	134	표준 45 or 34	ø160	215	180	-	6	90	76



Ordering Information



- ① Measurement Value
- A AC Ammeter
- B AC Voltmeter
- C DC Ammeter
- D AC Voltmeter

Technical Data

Measurement & Accuracy

Current, Voltage ≤0.5% of reading + 2digit

Display

Type FND, Red color
Number of Line 4Digits X 1Line
Height of Character 14.2mm

Auxiliary Supply

AC 90~260V (50 or 60Hz), DC110V

Input

KDP-A CT Secondary Max 6000/5A
KDP-B Max AC 500V or PT Secondary
KDP-C DC 50mV or 60mV or 200mV
KDP-D Max DC 500V

Environmental Condition

Operating temperature 0~55°C
Storage temperature -20~85°C
Relative humidity ≤80%
Ingress protection rating IP54(front), IP20(case)

Connections

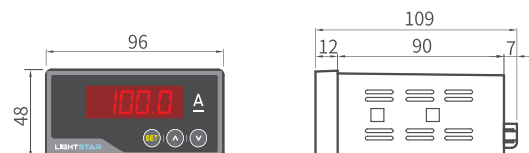
Input, Aux Terminal M4 Bolt

Certificates

CE

Dimensions

Panel Cutout(mm) 91(W) x 45(H)
Product(mm) 96(W) x 48(H) x 109(D)
Weight(g) 180g(unpacked), 280g(shipping)





Ordering Information

KDA-3P

Technical Data

Measurement & Accuracy

Current $\leq 0.5\%$ of reading + 2digit

Display

Type FND, Red color
Number of Line 4Digits X 1Line
Height of Character 14.2mm

Inputs

Auxiliary Supply AC 90~260V (50 or 60Hz), DC110V
Current (Secondary of CT) AC 0~6A
Current Ratio Max. 154KV(3P3W),
22.9KV(3P4W) / 110V

Environmental Condition

Operating temperature 0~55°C
Storage temperature -20~85°C
Relative humidity $\leq 80\%$
Ingress protection rating IP54(front), IP20(case)

Connections

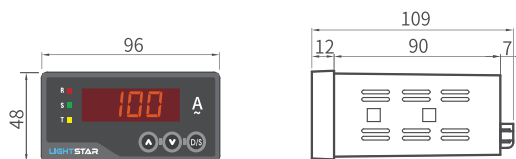
Circuit Three phase 3wire
Three phase 4wire
PT, Aux Terminal M4 Bolt

Certificates

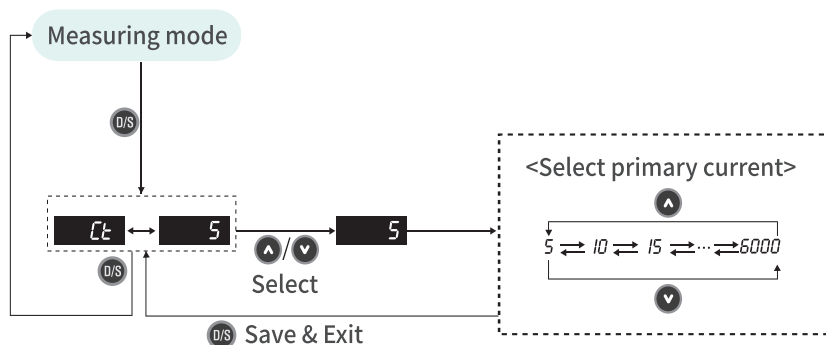
CE

Dimensions

Panel Cutout(mm) 91(W) x 45(H)
Product(mm) 96(W) x 48(H) x 109(D)
Weight(g) 250g(unpacked), 350g(shipping)



Setup method





Ordering Information

KDB-3P

Technical Data

Measurement & Accuracy

Voltage $\leq 0.5\%$ of reading + 2digit

Inputs

Auxiliary Supply AC 90~260V (50 or 60Hz), DC110V
 Voltage (Direct or Secondary) AC 0~500V
 Voltage Ratio Max. 154KV(3P3W),
 22.9KV(3P4W) / 110V

Display

Type FND, Red color
 Number of Line 4Digits X 1Line
 Height of Character 14.2mm

Environmental Condition

Operating temperature 0~55°C
 Storage temperature -20~85°C
 Relative humidity $\leq 80\%$
 Ingress protection rating IP54(front), IP20(case)

Connections

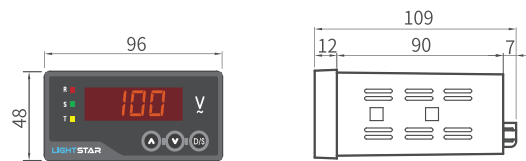
Circuit Three phase 3wire
 Three phase 4wire
 PT, Aux Terminal M4 Bolt

Certificates

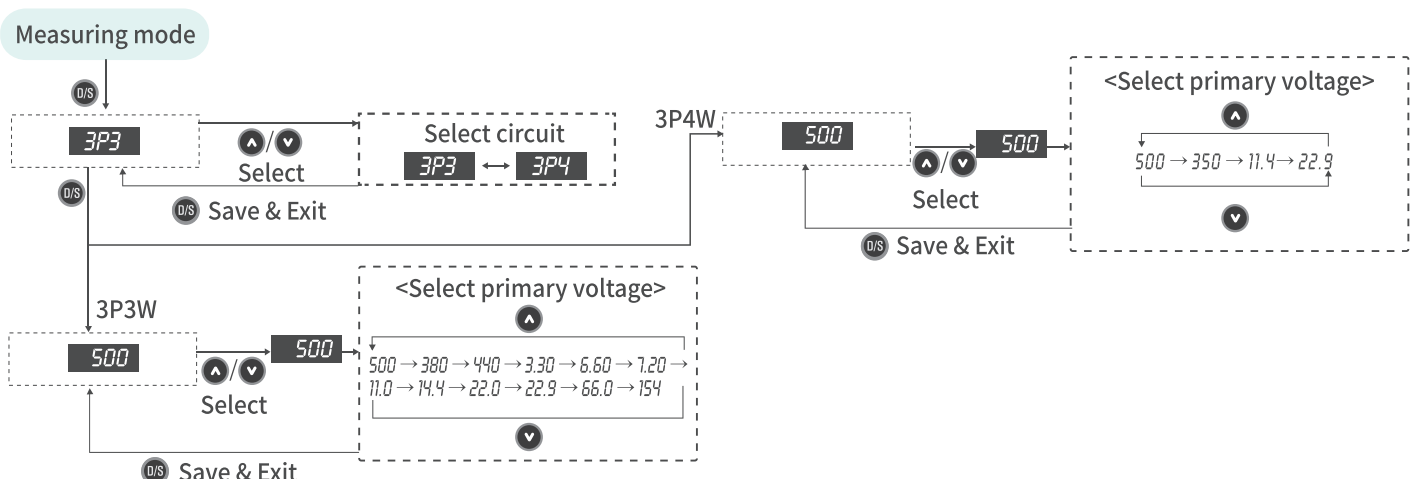
CE

Dimensions

Panel Cutout(mm) 91(W) x 45(H)
 Product(mm) 96(W) x 48(H) x 109(D)
 Weight(g) 250g(unpacked), 350g(shipping)

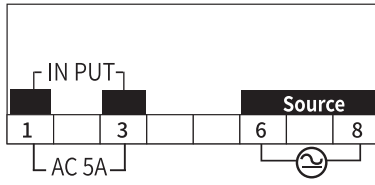


Setup method

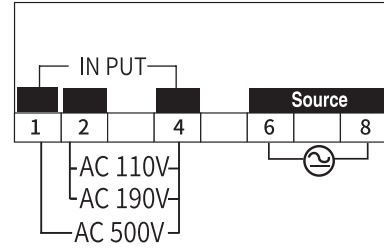


KDP-A/B/C/D

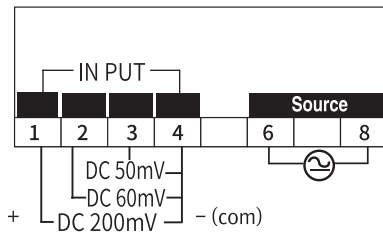
KDP-A(AC A)



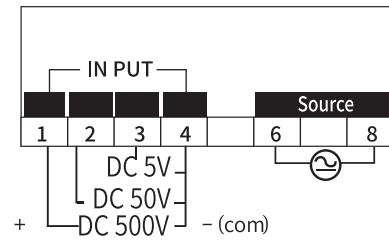
KDP-B(AC V)



KDP-C(DC A)

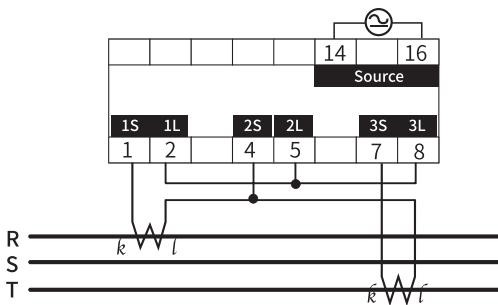


KDP-D(DC V)

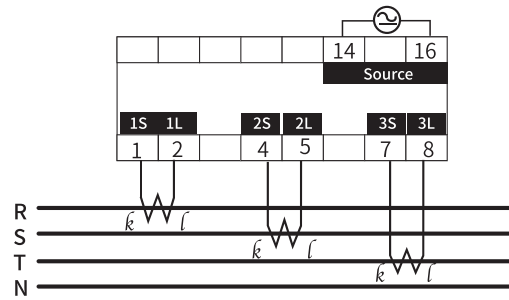


KDA-3P

3P3W

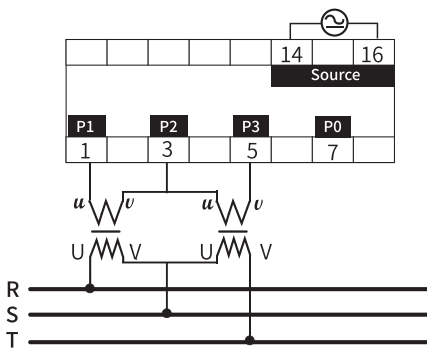


3P4W

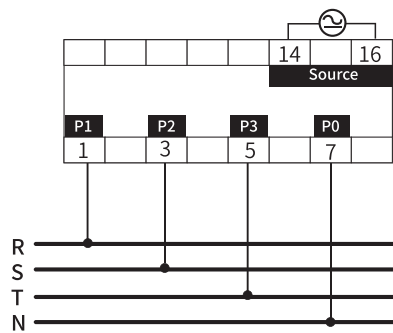


KDB-3P

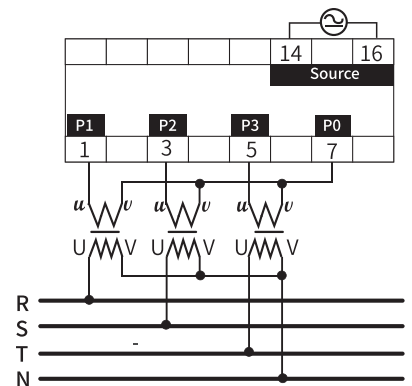
3P3W



3P4W



3P4W(PT)





Ordering Information



- ① Input
Wire, Input PT ratio, Input CT ratio

Technical Data

Measurement & Accuracy

Active power	≤0.5% of reading + 2digit
Active energy	≤1.0% of reading + 2digit

Display

Type	FND, Red color
Number of Line	6 Digits X 1Line
Height of Character	10 mm

Inputs

Auxiliary Supply	AC 90~260V (50 or 60Hz), DC110V	Voltage Ratio	Max. 154kV (3P3W), 22.9kV (3P4W) / 110V
Voltage (Direct or Secondary)	AC 40~500V	Current Ratio	Max. 6000A / 5A
Current (Direct or Secondary)	AC 0.1~6.0A		

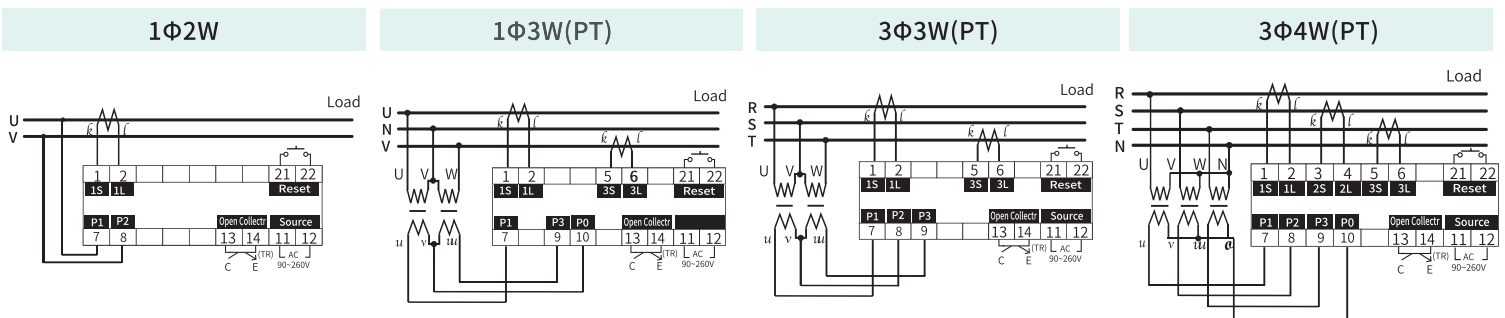
Environmental Condition

Operating temperature	0~55°C	Relative humidity	≤80%
Storage temperature	-20~85°C	Ingress protection rating	IP54(front), IP20(case)

Connections

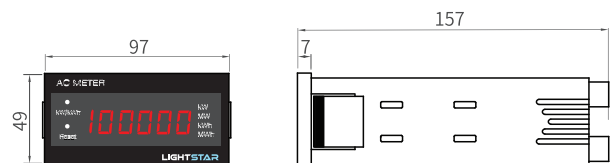
Circuit	Three phase 3wire Three phase 4wire	PT, Aux Terminal	M4 Bolt
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Connection Diagram



Dimensions

Panel Cutout(mm)	92(W) x 45(H)
Product(mm)	97(W) x 49(H) x 157(D)
Weight(g)	450g(unpacked), 650g(shipping)





Ordering Information

KDP-□R
①

- ① Measurement Value
- A AC Ammeter 5A
- B AC Voltmeter 110V / 190V / 500V
- C DC Ammeter 50mV / 60 mV / 200mV
- D AC Voltmeter 5V / 50V / 500V

Technical Data

Measurement & Accuracy

Current, Voltage ≤0.5% of reading + 2digit

Auxiliary Supply

AC 90~260V (50 or 60Hz), DC110V

Environmental Condition

Operating temperature 0~55°C
 Storage temperature -20~85°C
 Relative humidity ≤80%
 Ingress protection rating IP54(front), IP20(case)

Display

Type FND, Red color
 Number of Line 4Digits X 1Line
 Height of Character 14.2mm

Input

KDP-AR CT Secondary Max 6000/5A
 KDP-BR Max AC 500V or PT Secondary
 KDP-CR DC 50mV or 60mV or 200mV
 KDP-DR Max DC 500V

Connections

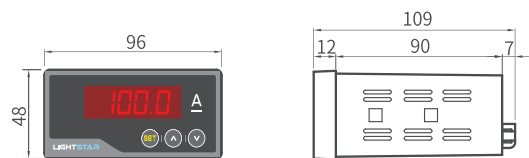
Input, Aux Terminal M4 Bolt

Certificates

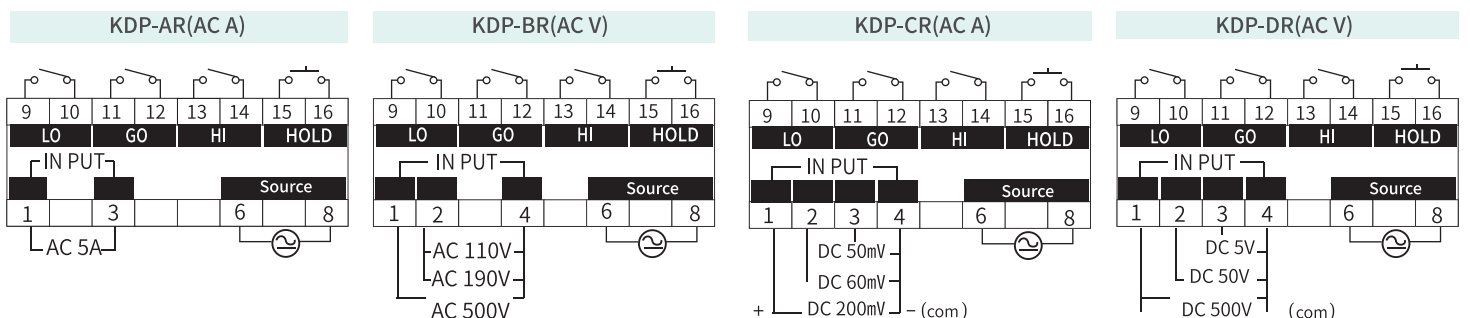
CE

Dimensions

Panel Cutout(mm) 91(W) x 45(H)
 Product(mm) 96(W) x 48(H) x 109(D)
 Weight(g) 250g(unpacked), 350g(shipping)

