

HIMAP & HICAM



HIMAP

HICAM



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HICAM

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HIMAP & HICAM

Hyundai Intelligent
Measuring &
Protection Device

Hyundai Intelligent
Communication &
Measuring Device



Protection
Relay
Function

Event
Record
Function

Fault Wave
Record
Function

Circuit Breaker
Remote Control
Function

Communication
Function

Measuring
Function

Hyundai Intelligent Measuring & Protection Device

HIMAP

HIMAP is a multifunctional digital protection relay that has a protection function to protect incoming and feeder lines, the motor and the transformer.

It also has various kinds of measuring functions to check synchronization and a communication function for the Power Management System(HIPMS) to supervise operating conditions.



< DISPLAY >

METER12 [SET

CLOSE

OPEN

OP

CLOSE

OPEN

DISPLAY

SET

Hyundai Intelligent Measuring & Protection Device

1 Easy Installation and Maintenance

HIMAP is designed with a removable case so that the external electric lines can be connected to the inner part for easy installation and maintenance.

2 Use of a Digital Filter

HIMAP uses a digital filter, which prevents any harmonic effects from the high frequency on the power line.

3 Self-diagnosis Function

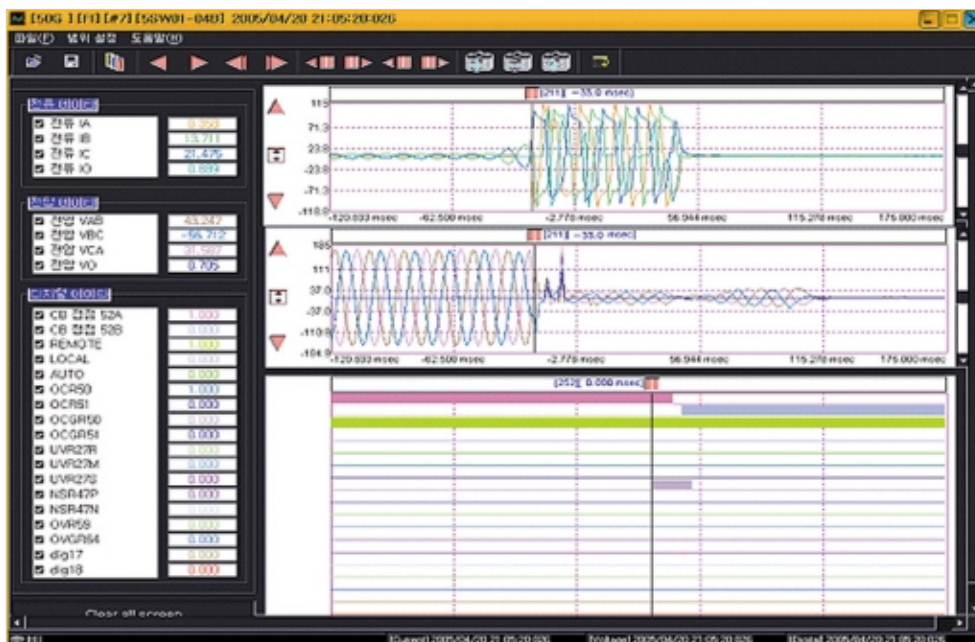
HIMAP has a self-diagnosis function set to observe any system failures, send an alarm signal, and display it on the VFD window.

Characteristics

- ▶ Excellent operating characteristics using a 32 bit microprocessor.
- ▶ Easy to operate using an interactive menu system.
- ▶ Easy to connect monitoring system & local computer using four communication channels.
- ▶ Increased reliability using a self-diagnostic function.
- ▶ Designed for operator's convenience.

Fault / Event Recording Function

HIMAP saves fault events up to 100. Each event data has a fault phase, pick up ratio, operating time and fault date. Also, for the latest fault, HIMAP saves a fault wave which is 300 cycles with the resolution 36 sampling / cycle. This can be transfer to monitoring system by communication port.



Circuit Breaker Remote Control Function

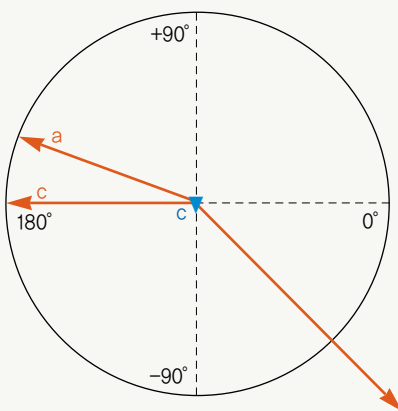
HIMAP remotely controls circuit breakers by means of the command from SCADA Systems and controls the load of power in the computer through RS-485 communication port.

If there is interfacing with another company's monitoring system, it is easy to connect both systems because our communication control device provides various interface ports and protocols.

Harmonic Analysis Function

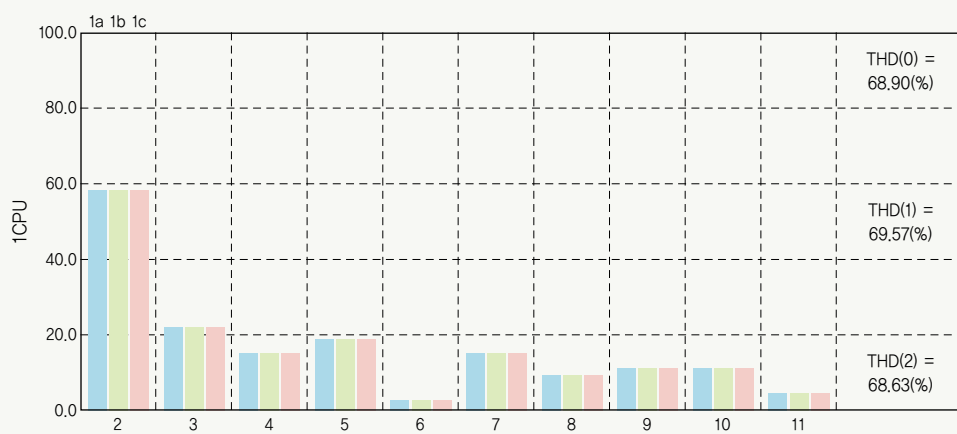
- ▶ Harmonic contents(1st~11th) for three phase current can be measured. (THD, TDD)
- ▶ Harmonic contents for three phase fault wave can be analyzed using HIMAP manager program.

Vector Diagram



1a	=	3.56 ∠ 181.85°
1b	=	3.53 ∠ 352.31°
1c	=	3.57 ∠ 183.83°
Vab	=	0.23 ∠ 260.47°
Vbc	=	0.22 ∠ 259.81°
Vca	=	0.16 ∠ 260.56°

Harmonic Analysis



Characteristics

Protection Relay Function

Model	Protection Object	Relay Function		
HIMAP – FI	Incoming Feeder	<ul style="list-style-type: none"> • OCR(50/51) • SGR(67G) • UVR(27R/27M/27S) 	<ul style="list-style