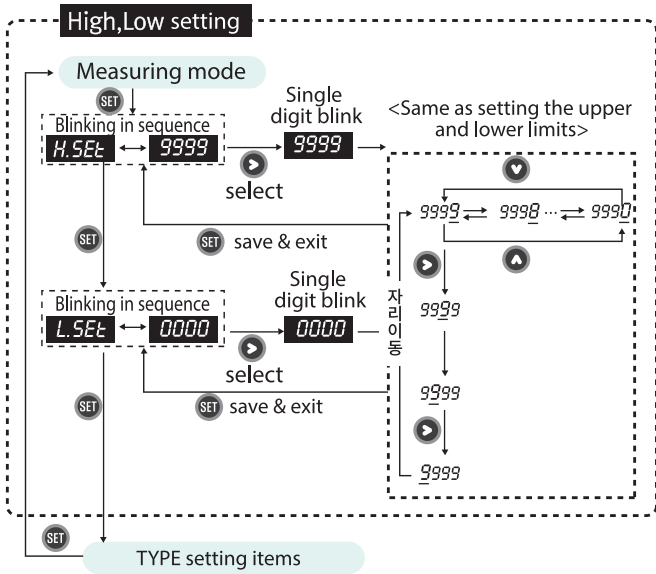


Connection Diagram

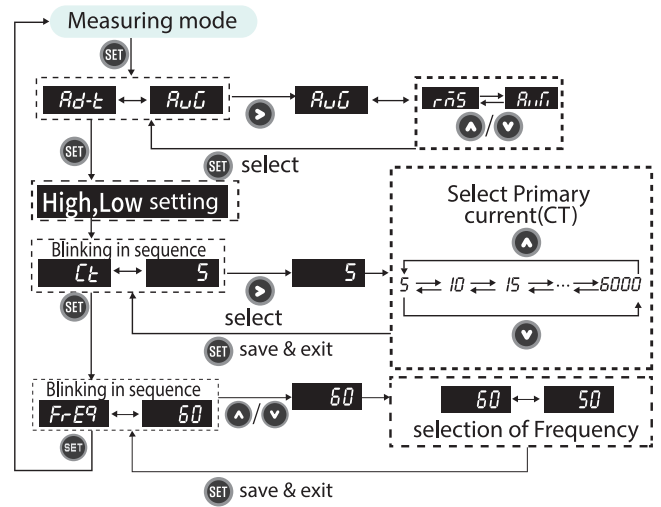


Setup method

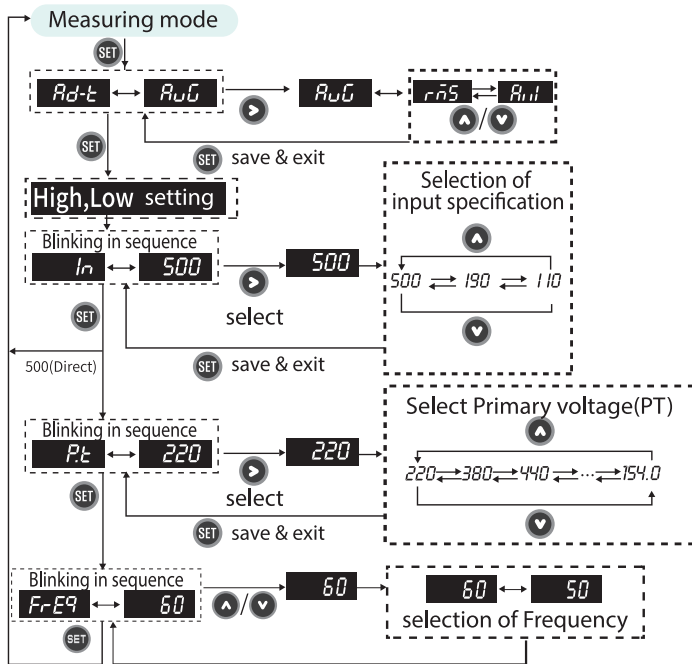
KDP-□R (Common: High, Low setting)



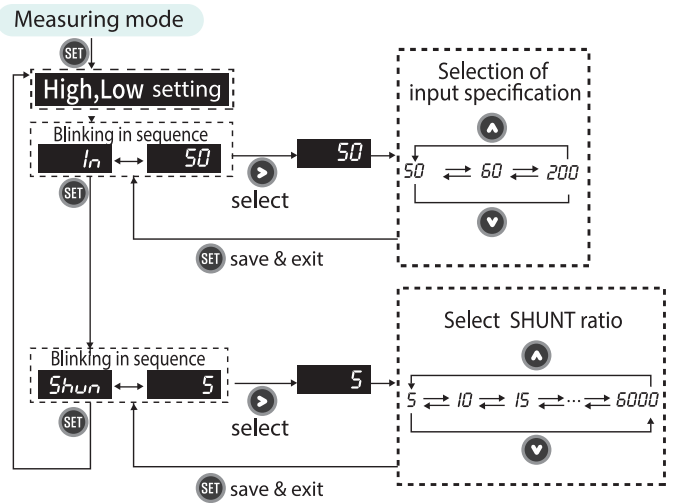
KDP -AR (AC A)



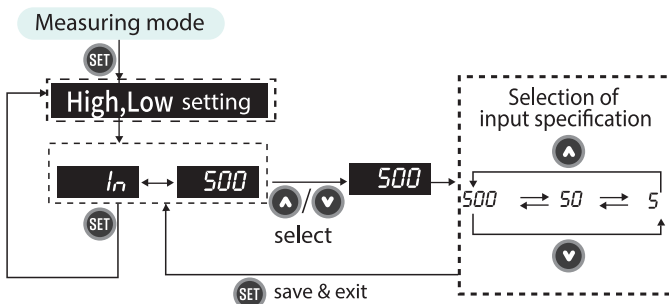
KDP -BR (AC V)

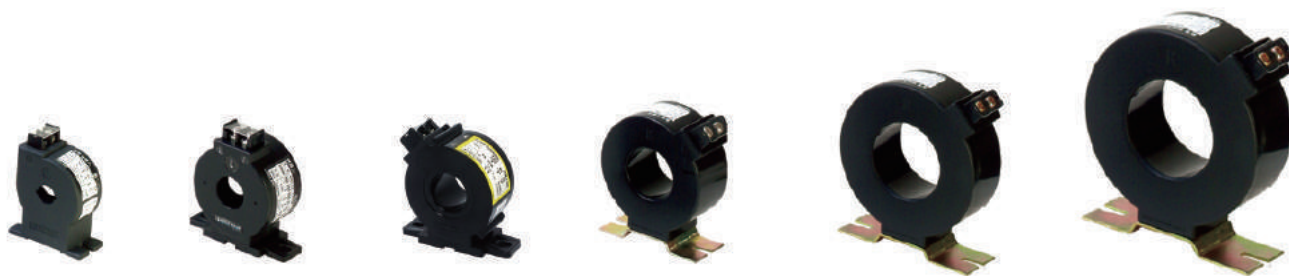


KDP -CR (DC A)



KDP -DR (DC V)





Ordering Information

KBJ-□□, □Class, □VA, □/□A

① ② ③ ④ ⑤

① METER Type	② Class	③ VA	④ Primary	⑤ Secondary
KBJ-15	3.0	2.5	40	5 or 1 A
		5	50~75	
	1.0	5	100~150	
KBJ-23	3.0	2.5	40	5 or 1 A
		5	50~75	
	1.0	5	100~2000	
KBJ-25	1.0	5	5~300	5 or 1 A
		15	250~300	
	KBJ-03	1.0	5	100~150
15			200~350	
40		400~600		
KBJ-04	1.0	5	100~150	5 or 1 A
		15	200~350	
	40	400~2000		
KBJ-06	1.0	5	150~250	5 or 1 A
		15	300~400	
	40	500~3000		

① RELAY Type	② Class	③ VA	④ Primary	⑤ Secondary
KBJ-15	-	-	-	-
KBJ-23	-	-	-	-
KBJ-25	-	-	-	-
KBJ-03	5P10	2.5	250~450	5 or 1 A
		5	500~600	
KBJ-04	5P10	2.5	200~250	5 or 1 A
		5	300~800	
		15	1000~2000	
KBJ-06	5P10	5	400~1000	5 or 1 A
		15	1200~3000	

Technical Data

Insulation Voltage	1.15kV
Withstanding Voltage	4.0kV - 1min
Frequency	50/60 Hz
Overcurrent Strength	40
Standard	IEC 60044-1



Dimensions

Type	Dimensions(mm)			Weight/ Certificates
KBJ-15				400g / CE
KBJ-23				320g / CE
KBJ-25				320g / CE
KBJ-03				550g / CE
KBJ-04				800g
KBJ-06				1100g



Ordering Information

KBM-□□, □Class, □VA, □/□A

①	②	③	④	⑤
METER Type	Class	VA	Primary	Secondary
KBM-25	1.0	5	100-150	5 or 1 A
		15	200-300	
KBM-03	1.0	5	120-150	5 or 1 A
		15	200-350	
		40	400-600	
KBM-05	1.0	5	200-300	5 or 1 A
		15	400-800	
		40	1000-2000	
KBM-08	1.0	5	100-250	5 or 1 A
		15	300-400	
		40	500-2000	
KBM-10	1.0	5	200-300	5 or 1 A
		15	400-500	
		40	600-3200	
KBM-12	1.0	5	300-400	5 or 1 A
		15	500-800	
		40	1000-3200	
KBM-14	1.0	15	400-500	5 or 1 A
		40	600-6000	
KBM-18	1.0	15	500-600	5 or 1 A
		40	700-7500	
KBM-21	1.0	15	500-750	5 or 1 A
		40	800-8000	

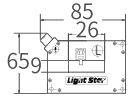
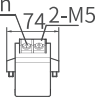

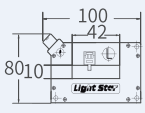
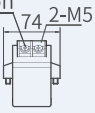
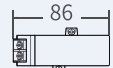
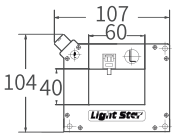
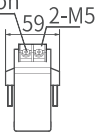
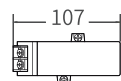
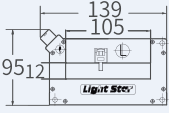
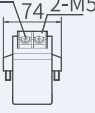
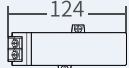
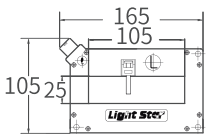
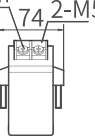
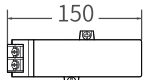
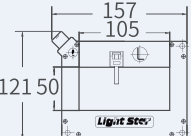
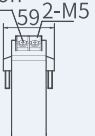

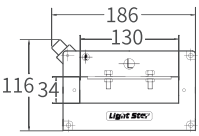
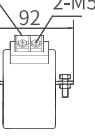

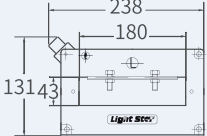
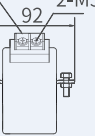

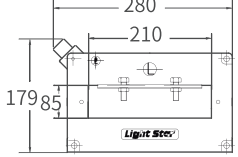
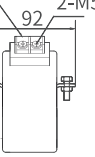
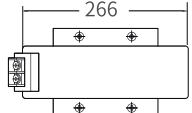
①	②	③	④	⑤
RELAY Type	Class	VA	Primary	Secondary
KBM-25	5P10	5	350~400	5 or 1 A
KBM-03	5P10	5	400~600	5 or 1 A
KBM-05	5P10	5	1000~2000	5 or 1 A
KBM-08	5P10	5	400~800	5 or 1 A
		15	1000~2000	
KBM-10	5P20	5	700~800	5 or 1 A
		5	350~600	
		15	1000~2000	
KBM-12	5P10	40	3000~4000	5 or 1 A
		5	700~800	
KBM-14	5P20	15	2500~4000	5 or 1 A
		15	3000~4000	
KBM-18	5P10	15	1200~3000	5 or 1 A
		15	1000~2500	
		40	3000~4000	
KBM-21	5P20	15	3000~4000	5 or 1 A
		15	1200~2500	
KBM-21	5P10	40	3000~5000	5 or 1 A
		15	3000~5000	
		40	6000~8000	

Technical Data

Insulation Voltage	1.15kV
Withstanding Voltage	4.0kV - 1min
Frequency	50/60 Hz
Overcurrent Strength	40
Standard	IEC 60044-1



Dimensions

Type	Dimensions(mm)	Weight/ Certificates
KBM-25	  	500g / CE
KBM-03	  	700g / CE
KBM-05	  	800g / CE
KBM-08	  	1000g / CE
KBM-10	  	1300g
KBM-12	  	840g / CE
KBM-14	  	2000g
KBM-18	  	2700g
KBM-21	  	3200g



Ordering Information

KBD-□□, □Class, □VA, □/□A

① ② ③ ④ ⑤

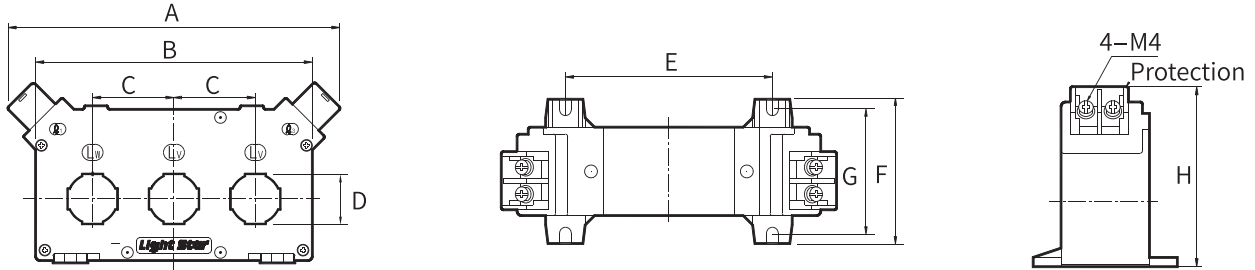
METER	①	②	③	④	⑤	RELAY	①	②	③	④	⑤		
	Type	Class	VA	Primary	Secondary		Weight	Type	Class	VA	Primary	Secondary	Weight
3P3W (2CT)	KBD-12	3.0	2.5	50~80	5A or 1A	370g	3P3W (2CT)	KBD-12	5P5	1.5	150~200	5A or 1A	370g
		1.0	5	100~120				5P5	1.5	40~60	KBD-12S	5P10	1.5
	KBD-12S	3.0	2.5	40~60	5A or 1A	390g		KBD-22	5P5	1.5		100~300	5A or 1A
		1.0	5	75~80					5P5	1.5	150~250	KBD-42	5P10
	KBD-22	3.0	2.5	60	5A or 1A	550g		KBD-62	5P10	2.5	250~400		5A or 1A
		1.0	5	75								5	
	KBD-42	3.0	5	100~150	5A or 1A	630g		KBD-13	5P5	1.5	150~200	5A or 1A	410g
		1.0	5	200~250					5P5	1.5	40~60	KBD-13S	5P10
KBD-62	3.0	5	100~150	5A or 1A	720g	3P4W (3CT)	KBD-21	5P5	1.5	100~200	5A or 1A		820g
	1.0	15	300~500									KBD-23	
KBD-13	3.0	2.5	50~100	5A or 1A	410g	KBD-43	5P10	1.5	300~400	5A or 1A	690g		
	1.0	5	120									5P10	1.5
KBD-13S	3.0	2.5	40~60	5A or 1A	520g	KBD-63	5P10	2.5	250~400	5A or 1A	1360g		
	1.0	5	75~80									5	500~1000
KBD-21	3.0	2.5	60	5A or 1A	820g	KBD-43	5P10	2.5	250~400	5A or 1A	690g		
	1.0	5	75									5P10	1.5
KBD-23	3.0	2.5	75	5A or 1A	460g	KBD-63	5P10	2.5	250~400	5A or 1A	1360g		
	1.0	5	100~120									5	500~1000
KBD-43	3.0	5	100~150	5A or 1A	690g	KBD-63	5P10	2.5	250~400	5A or 1A	1360g		
	1.0	5	200~300									5	500~1000
KBD-63	3.0	5	100~150	5A or 1A	690g	KBD-63	5P10	2.5	250~400	5A or 1A	1360g		
	1.0	15	400~500									5	500~1000
KBD-63	3.0	5	200~250	5A or 1A	1360g	KBD-63	5P10	2.5	250~400	5A or 1A	1360g		
	1.0	15	300~1200									5	500~1000



Technical Data

Insulation Voltage	1.15kV	Frequency	50/60 Hz	Standard	IEC 60044-1
Withstanding Voltage	4.0kV - 1min	Overcurrent Strength	40		

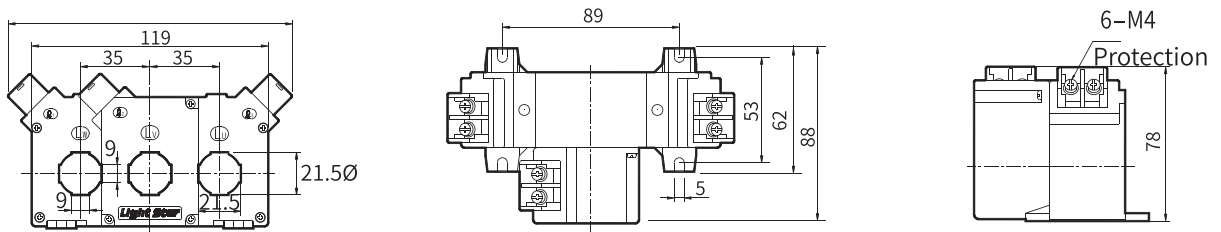
Dimensions



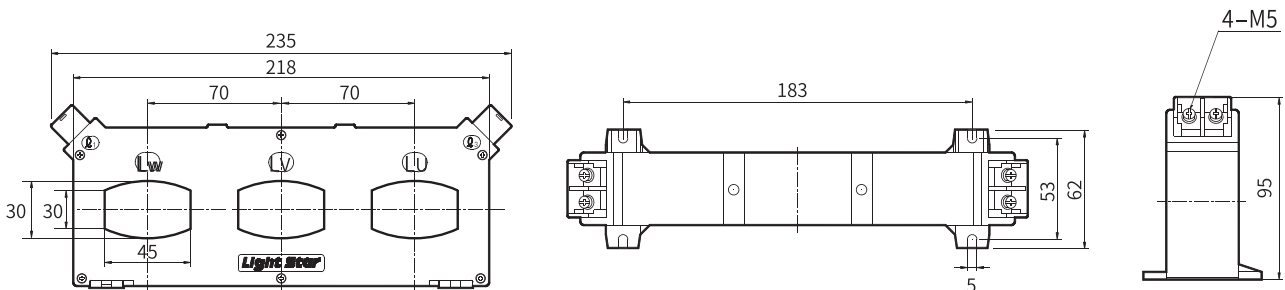
Unit : mm

Type	A	B	C	D	E	F	G	H
KBD-12/13	119	99	30	14	63	62	55	59
KBD-12S/13S	119	99	30	14	75	63	61	59
KBD-22/23	136	119	35	21.5	62	89	53	78
KBD-42/43	170	149	44	27	63	117	53	93

KBD-21



KBD-62/63





Ordering Information

KBF-□□, □Class, □VA, □/□A
 ① ② ③ ④ ⑤

METER	① Type	② Class	③ VA	④ Primary	⑤ Secondary	Weight	RELAY	① Type	② Class	③ VA	④ Primary	⑤ Secondary	Weight
3P3W (2CT)	KBF-12	3.0	2.5	50~75	5A or 1A	310g	3P3W (2CT)	KBF-12	5P5	1.5	150~200	5A or 1A	310g
		1.0	5	100	5A or 1A	310g		KBF-12S	5P5	1.5	100~150	5A or 1A	380g
	KBF-12S	3.0	2.5	50~75	5A or 1A	380g		KBF-22	5P10	1.5	200	5A or 1A	380g
		1.0	5	100~150	5A or 1A	380g			KBF-42	5P5	1.5	150~350	5A or 1A
	KBF-22	3.0	5	100~150	5A or 1A	310g		KBF-42		5P10	1.5	400~500	5A or 1A
		1.0	5	200~300	5A or 1A	310g			KBF-62	5P10	1.5	300~400	5A or 1A
KBF-42	1.0	5	200~400	5A or 1A	410g	KBF-62	5P10	1.5		250~300	5A or 1A	410g	
	1.0	15	500	5A or 1A	410g		KBF-62	5P10	2.0	350~500	5A or 1A	770g	
KBF-62	1.0	5	300	5A or 1A	770g	KBF-62		5P10	2.5	600~1000	5A or 1A	770g	
	1.0	15	400~1200	5A or 1A	770g		3P4W (3CT)	KBF-13	5P5	1.5	150~200	5A or 1A	410g
KBF-13	3.0	2.5	50~100	5A or 1A	410g	KBF-13S		5P5	1.5	100~150	5A or 1A	510g	
	1.0	5	120	5A or 1A	410g			KBF-23	5P10	1.5	200	5A or 1A	510g
KBF-13S	3.0	2.5	50~75	5A or 1A	510g	KBF-23			5P5	1.5	150~250	5A or 1A	390g
	1.0	5	80	5A or 1A	510g			KBF-43	5P5	1.5	150~350	5A or 1A	570g
KBF-23	3.0	2.5	100	5A or 1A	390g	KBF-43			5P10	1.5	400~500	5A or 1A	570g
	1.0	5	120~150	5A or 1A	390g		KBF-63	5P10	1.5	250~300	5A or 1A	1020g	
KBF-43	1.0	5	200~400	5A or 1A	570g	KBF-63		5P10	2.0	350~500	5A or 1A	1020g	
	1.0	15	500	5A or 1A	570g		KBF-63	5P10	2.5	600~1000	5A or 1A	1020g	
KBF-63	1.0	5	300	5A or 1A	1020g	KBF-63		5P10	2.5	600~1000	5A or 1A	1020g	
	1.0	15	400~1200	5A or 1A	1020g								

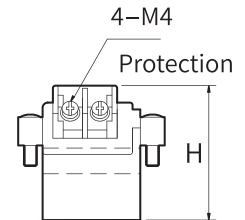
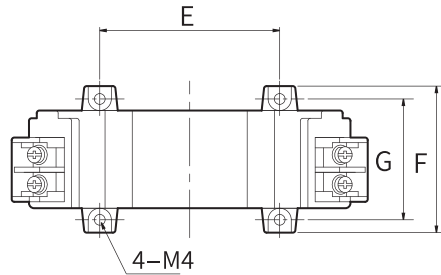
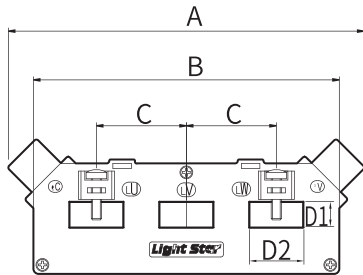
Technical Data

Insulation Voltage	1.15kV	Frequency	50/60 Hz	Standard	IEC 60044-1
Withstanding Voltage	4.0kV - 1min	Overcurrent Strength	40		



Dimensions

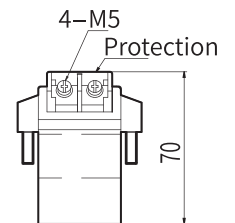
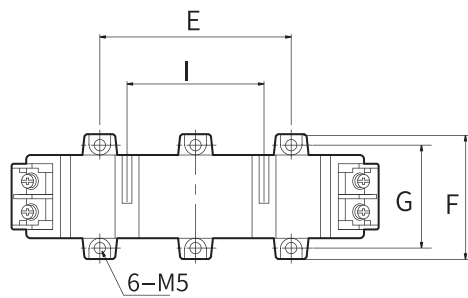
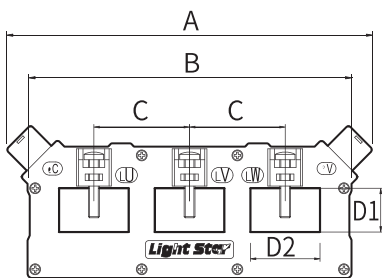
KBF-12/13,12S/13S,22/23



Unit : mm

Type	A	B	C	D1 X D2	E	F	G	H
KBF-12/13	122	102	30	7 X 16	60	59	49	52
KBF-12S/13S	122	102	30	7 X 16	60	69	59	52
KBF-22/23	139	119	35	10 X 21	70	57	47	25

KBF-42/43,62/63

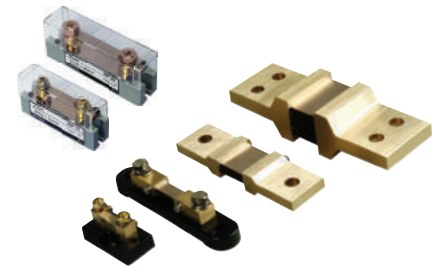


Unit : mm

Type	A	B	C	D1 X D2	E	F	G	H
KBF-42/43	168	149	44	20 X 32	87	57	47	70
KBF-62/63	237	218	70	25 X 46	140	57	47	85



Shunt is used to measure DC current



Ordering Information

KBP-□	①	Current
1	1	1 ~ 75A
2	2	100 ~ 300A
1N	1N	400 ~ 1000A
2N	2N	1500A~2000A
3	3	2500 ~ 3000A
4	4	1 ~ 75A
KBP-5		60 ~ 15A

Technical Data

Type	Primary(A)	Weight
KBP-1	1~75	100g
KBP-2	100~300	300g
KBP-1N	1~50	50g
KBP-2N	60~150	90g
	400	300g
	500	600g
KBP-3	600	600g
	750	1800g
	1000	2100g
KBP-4	1500	2500g
	2000	3500g
	2500	5800g
KBP-5	3000	7000g

Class	1.0
Withstanding Voltage	2kV - 1min
Voltage Drop	50.0mV or 60.0mV
Insulation resistance	10MΩ

Dementions

Type	Dementions(mm)
KBP-1	
KBP-2	
KBP-1N	
KBP-2N	
KBP-3	<p>please ask the demention when you order</p>
KBP-4	<p>please ask the demention when you order</p>
KBP-5	<p>please ask the demention when you order</p>



P.T is instrument transformer used for the transformation of voltage from a higher value to the lower value.
P.T step down the voltage to a safe limit value which can easily measured by the ordinary low voltage instrument like a voltmeter, wattmeter and watt-hour meters.



Ordering Information

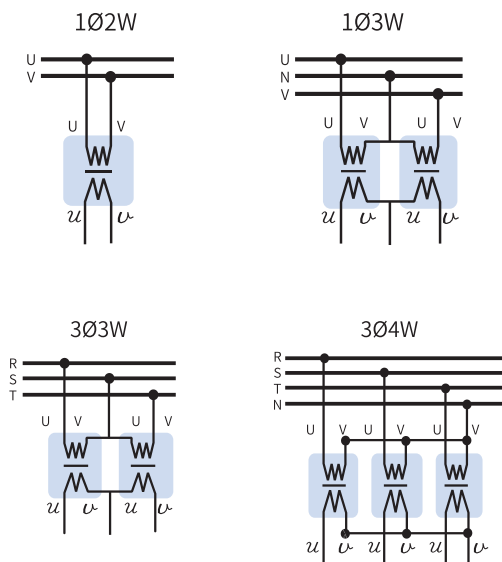
KBT-□□
① ②

①			②	
Type	Primary	Secondary	Type	VA
1	220V	110V	1	15VA
2	380V	110V	2	50VA
3	440V	110V	3	100VA
4	460V	115V	0	special order
0	special order			

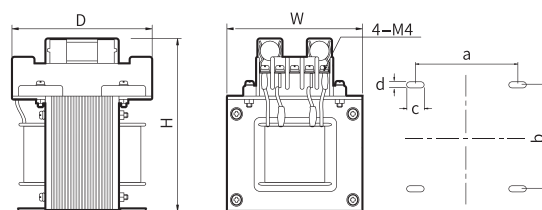
Technical Data

Class	1.0	Constant rating	1.1 times of rated voltage
Withstanding Voltage	3kV - 1min	Momentary rating	30sec at 1.9 times of rated voltage
Frequency	60 Hz(basic), 50 Hz(Order)	Induced Voltage	123Hz, 2A
Voltage Ratio	Refer to ordering Infomation	Material of terminal block	Frame retarding polyester

Connection Diagram



Dimensions



VA Size	15VA	50VA	100VA	200VA
H	122	138	145	164
W	90	111	120	137
D	109	109	109	109
a	68±1	68±1	93±1	88
b	74±1	93±1	102±1	120
c	15	10	18	18
d	5	5	5	5
Weight	2.5kg	3.5kg	5kg	7.8kg



Ordering Information

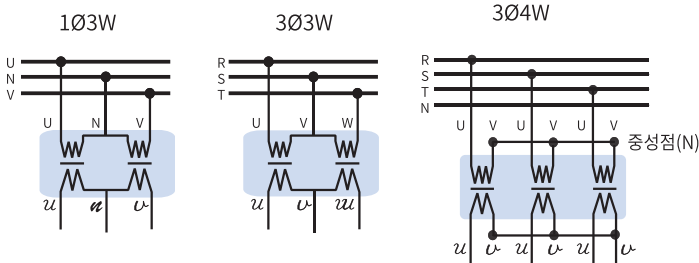
KBO-□□
① ②

①		②	
Type	Circuit	Type	Primary / Secondary
1	1P3W	1	220V / 110V
		2	380V / 110V
2	3P3W	3	380V / 220V
		4	440V / 110V
		5	440V / 220V
		0	special order
		1	380V√3V / 190V√3V
3	3P4W	0	special order

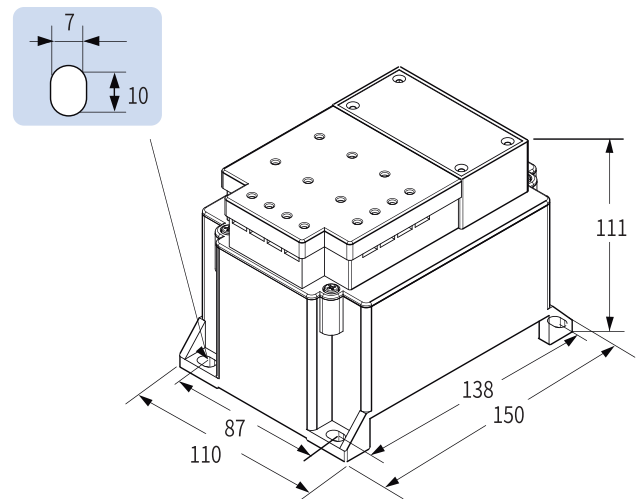
Technical Data

Class	1.0	VA	3P4W, 50VA(17VAX3)/3P3W, 50VA(25VA X 2)
Withstanding Voltage	3kV - 1min	Constant rating	1.1 times of rated voltage
Frequency	50 Hz(basic), 60 Hz(Order)	Momentary rating	30sec at 1.9 times of rated voltage
Voltage Ratio	Refer to ordering Infomation	Induced Voltage	123Hz, 2A
		Material of case	Flame retarding polyester

Dimensions



Dimensions

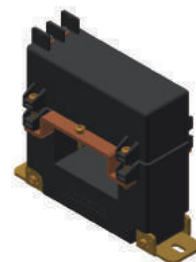




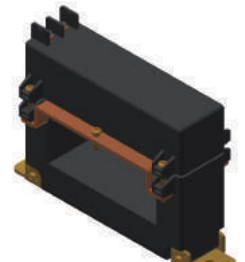
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<KBC-06S>



<KBC-05>



<KBC-12>

Ordering Information

KBC-□□, □Class, □VA, □/□A

① ② ③ ④ ⑤

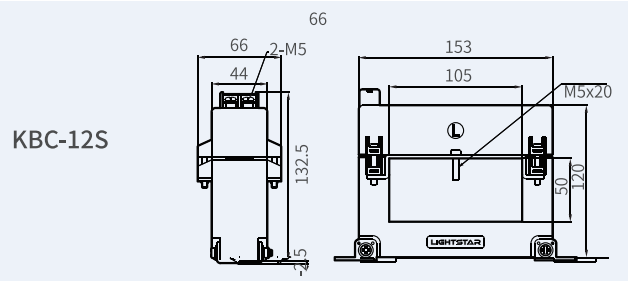
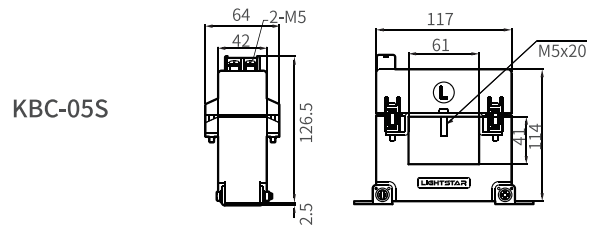
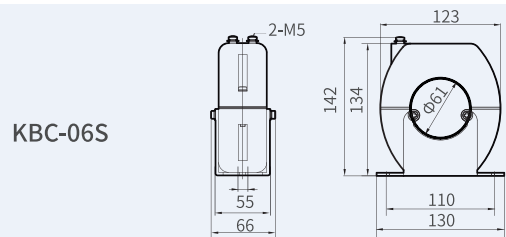
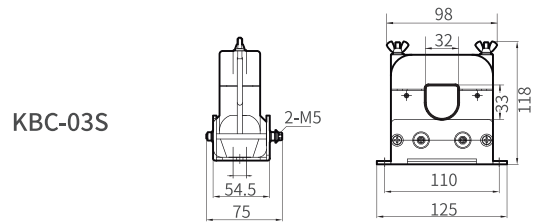
① METER Type	③ Class	④ VA	⑤ Primary	⑤ Secondary
KBC-03	3.0	5	100~150	5A or 1A
	1.0	5 15	200~300 350~600	
KBC-06	1.0	5	400~600	5A or 1A
		15	750~1500	
KBC-05	1.0	5	200~300	5A or 1A
		15	400~1200	
KBC-12	1.0	5	400	5A or 1A
		15	500~2000	

① RELAY Type	③ Class	④ VA	⑤ Primary	⑤ Secondary
KBC-03	5P5	2.5	100~150	5A or 1A
	5P10	2.5	200~300	
		5	350~600	
KBC-06	5P10	2.5	400~600	5A or 1A
		5	750~1500	
KBC-05	5P10	2.5	300~500	5A or 1A
		5	600~1200	
KBC-12	5P10	2.5	400~600	5A or 1A
		5	750~2000	

②	
Non	Without support
S	With support

Dimensions

Type	Dimensions(mm)
------	----------------



Technical Data

Withstanding Voltage	4kV - 1min	Overcurrent Strength	40
Frequency	50 / 60 Hz	Weight	KBC-03(1100g), KBC-06(1800g)
Insulation Voltage	1.15kV		



< 45 Type >



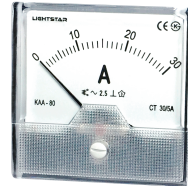
< 50 Type >



< 60 Type >



< 68 Type >

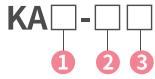


< 80 Type >



< 81 Type >

Ordering Information



1	Measurement Value	2	Size	3	Range
A	AC Ammeter	45	45(W) x 42(H)		User define
B	AC Voltmeter	50	51(W) x 49(H)		
C	DC Ammeter	60	62(W) x 62(H)		
D	DC Voltmeter	68	80(W) x 66(H)		
E	Analog signal meter	80	80(W) x 80(H)		
F	Frequency meter	81	100(W) x 83(H)		

Technical Data

Measurement	Accuracy Class (IEC 60051)	Inputs	Movement
AC Ammeter	2.5 (1.5*)	0.1~30A	Moving-Iron
AC Voltmeter	2.5 (1.5*)	10~600V	Rectifier
DC Ammeter	2.5 (1.5*)	150μA~30A (150μA~5A**), 50mV, 200mV	Rectifier
DC Voltmeter	2.5 (1.5*)	1~600V	Rectifier
Analog signal meter	2.5 (1.5*)	DC4~20mA, DC10V, AC18V	Rectifier
Frequency meter	1.0	45~65Hz	Rectifier
Note:	* : 81 Type.	** : 45, 50 Type	

Type	Scale Arc	Mounting type	Terminal Bolt	Terminal protection	Color of bezel	Weight
45 Type	90°	Bolt	M4	X	Translucent	40g
50 Type	80°	Bolt	M4, M5	O	Translucent	60g
60 Type	84°	Iron tub	M4	O	Translucent	80g
68 Type	100°	Iron tub	M4	X	Black	130g
80 Type	90°	Iron tub	M5	O	Translucent	130g
81 Type	95°	Iron tub	M5	O	Translucent	140g

Environmental Condition

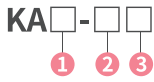
Operating temperature	0~55°C
Storage temperature	-20~85°C
Relative humidity	≤80%
Ingress protection rating	IP52(front), IP20(case)

Certificates

CE



Ordering Information



1	Measurement Value	2	Size	3	Range
A	AC Ammeter	08	80(W) x 80(H)		User define
B	AC Voltmeter	08N	80(W) x 80(H)		
C	DC Ammeter	11	110(W) x 110(H)		
D	DC Voltmeter				
E	Analog signal meter				
F	Frequency meter				

Technical Data

Measurement	Accuracy Class (IEC 60051)	Inputs	Movement
AC Ammeter	1.5	1~30A	Rectifier
AC Voltmeter	1.5	10~600V	Rectifier
DC Ammeter	1.5	200μA~5A, 50mV, 200mV	Rectifier
DC Voltmeter	1.5	1~600V	Rectifier
Analog signal meter	1.5	DC4~20mA, DC10V, AC18V	Rectifier
Frequency meter	1.0	45~65Hz	Rectifier

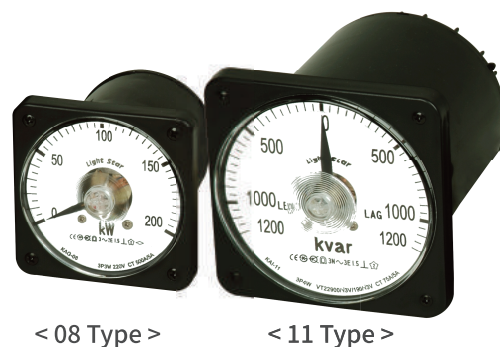
Type	Scale Arc	Mounting type	Terminal Bolt	Terminal protection	Color of bezel	Weight
08 Type	235°	Bolt	M5	O	Black	350g
08N Type	235°	Bolt	M4	O	Black	350g
11 Type	235°	Bolt	M5	O	Black	450g

Environmental Condition

Operating temperature	0~55°C
Storage temperature	-20~85°C
Relative humidity	≤80%
Ingress protection rating	IP52(front), IP20(case)

Certificates

CE



Measurement	Certificates	Type	Option	Ordering Information Model No.	Accuracy (IEC 60051)	Inputs	Weight
Max. A0 meter	-	11 Type longbody		KAM-11A	2.5	1A or 5A	750g
Max. V0 meter	-	11 Type longbody		KAM-11B	2.5	$110/\sqrt{3}$ or $190/\sqrt{3}$	750g
AC Ammeter (RMS)	-	08 Type		KAK-08A	1.5	PT(110V, 220V),	350g
		11 Type		KAK-11A	1.5	Direct (150V, 300V, 600V)	450g
AC Voltmeter (RMS)	-	08 Type		KAK-11B	1.5	5A	350g
		11 Type		KAK-08B	1.5	5A	450g
Power factor meter	CE	11 Type	Balance	KAH-11B	3.0	User define	450g
		11 Type	Unbalance	KAH-11U	3.0	User define	800g
Wattmeter	CE	11 Type		KAG-11	1.5	User define	750g
Varmeter	CE	11 Type		KAI-11	1.5	User define	750g

Technical Data

Movement	Scale Arc	Mounting type	Terminal Bolt	Terminal protection	Color of bezel
Rectifier	235°	Bolt	M5	O	Black

SWITCH METER
80 TYPE



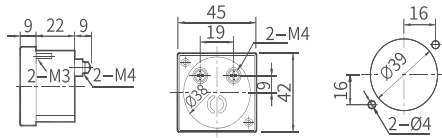
Measurement	Type	Option	Ordering Information Model No.	Accuracy (IEC 60051)	Inputs	Weight
Switch Ammeter	80 Type	3P3W	KAS-80A3	2.5	5A	130g
	80 Type	3P4W	KAS-80A4	2.5	5A	130g
Switch Voltmeter	80 Type	150V, 3P3W	KAS-80B3	2.5	150V	130g
	80 Type	150V, 3P4W	KAS-80B4	2.5	150V	130g
	80 Type	300V, 3P3W	KAS-80C3	2.5	300V	130g
	80 Type	300V, 3P4W	KAS-80C4	2.5	300V	130g

Technical Data

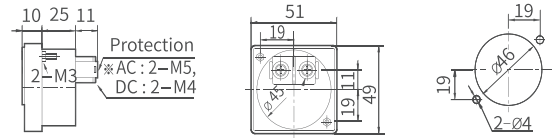
Movement	Scale Arc	Mounting type	Terminal Bolt	Terminal protection	Color of bezel
Moving-Iron	90°	Bolt	M5	O	Black



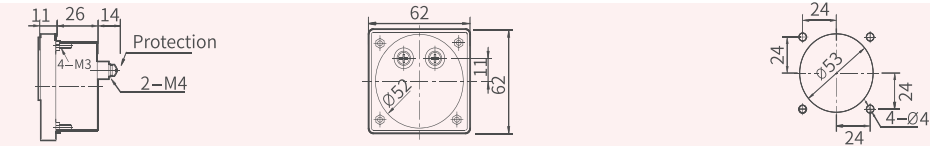
45Type



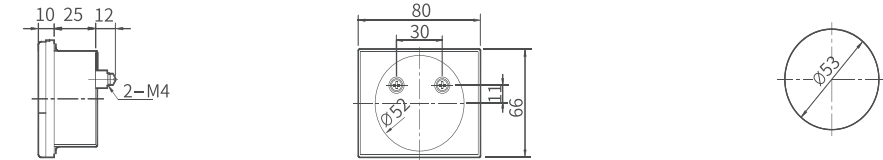
50Type



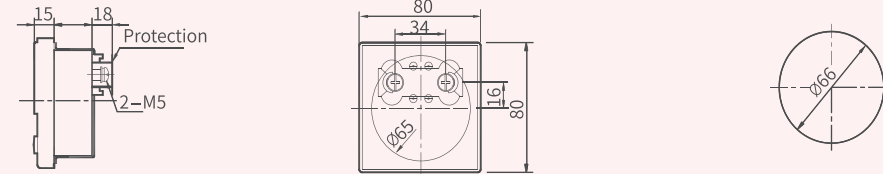
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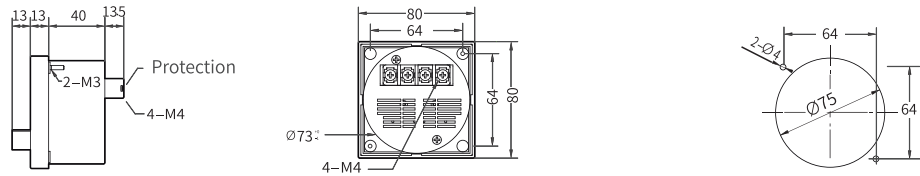
68Type



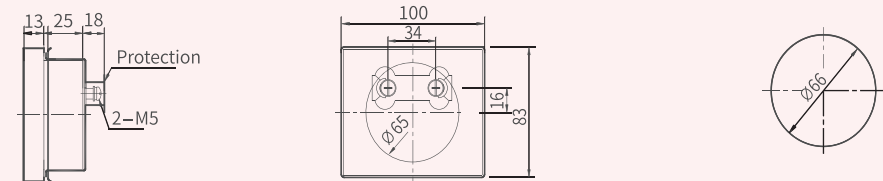
80Type



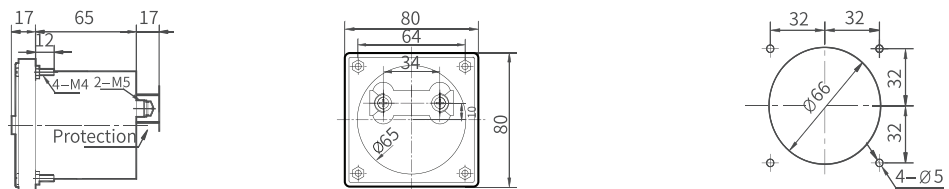
Switch meter
80Type



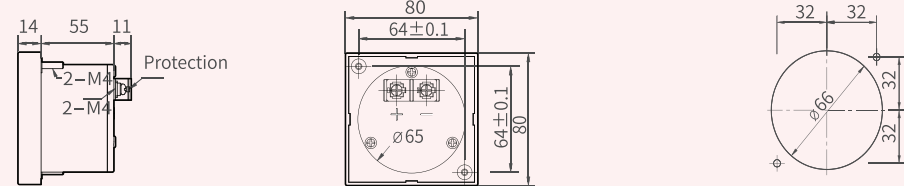
81Type



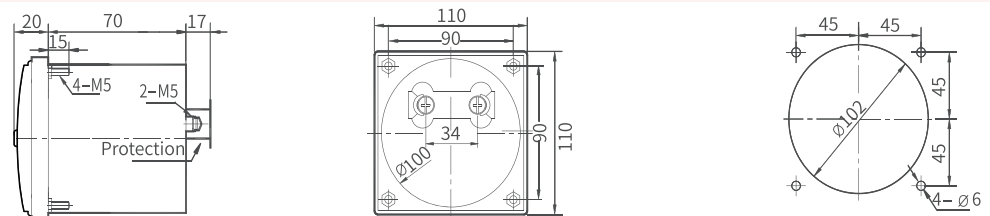
08Type



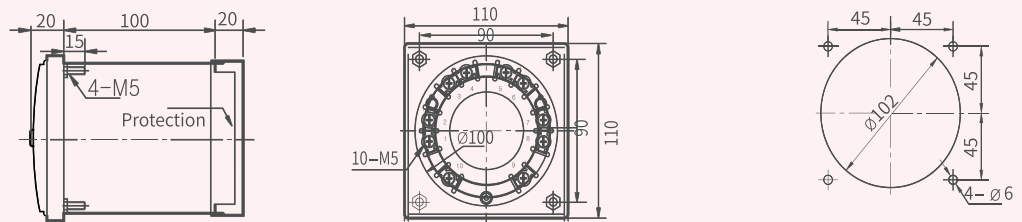
08NType



11Type



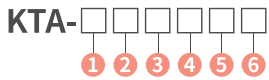
11Type
long body



Transducer(TD) converts input signal to 4~20mA and etc



Ordering Information



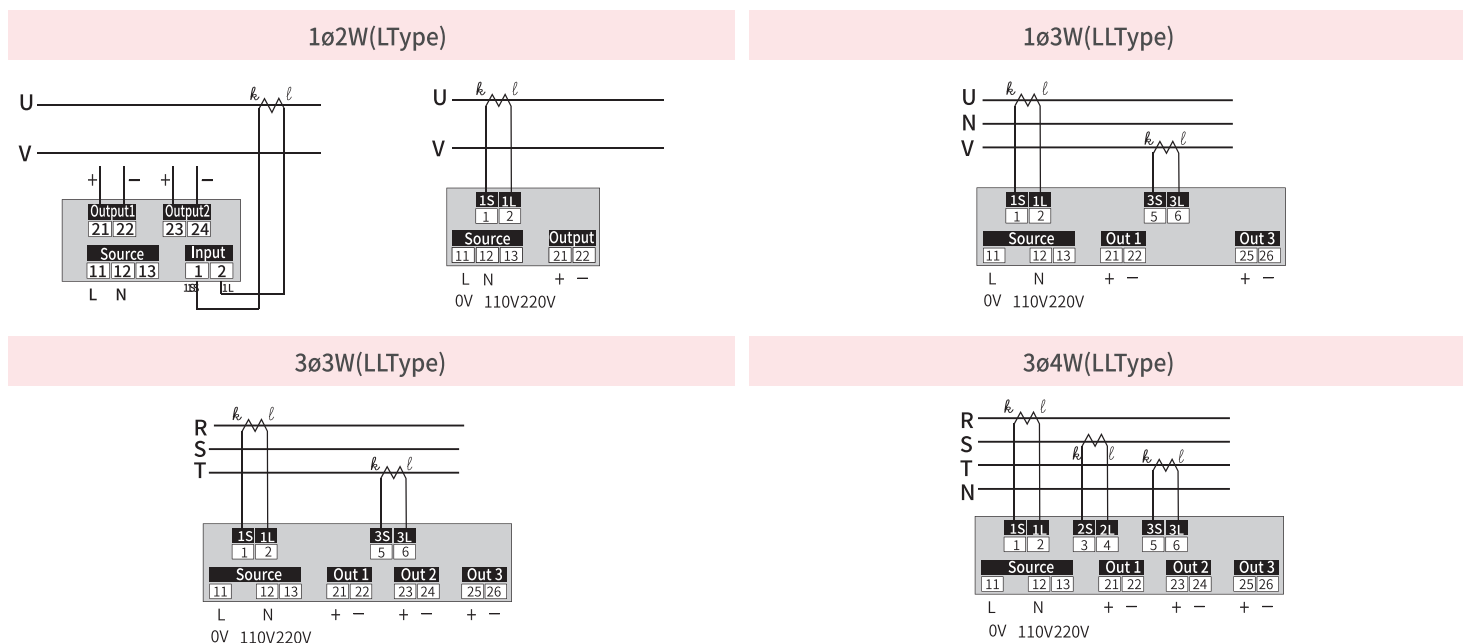
<p>① Input</p> <p>1 0 ~ 1A</p> <p>2 0 ~ 5A</p>	<p>② Output</p> <p>6 4 ~ 20mA DC (Load resistance 500 Ω max.)</p> <p>7 0 ~ 1mA DC (Load resistance 10kΩ max.)</p> <p>8 1 ~ 5V DC (Load resistance 200 Ω min.)</p> <p>9 0 ~ 10V DC (Load resistance 500 Ω min.)</p> <p>0 Special spec</p>	<p>③ Wiring</p> <p>1 1Φ2W (LTy)</p> <p>2 1Φ3W (LLTy)</p> <p>3 3Φ3W (LLTy)</p> <p>4 3Φ4W (LLTy)</p>
<p>④ Measuring Value</p> <p>A Average</p>	<p>⑤ Auxiliary supply</p> <p>1 AC 110/220V(* Single output only)</p> <p>2 AC 90 ~ 260V, DC 110V, 220V (* Average only)</p> <p>3 DC 24V(* 1Φ2W only/* Average only/* Single output only)</p> <p>0 Special spec</p>	<p>⑥ Number of output</p> <p>S Single output</p> <p>T Double output</p> <p>U Triple output</p>

<p>R RMS</p>	<p>1 AC 110/220V (* Single output only)</p> <p>0 Special spec</p>
---------------------	---

Technical Data

Accuracy Class	Average(0.2) : RMS(0.5)	Withstand Voltage	2kV-1min
Weight	Lty(500g), LLTy(1140g)	Surge impulse Voltage	Current (1.2μs / 50μs,5kv)
Operating temperature	0~55°C		Voltage (8μs / 20μs)
Load resistance	0~500Ω / 0~10kΩ / 200Ω Max. / 500Ω Max.		

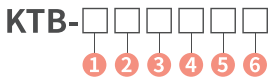
Connection Diagram





Transducer(TD) converts input signal to 4~20mA and etc

Ordering Information



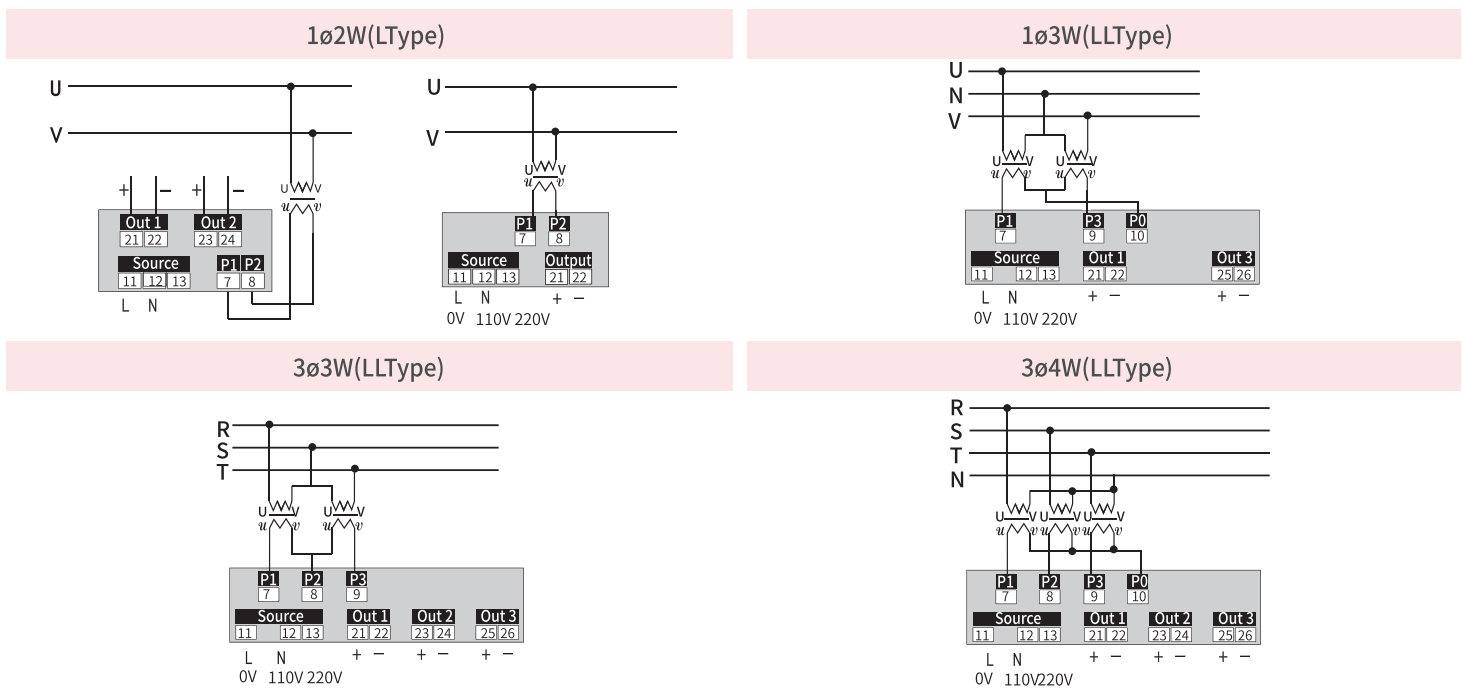
- | | | |
|---|---|---|
| <p>① Input</p> <p>1 0 ~ 150V</p> <p>2 0 ~ 300V</p> <p>0 Special spec</p> | <p>② Output</p> <p>6 4 ~ 20mA DC (Load resistance 500 Ω max.)</p> <p>7 0 ~ 1mA DC (Load resistance 10kΩ max.)</p> <p>8 1 ~ 5V DC (Load resistance 200 Ω min.)</p> <p>9 0 ~ 10V DC (Load resistance 500 Ω min.)</p> <p>0 Special spec</p> | <p>③ Wiring</p> <p>1 1Φ2W (LTy)</p> <p>2 1Φ3W (LLTy)</p> <p>3 3Φ3W (LLTy)</p> <p>4 3Φ4W (LLTy)</p> |
| <p>④ Measuring Value</p> <p>A Average</p> | <p>⑤ Auxiliary supply</p> <p>1 AC 110/220V(* Single output only)</p> <p>2 AC 90 ~ 260V, DC 110V, 220V (* Average only)</p> <p>3 DC 24V(* 1Φ2W only/* Average only/* Single output only)</p> <p>0 Special spec</p> | <p>⑥ Number of output</p> <p>S Single output</p> <p>T Double output</p> <p>U Triple output</p> |

- | | |
|---------------------|---|
| <p>R RMS</p> | <p>1 AC 110/220V (* Single output only)</p> <p>0 Special spec</p> |
|---------------------|---|

Technical Data

Accuracy Class	Average(0.2) : RMS(0.5)	Withstand Voltage	2kv-1min
Weight	Lty(500g), LLty(1140g)	Surge impulse Voltage	Current (1.2μs / 50μs,5kv)
Operating temperature	0~55°C		Voltage (8μs / 20μs)
Load resistance	0~500Ω / 0~10kΩ / 200Ω Max. / 500Ω Max.		

Connection Diagram

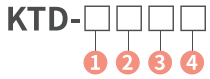




Transducer(TD) converts input signal to 4~20mA and etc



Ordering Information



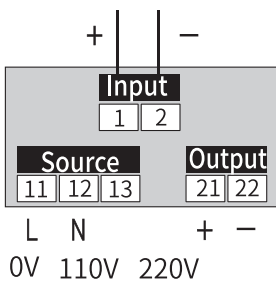
- | | | |
|----------------|--|-------------------------------------|
| ① Input | ② Output | ③ Auxiliary supply |
| 1 0 ~ 50mV | 6 4 ~ 20mA DC (Load resistance 500 Ω max.) | 1 AC 110/220V(* Single output only) |
| 2 ±50mV | 7 0 ~ 1mA DC (Load resistance 10kΩ max.) | 2 AC 90 ~ 260V, DC 110V, 220V |
| 3 0 ~ 10V | 8 1 ~ 5V DC (Load resistance 200 Ω min.) | 3 DC 24V(* Single output only) |
| 4 0 ~ 150V | 9 0 ~ 10V DC (Load resistance 500 Ω min.) | 0 Special spec |
| 5 0 ~ 20mA | 0 Special spec | |
| 6 0 ~ 1mA | | |
| 7 0 ~ 10mA | | |
| 8 0 ~ 20mA | | |
| 0 Special spec | | |
| | | ④ Number of output |
| | | S Single output |
| | | T Double output |

Technical Data

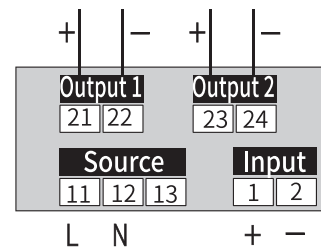
Accuracy Class	0.2	Withstand Voltage	2kV-1min
Weight	500g	Surge impulse Voltage	Current (1.2μs / 50μs,5kv) Voltage (8μs / 20μs)
Operating temperature	0~55°C		
Load resistance	0~500Ω / 0~10kΩ / 200Ω Max. /500Ω Max.		

Connection Diagram

Single output



Double output

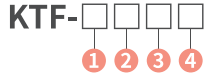




Transducer(TD) converts input signal to 4~20mA and etc



Ordering Information



① Input

- 1 AC 90~240V(0~120Hz)
- 0 Special spec

② Output

- 6 4 ~ 20mA DC (Load resistance 500 Ω max.)
- 7 0 ~ 1mA DC (Load resistance 10kΩ max.)
- 8 1 ~ 5V DC (Load resistance 200 Ω min.)
- 9 0 ~ 10V DC (Load resistance 500 Ω min.)
- 0 Special spec

③ Auxiliary supply

- 1 AC 110/220V(* Single output only)
- 2 AC 90 ~ 260V, DC 110V, 220V
- 3 DC 24V(* Single output only)
- 0 Special spec

④ Number of output

- S Single output
- T Double output

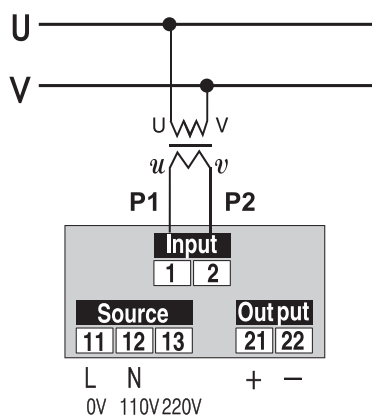
Technical Data

Accuracy Class	0.1(0~120Hz)
Weight	500g
Operating temperature	0~55°C
Load resistance	0~500Ω / 0~10kΩ / 200Ω Max. / 500Ω Max.

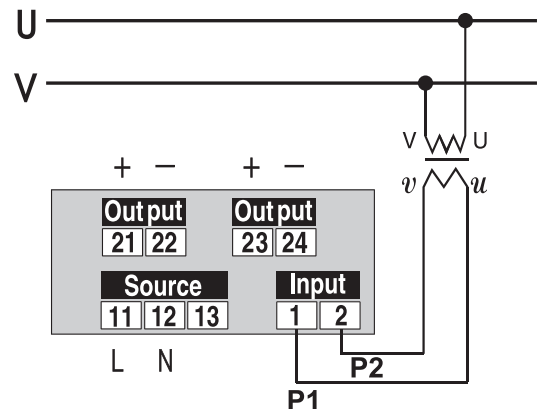
Withstand Voltage	2kV-1min
Surge impulse Voltage	Current (1.2μs / 50μs,5kv) Voltage (8μs / 20μs)

Connection Diagram

Single output



Double output

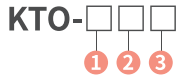




Transducer(TD) converts input signal to 4~20mA and etc



Ordering Information

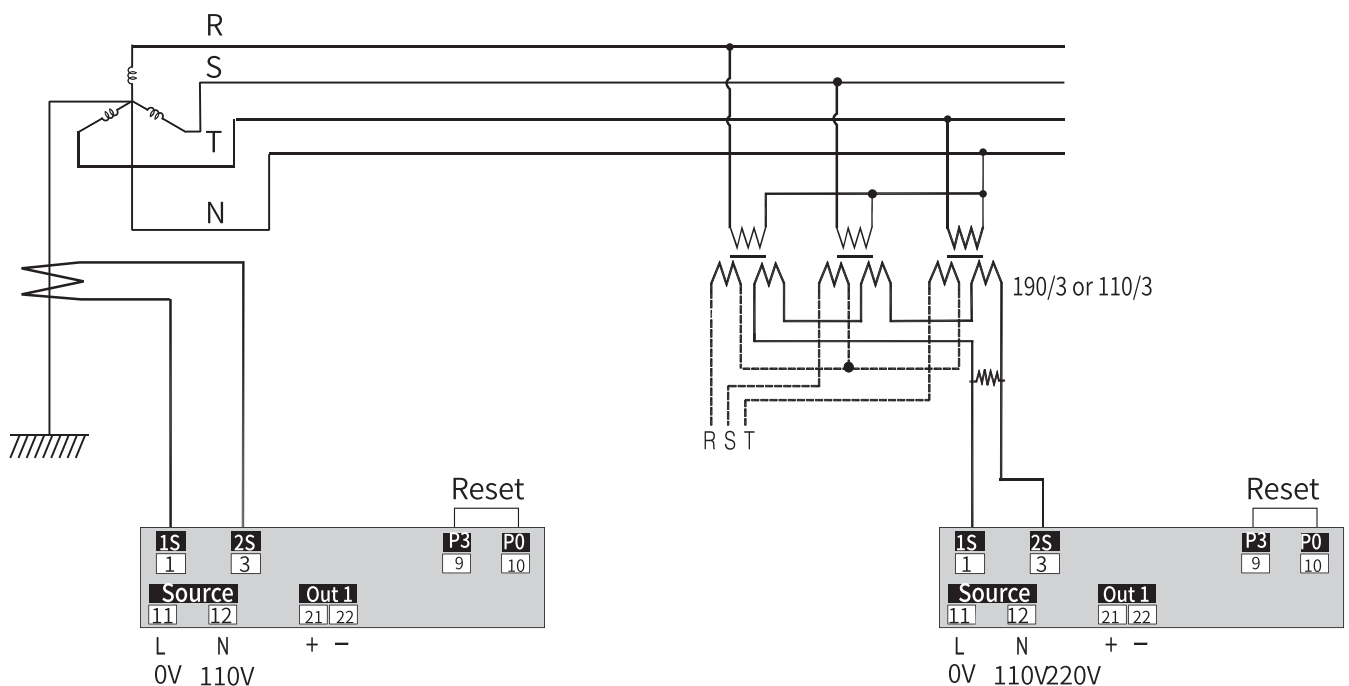


① Input	② Output	③ Auxiliary supply
1 0~5A	6 4 ~ 20mA DC (Load resistance 500 Ω max.)	1 DC 110V
2 190V	7 0 ~ 1mA DC (Load resistance 10kΩ max.)	
3 110V	8 1 ~ 5V DC (Load resistance 200 Ω min.)	
4 Special spec	9 0 ~ 10V DC (Load resistance 500 Ω min.)	
	0 Special spec	

Technical Data

Accuracy Class	0.5	Withstand Voltage	2kV-1min
Weight	850g	Surge impulse Voltage	Current (1.2μs / 50μs,5kv) Voltage (8μs / 20μs)
Operating temperature	0~55°C		
Load resistance	0~500Ω / 0~10kΩ / 200Ω Max. / 500Ω Max.		

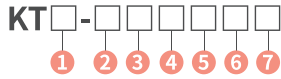
Connection Diagram





Transducer(TD) converts input signal to 4~20mA and etc

Ordering Information

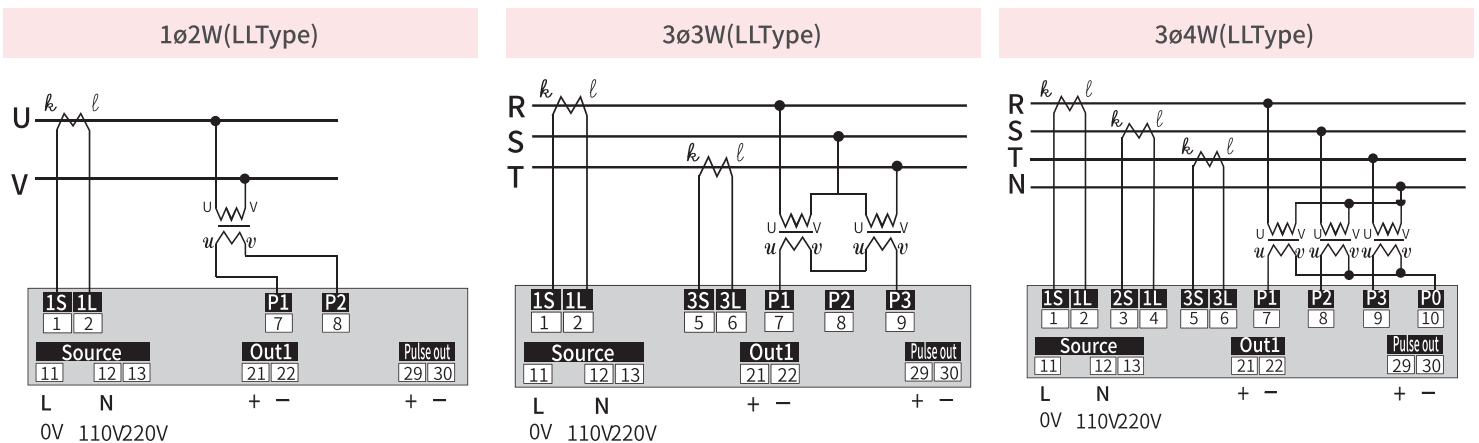


1 Type	2 Wiring	3 Input	4 Output
G AC POWER TRANSDUCER		0 Special spec	6 4 ~ 20mA DC (Load resistance 500 Ω max.)
W AC POWER & ENERGY TRANSDUCER	1 1Φ2W	1 110V/5A(600W)	7 0 ~ 1mA DC (Load resistance 10kΩ max.)
	2 1Φ3W	2 220V/5A(1200W)	8 1 ~ 5V DC (Load resistance 200 Ω min.)
	3 3Φ3W	1 220/110V/5A(1000W)	9 0 ~ 10V DC (Load resistance 500 Ω min.)
		0 Special spec	0 Special spec
		2 220V/5A(2000W)	
		0 Special spec	
5 Count	4 3Φ4W	1 110V/5A(1000W)	6 Auxiliary supply
A Mechanical contact Relay (1,000count/KWh during one hour)		2 220V/5A(2000W)	1 AC 110/220V (* Single output only)
B Open Collector (10,000count/KWh during one hour)		0 Special spec	2 AC 90 ~ 260V, DC 110V, 220V
C Voltage Pulse (Special spec)		1 208/√3V/5A(2000W)	0 Special spec
		2 380/√3/190/√3V/5A(2000W)	
		3 380/√3V/5A(4000W)	
		4 11400/√3/190/√3V/5A(1660W)	7 Number of output
		5 22900/√3/190/√3V/5A(1660W)	S Single output

Technical Data

Accuracy Class	Average(0.2) : RMS(0.5)	Withstand Voltage	2kV-1min
Weight	1140g	Surge impulse Voltage	Current (1.2μs / 50μs,5kv) Voltage (8μs / 20μs)
Operating temperature	0~55°C		
Load resistance	0~500Ω / 0~10kΩ / 200Ω Max. / 500Ω Max.		

Connection Diagram

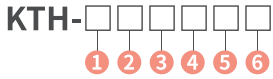




Transducer(TD) converts input signal to 4~20mA and etc



Ordering Information



① Type

- B** Balanced
- U** Unbalanced

② Wiring

1	1Φ2W	0	Special spec
2	1Φ3W	1	110V/5A
		2	220V/5A
3	3Φ3W	1	220/110V/5A
		0	Special spec
		1	110V/5A
		2	220V/5A
4	3Φ4W	0	Special spec
		1	190/√3V/5A
		2	208/√3V/5A
		3	380/√3V/5A

③ Input

0	Special spec
1	110V/5A
2	220V/5A
1	220/110V/5A
0	Special spec
1	110V/5A
2	220V/5A
0	Special spec
1	190/√3V/5A
2	208/√3V/5A
3	380/√3V/5A

④ Output

- 6** 4 ~ 12 ~ 20mA DC (Load resistance 500 Ω max.)
- 7** 0 ~ 0.5 ~ 1mA DC (Load resistance 10kΩ max.)
- 8** -5 ~ 0 ~ +5V DC (Load resistance 200 Ω min.)
- 9** -1 ~ 0 ~ +1V DC (Load resistance 500 Ω min.)
- 0** Special spec

⑤ Auxiliary supply

- 1** AC 110/220V(* Single output only)
- 2** AC 90 ~ 260V, DC 110V, 220V
- 0** Special spec

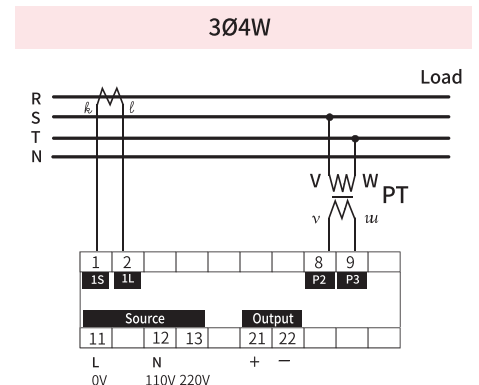
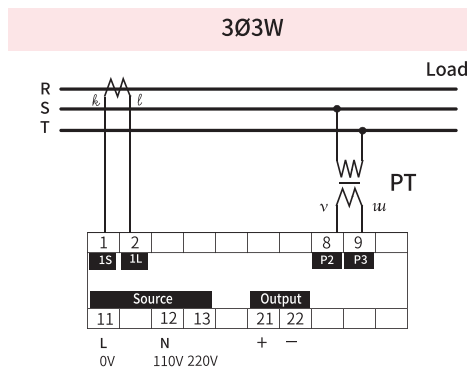
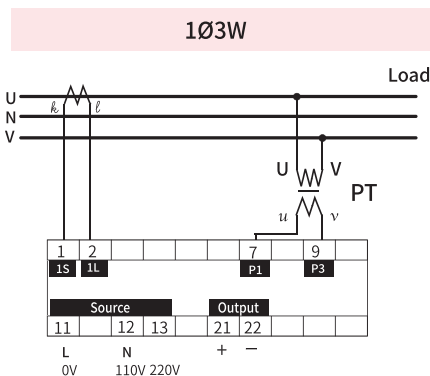
⑥ Number of output

- S** Single output
- T** Double output(Unbalanced)

Technical Data

Accuracy Class	Unbalanced(0.5) : balanced(3.0)	Withstand Voltage	2kV-1min
Weight	1140g	Surge impulse Voltage	Current (1.2μs / 50μs,5kV)
Operating temperature	0~55°C		Voltage (8μs / 20μs)
Load resistance	0~500Ω / 0~10kΩ / 200Ω Max. / 500Ω Max.		

Connection Diagram

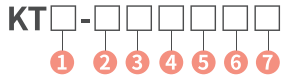




Transducer(TD) converts input signal to 4~20mA and etc



Ordering Information



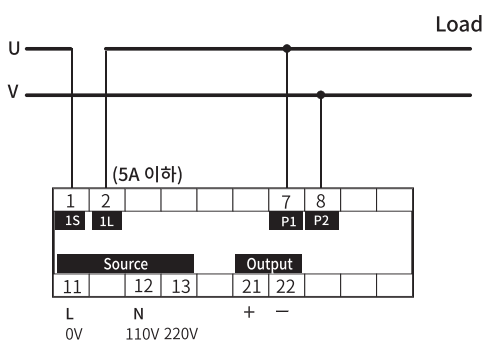
<p>1 Type</p> <p>I Reactive power</p> <p>U Reactive power & Reactive energy</p>	<p>2 Wiring</p> <p>1 1Φ2W</p> <p>2 1Φ3W</p> <p>3 3Φ3W</p> <p>4 3Φ4W</p>	<p>3 Input</p> <p>0 Special spec</p> <p>1 110V/5A(±600var)</p> <p>2 220V/5A(±1200var)</p> <p>0 Special spec</p> <p>1 220/110V/5A(±1000var)</p> <p>0 Special spec</p> <p>1 110V/5A(±1000var)</p> <p>2 220V/5A(±2000var)</p> <p>0 Special spec</p> <p>1 208/√3V/5A(±2000var)</p> <p>2 380/√3/190/√3V/5A(±2000var)</p> <p>3 380/√3V/5A(±4000var)</p> <p>4 11400/√3/190/√3V/5A(±1660var)</p> <p>5 22900/√3/190/√3V/5A(±1660var)</p>	<p>4 Output</p> <p>6 4 ~ 12 ~20mA DC (Load resistance 500 Ω max.)</p> <p>7 0 ~ 0.5 ~ 1mA DC (Load resistance 10kΩ max.)</p> <p>8 1 ~ 3 ~ +5V DC (Load resistance 200 Ω min.)</p> <p>9 0 ~ 5 ~ 10V DC (Load resistance 500 Ω min.)</p> <p>0 Special spec</p>
<p>5 Count</p> <p>A Mechanical contact Relay (1,000count/KWh during one hour)</p> <p>B Open Collector (10,000count/KWh during one hour)</p> <p>C Voltage Pulse (Special spec)</p>	<p>6 Auxiliary supply</p> <p>1 AC 110/220V(* Single output only)</p> <p>2 AC 90 ~ 260V, DC 110V, 220V</p> <p>0 Special spec</p>	<p>7 Number of output</p> <p>S Single output</p>	

Technical Data

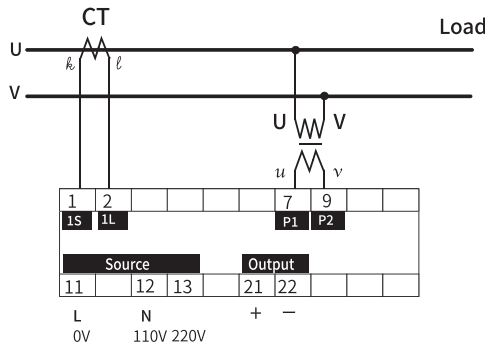
Accuracy Class	Unbalanced(0.5) : balanced(3.0)	Withstand Voltage	2kV-1min
Weight	1140g	Surge impulse Voltage	Current (1.2μs / 50μs,5kv)
Operating temperature	0~55°C		Voltage (8μs / 20μs)
Load resistance	0~500Ω / 0~10kΩ / 200Ω Max. /500Ω Max.		

Connection Diagram

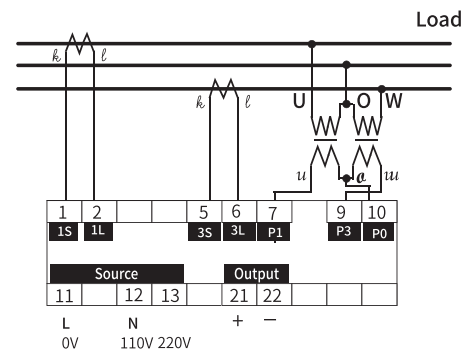
102W



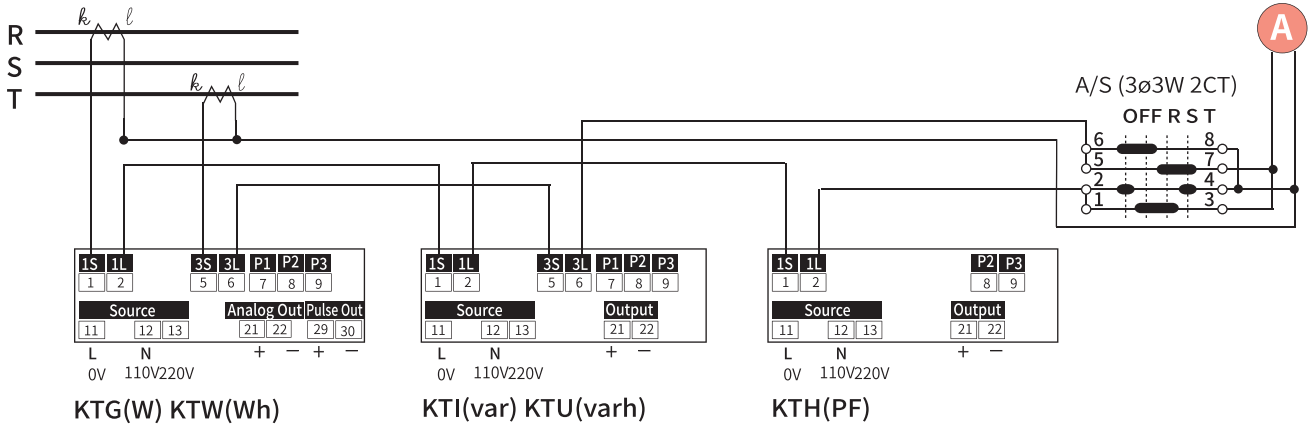
CT



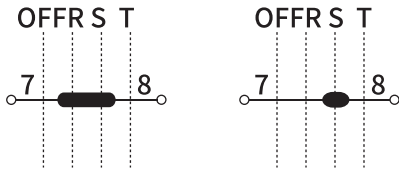
103W



3ø3W 2CT (KTG, KTW, KTI, KTU, KTH)



Contact symbols

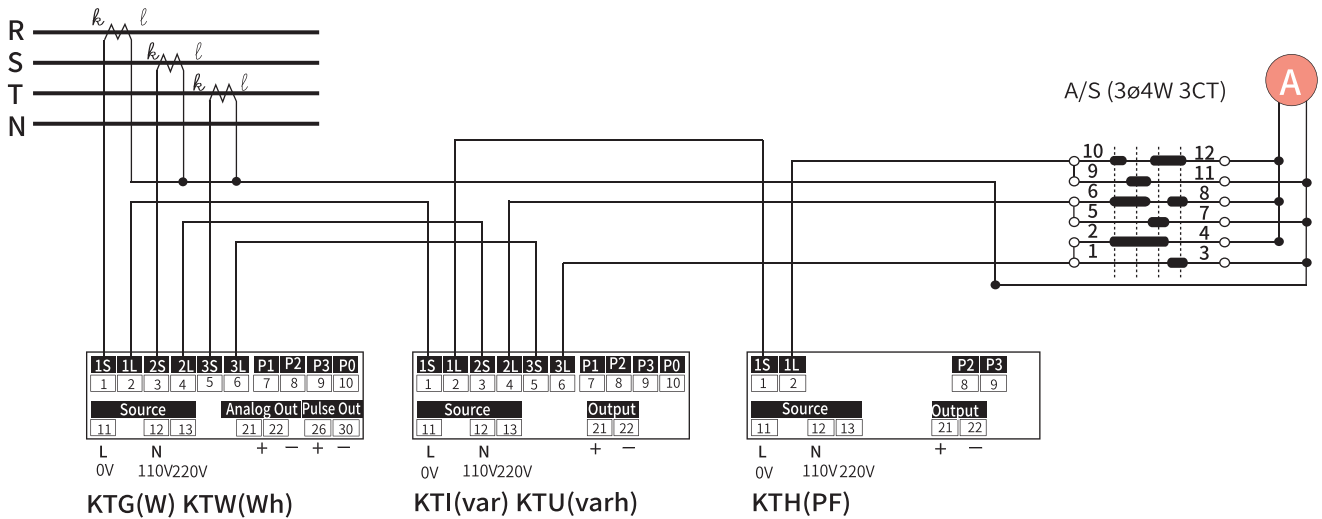


Reference

<3ø3W 2CT A/S>

Terminal No.	6-8	5-7	2-4	1-3
OFF	On	Off	On	Off
R	On	Off	Off	On
S	Off	On	Off	On
T	Off	On	On	Off

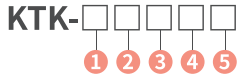
3ø4W 3CT (KTG, KTW, KTI, KTU, KTH)





Transducer(TD) converts input signal to 4~20mA and etc

Ordering Information



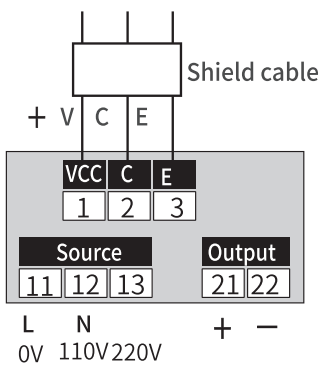
- | | | |
|--|--|---|
| <p>① Type</p> <p>1 Open collector</p> <p>0 Voltage pulse</p> | <p>② Input frequency range</p> <p>1 0 ~ 120Hz</p> <p>2 0 ~ 1kHz</p> <p>3 0 ~ 5kHz</p> <p>0 Special spec</p> | <p>③ Output</p> <p>6 4 ~ 20mA DC (Load resistance 500 Ω max.)</p> <p>7 0 ~ 1mA DC (Load resistance 10kΩ max.)</p> <p>8 1 ~ 5V DC (Load resistance 200 Ω min.)</p> <p>9 0 ~ 10V DC (Load resistance 500 Ω min.)</p> <p>0 Special spec</p> |
| <p>④ Auxiliary supply</p> <p>1 AC 110/220V(* Single output only)</p> <p>2 AC 90 ~ 260V, DC 110V, 220V</p> <p>3 DC 24V(* Single output only)</p> | <p>⑤ Number of output</p> <p>S Single output</p> <p>T Double output</p> | |

Technical Data

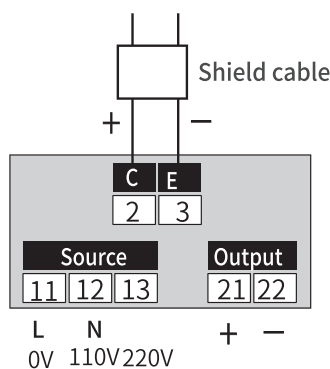
Accuracy Class	0.5	Withstand Voltage	2kV-1min
Weight	500g	Surge impulse Voltage	Current (1.2μs / 50μs, 5kV)
Operating temperature	0~55°C		Voltage (8μs / 20μs)
Load resistance	0~500Ω / 0~10kΩ / 200Ω Max. / 500Ω Max.		

Connection Diagram

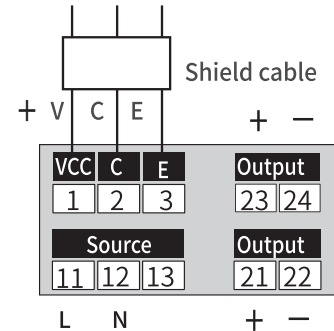
Input
(Mechanical contact/Open collector)



Input
(Pulse)



Input
(Mechanical contact/Open collector)



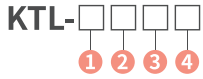
Double output



Transducer(TD) converts input signal to 4~20mA and etc



Ordering Information



① Input

- 1 0Ω~10kΩ
- 0 Special spec

② Output

- 6 4 ~ 20mA DC (Load resisrance 500 Ω max.)
- 7 0 ~ 1mA DC (Load resisrance 10kΩ max.)
- 8 1 ~ 5V DC (Load resisrance 200 Ω min.)
- 9 0 ~ 10V DC (Load resisrance 500 Ω min.)
- 0 Special spec

③ Auxiliary supply

- 1 AC 110/220V(* Single output only)
- 2 AC 90 ~ 260V, DC 110V, 220V
- 3 DC 24V(* Single output only)

④ Number of output

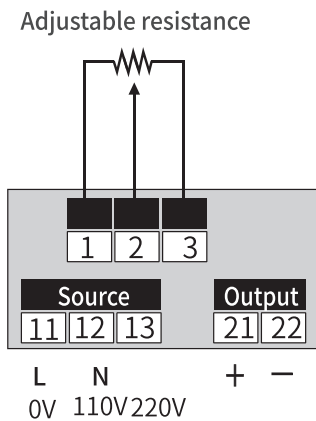
- S Single output
- T Double output

Technical Data

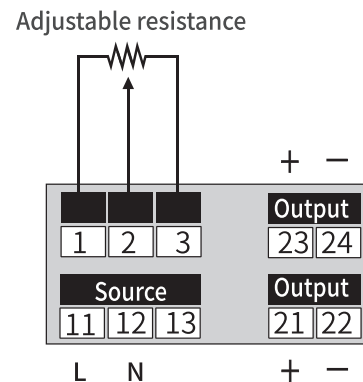
Accuracy Class	0.5	Withstand Voltage	2kV-1min
Weight	500g	Surge impulse Voltage	Current (1.2μs / 50μs,5kv)
Operating temperature	0~55°C		Voltage (8μs / 20μs)
Load resistance	0~500Ω / 0~10kΩ / 200Ω Max. / 500Ω Max.		

Connection Diagram

Single output



Double output





Transducer(TD) converts input signal to 4~20mA and etc

Ordering Information

KTM-□□
1 2

① Direct current (voltage)

- 1 50V
- 2 200V
- 3 500V

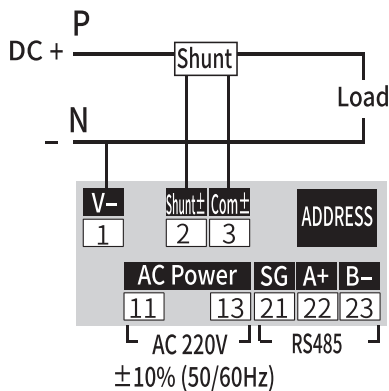
② Direct current (current)

- A 50mA
- B 60mA

Technical Data

Accuracy Class	0.5	Withstand Voltage	2kV-1min
Weight	410g	Surge impulse Voltage	Current (1.2μs / 50μs,5kv) Voltage (8μs / 20μs)
Operating temperature	0~55°C		
Communication (RS-485 Modbus RTU)	2-wire, 0~63Address 9600bps		

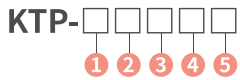
Connection Diagram





Transducer(TD) converts input signal to 4~20mA and etc

Ordering Information



① Input

- 1 Pt 100Ω
- 2 Pt 50Ω
- 0 Special spec

② Temperature range

- 1 0 ~ 200°C
- 0 Special spec

③ Output

- 6 4 ~ 20mA DC (Load resistance 500 Ω max.)
- 7 0 ~ 1mA DC (Load resistance 10kΩ max.)
- 8 1 ~ 5V DC (Load resistance 200 Ω min.)
- 9 0 ~ 10V DC (Load resistance 500 Ω min.)
- 0 Special spec

④ Auxiliary supply

- 1 AC 110/220V(* Single output only)
- 2 AC 90 ~ 260V, DC 110V, 220V
- 3 DC 24V(* Single output only)

⑤ Number of output

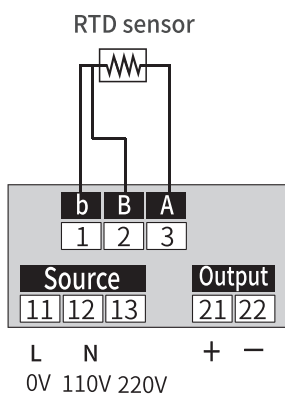
- S Single output
- T Double output

Technical Data

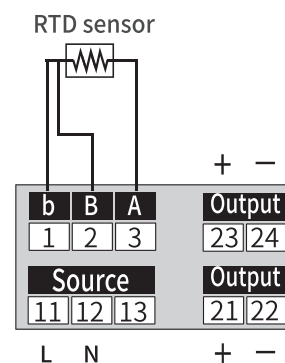
Accuracy Class	0.5	Withstand Voltage	2kV-1min
Weight	500g	Surge impulse Voltage	Current (1.2μs / 50μs,5kv) Voltage (8μs / 20μs)
Operating temperature	0~55°C		
Load resistance	0~500Ω / 0~10kΩ / 200Ω Max. / 500Ω Max.		

Connection Diagram

Single output

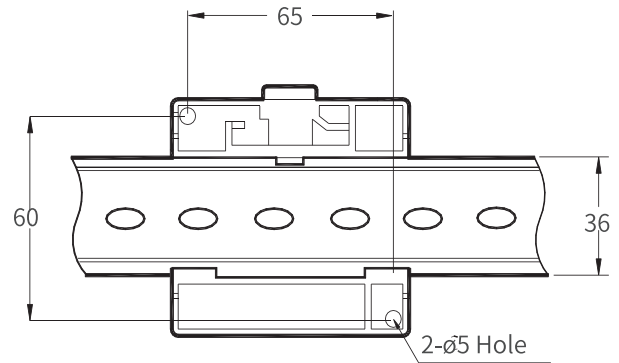
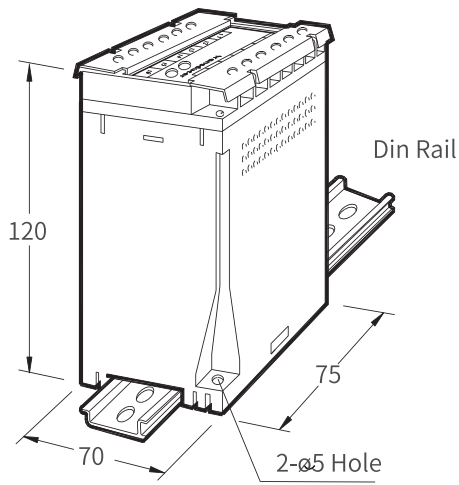


Double output



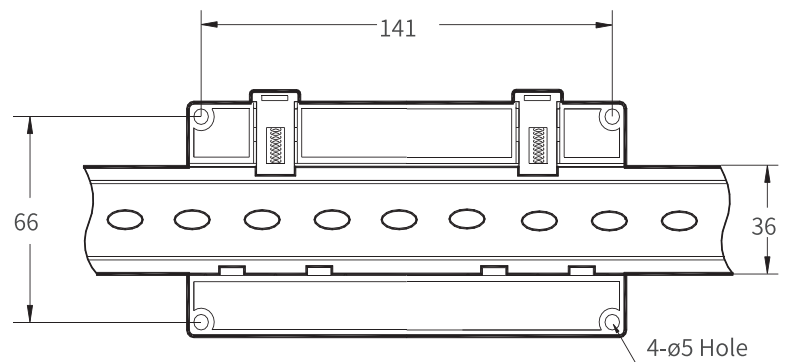
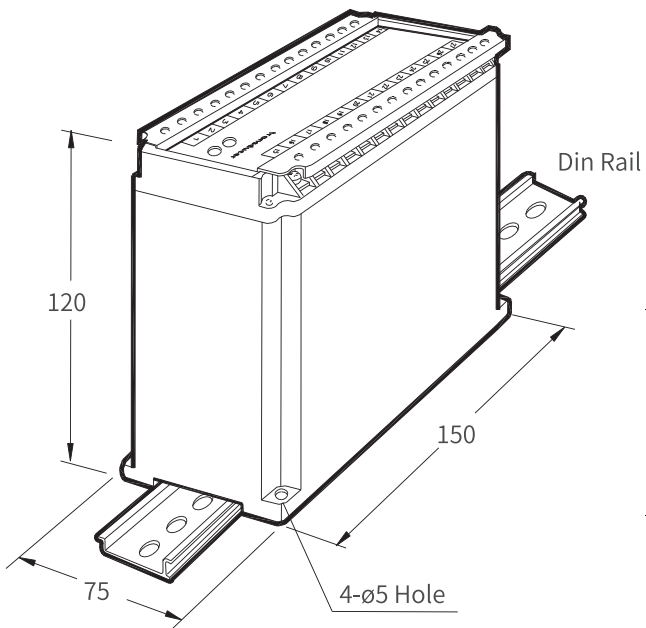


L Type



Unit : mm

LL Type



Unit : mm



Transducer(TD) converts input signal to 4~20mA and etc



Ordering Information

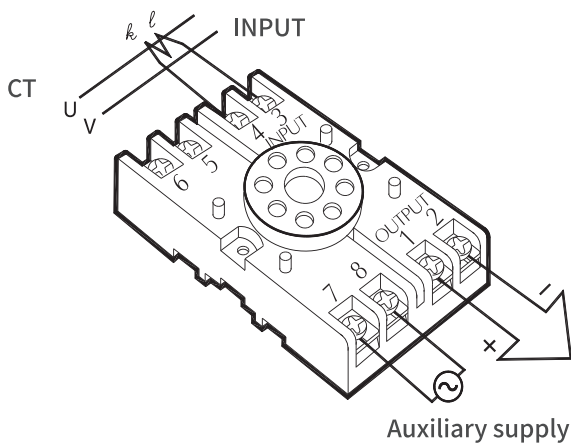
KSA-□□□
① ② ③

- | | | |
|---|---|--|
| <p>① Input</p> <p>1 0 ~ 1A</p> <p>2 0 ~ 5A</p> <p>0 Special spec</p> | <p>② Output</p> <p>6 4 ~ 20mA DC (Load resistance 500 Ω max.)</p> <p>7 0 ~ 1mA DC (Load resistance 10kΩ max.)</p> <p>8 1 ~ 5V DC (Load resistance 200 Ω min.)</p> <p>9 0 ~ 10V DC (Load resistance 500 Ω min.)</p> <p>0 Special spec</p> | <p>③ Auxiliary supply</p> <p>1 AC 220V</p> <p>2 AC 110V</p> |
|---|---|--|

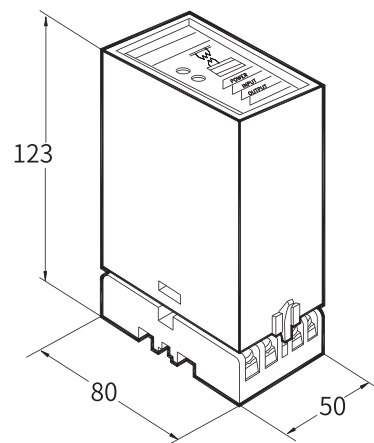
Technical Data

Accuracy Class	0.3	Withstand Voltage	2kV-1min
Weight	400g	Load resistance	0~500Ω / 0~10kΩ / 200Ω Max. / 500Ω Max.
Operating temperature	0~55°C		

Connection Diagram



Demention





Transducer(TD) converts input signal to 4~20mA and etc



Ordering Information

KSB-□□□
① ② ③

① Input

- 1 0 ~ 150V
- 2 0 ~ 300V
- 0 Special spec

② Output

- 6 4 ~ 20mA DC (Load resistance 500 Ω max.)
- 7 0 ~ 1mA DC (Load resistance 10kΩ max.)
- 8 1 ~ 5V DC (Load resistance 200 Ω min.)
- 9 0 ~ 10V DC (Load resistance 500 Ω min.)
- 0 Special spec

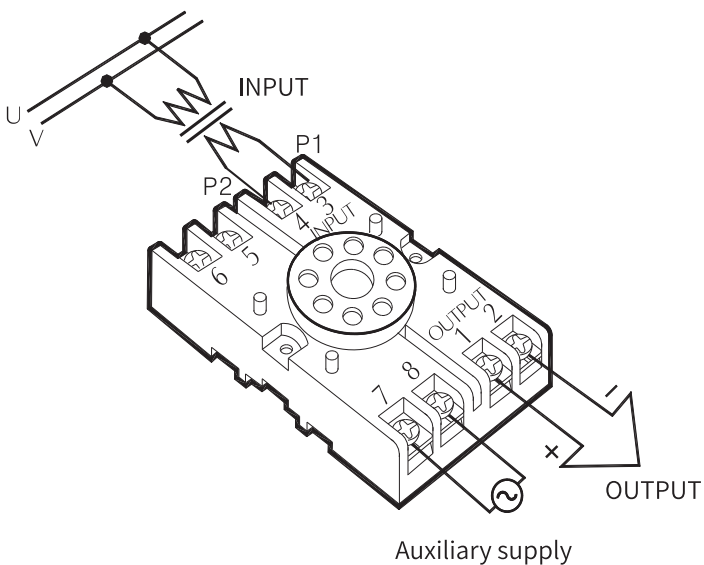
③ Auxiliary supply

- 1 AC 220V
- 2 AC 110V

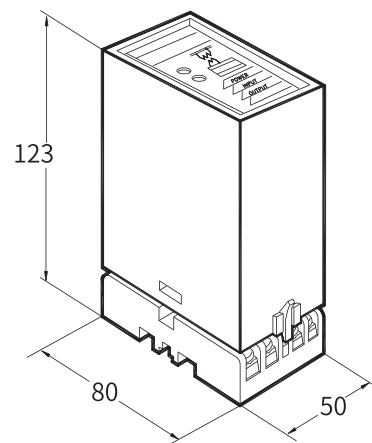
Technical Data

Accuracy Class	0.3	Withstand Voltage	2kV-1min
Weight	400g	Load resistance	0~500Ω / 0~10kΩ / 200Ω Max. / 500Ω Max.
Operating temperature	0~55°C		

Connection Diagram



Demention





Transducer(TD) converts input signal to 4~20mA and etc

Ordering Information

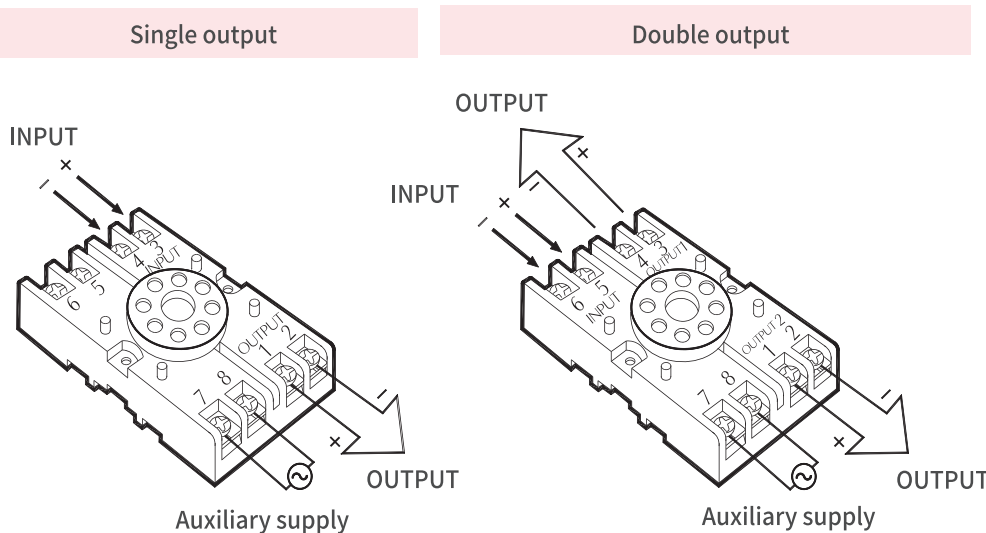
KSD-□□□□
① ② ③ ④

- | | | |
|---|---|--|
| <p>① Input</p> <p>1 0 ~ 50mV</p> <p>2 0 ~ 60mV</p> <p>3 0 ~ 10V</p> <p>4 0 ~ 5V</p> <p>5 4 ~ 20mA</p> <p>6 0 ~ 1mA</p> <p>7 0 ~ 10mA</p> <p>8 0 ~ 20mA</p> <p>0 Special spec</p> | <p>② Output</p> <p>6 4 ~ 20mA DC (Load resistance 500 Ω max.)</p> <p>7 0 ~ 1mA DC (Load resistance 10kΩ max.)</p> <p>8 1 ~ 5V DC (Load resistance 200 Ω min.)</p> <p>9 0 ~ 10V DC (Load resistance 500 Ω min.)</p> <p>0 Special spec</p> | <p>③ Auxiliary supply</p> <p>1 AC 220V (* Single output only)</p> <p>2 AC 110V (* Single output only)</p> <p>3 AC 90~260V, DC 110V/220V (* Double output only)</p> <p>0 Special spec</p> <p>④ Number of output</p> <p>S Single output</p> <p>T Double output</p> |
|---|---|--|

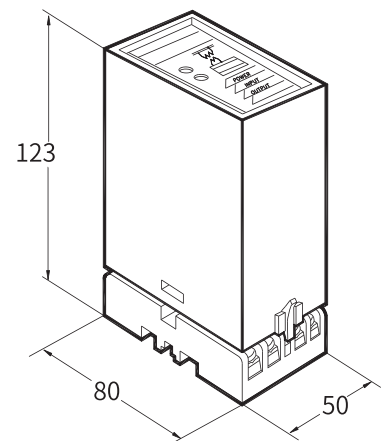
Technical Data

Accuracy Class	0.25	Withstand Voltage	2kV-1min
Weight	400g	Load resistance	0~500Ω / 0~10kΩ
Operating temperature	0~55°C		/ 200Ω Max. / 500Ω Max.

Connection Diagram



Demention

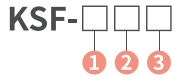




Transducer(TD) converts input signal to 4~20mA and etc



Ordering Information



① Input

- 1 AC 90 ~ 240V (0 ~ 120 Hz)
- 0 Special spec

② Output

- 6 4 ~ 20mA DC (Load resistance 500 Ω max.)
- 7 0 ~ 1mA DC (Load resistance 10kΩ max.)
- 8 1 ~ 5V DC (Load resistance 200 Ω min.)
- 9 0 ~ 10V DC (Load resistance 500 Ω min.)
- 0 Special spec

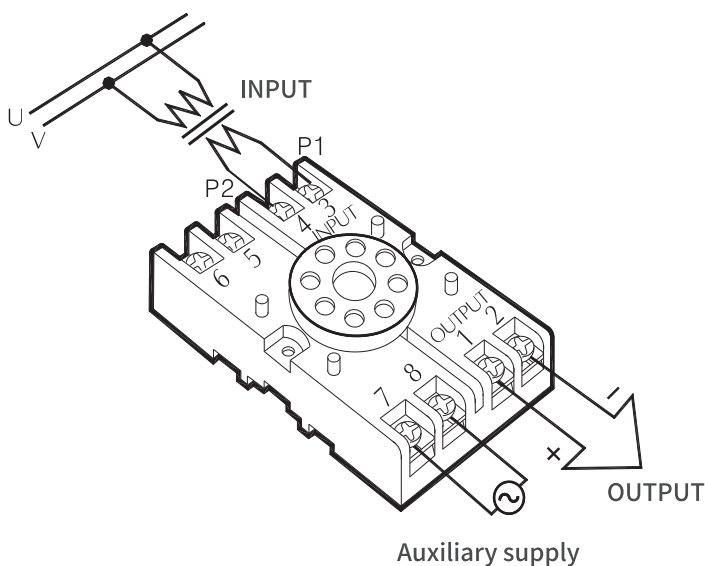
③ Auxiliary supply

- 1 AC 220V
- 2 AC 110V

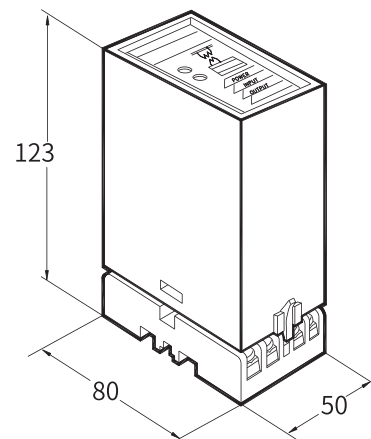
Technical Data

Accuracy Class	0.25(0~120Hz), 0.5(45~65Hz)	Withstand Voltage	2kV-1min
Weight	400g	Load resistance	0~500Ω / 0~10kΩ / 200Ω Max. / 500Ω Max.
Operating temperature	0~55°C		

Connection Diagram



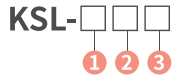
Demention



Transducer(TD) converts input signal to 4~20mA and etc



Ordering Information



① Input

- 1 0 ~ 500Ω
- 2 0 ~ 1kΩ
- 3 0 ~ 10kΩ
- 0 Special spec

② Output

- 6 4 ~ 20mA DC (Load resistance 500 Ω max.)
- 7 0 ~ 1mA DC (Load resistance 10kΩ max.)
- 8 1 ~ 5V DC (Load resistance 200 Ω min.)
- 9 0 ~ 10V DC (Load resistance 500 Ω min.)
- 0 Special spec

③ Auxiliary supply

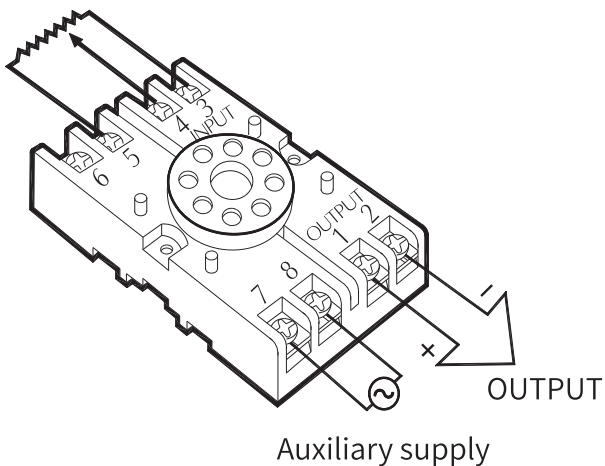
- 1 AC 220V
- 2 AC 110V

Technical Data

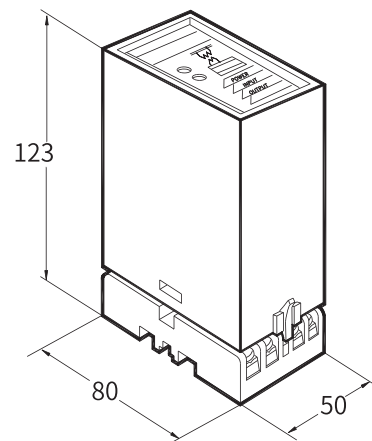
Accuracy Class	0.5	Withstand Voltage	2kV-1min
Weight	400g	Load resistance	0~500Ω / 0~10kΩ / 200Ω Max. / 500Ω Max.
Operating temperature	0~55°C		

Connection Diagram

Adjustable resistance



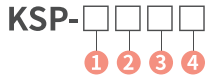
Demention



Transducer(TD) converts input signal to 4~20mA and etc



Ordering Information



① Input

- 1 Pt 100Ω
- 2 Pt 50Ω
- 0 Special spec

② Temperature range

- 1 0 ~ 200°C
- 0 Special spec

③ Output

- 6 4 ~ 20mA DC (Load resistance 500 Ω max.)
- 7 0 ~ 1mA DC (Load resistance 10kΩ max.)
- 8 1 ~ 5V DC (Load resistance 200 Ω min.)
- 9 0 ~ 10V DC (Load resistance 500 Ω min.)
- 0 Special spec

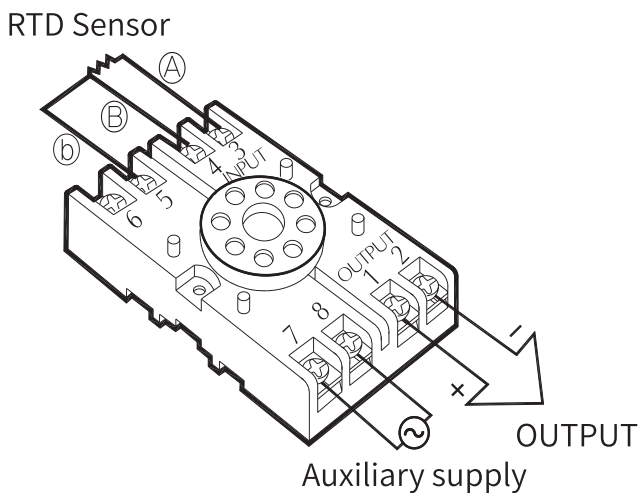
④ Auxiliary supply

- 1 AC 220V
- 2 AC 110V

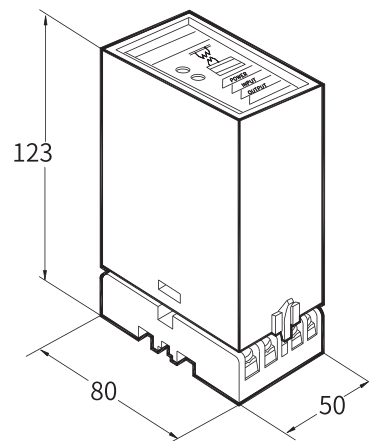
Technical Data

Accuracy Class	0.5	Withstand Voltage	2kV-1min
Weight	400g	Load resistance	0~500Ω / 0~10kΩ / 200Ω Max. / 500Ω Max.
Operating temperature	0~55°C		

Connection Diagram



Dimension





KZT products are used in product inspection by companies that make electronic products such as TV, radio, washing machine, refrigerator. It is a device that measures the voltage, current, and power factor when the electronic product operates, and checks whether it meets the standard. You can quickly and easily test and save your test results in connection with a computer



Ordering Information



①	Current input range	Voltage	Power	Power Factor
1	2.00 ~ 20.00A	30.0 ~ 300.0V	125 ~ 5000W	50.0 ~ 100.0
2	0.500 ~ 5.000A	30.0 ~ 300.0V	25.0 ~ 750.0W	50.0 ~ 100.0
3	0.200 ~ 2.00A	30.0 ~ 300.0V	10.0 ~ 500.0W	50.0 ~ 100.0
4	50.0 ~ 999.9mA	30.0 ~ 300.0V	2.50 ~ 99.99W	50.0 ~ 100.0

Technical Data


Accuracy

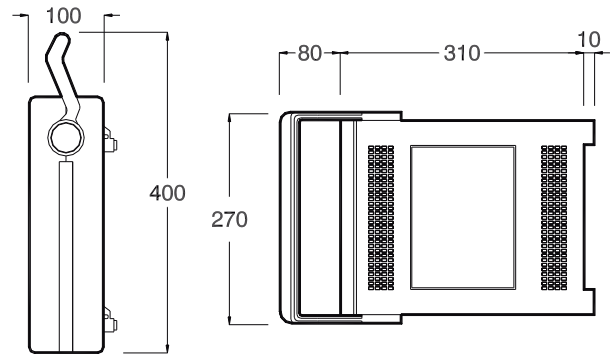
Current	≤ 0.2% of reading + 0.1% of FS at 45 ~ 65 Hz
Voltage	≤ 0.2% of reading + 0.1% of FS at 45 ~ 65 Hz
Power	≤ 0.2% of reading + 0.1% of FS at 45 ~ 65 Hz
Frequency	10Hz ≤ 1% of range
	45~65Hz ≤ 0.2% of reading + 0.1% of FS
	2kHz ≤ 1% of range
	20kHz ≤ 2% of range(Voltage/Current) ≤ 3% of range(Power)

Communication

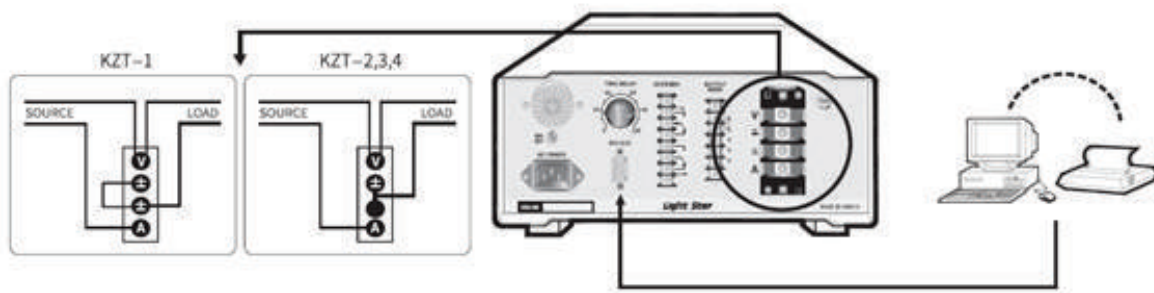
Interface	RS-232C
Transmission Text	ASC II BCD
Transmission Speed	9600bps
Transmission format	Start 1bit, Data 8bit, Parity None Stop 1bit

Dimensions

Weight(g)  2.5kg(unpacked), 3.0kg(shipping)



Connection Diagram





KZE-MOF is used to measure the current ratio error between the primary current and the secondary current in the high-voltage MOF.



Ordering Information

KZE-MOF

Technical Data

Primary current detector

Setting	Indication	Accuracy	Temperature
4A	AC 0.25 ~ 5A	±1.0% FS+- 2digit	85°C
40A	AC2.5 ~ 50A		
200A	AC25 ~ 200A		
Output	Wireless (BLUE TOOTH) Communication 5000 digits		
Auxiliary supply	DC6V(1.5V AA Alkaline Battery 4EA : 5 hours)		
Dimensions	200(W) X 80(D) X 180(H)(mm)		

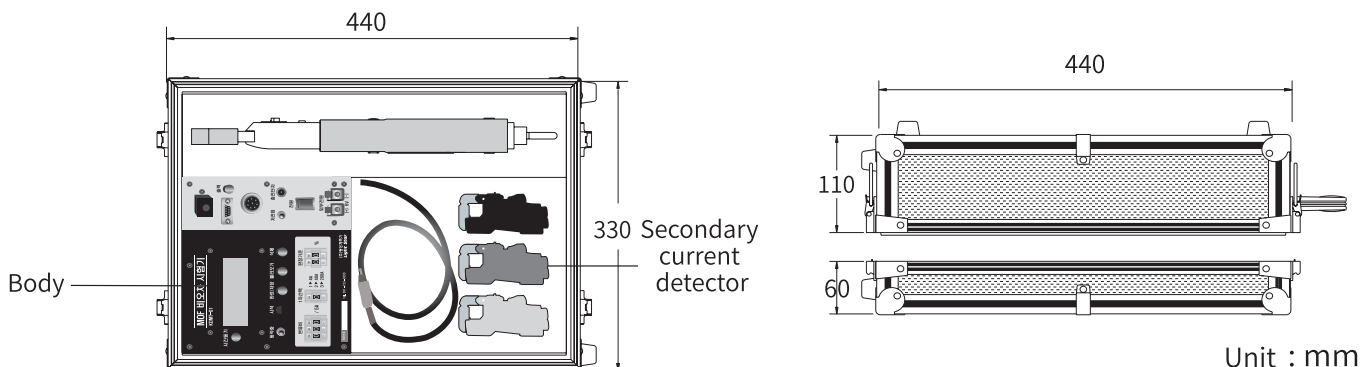
Secondary current detector

Setting	Indication	Accuracy	Temperature
4A	AC 0.25~5A	±1.0% FS+- 2digit	0°C ~ 40°C
Input line length	2.5m		
Dimensions	43(W) X 20(D) X 97(H)(mm) / 20Φ		

Body

Input	Primary current: Wireless communication 1EA Secondary current: AC 500mV/5A 3EA	
Auxiliary supply	DC 5V (Internal lithium ion battery charging- Continuous use time: 5 hours)	
Maximum accuracy	+-1.0% FS+- 2digit	
Dimensions and weight	330(W) X 170(D) X 440(H)(mm) / 10kg	

Dimensions



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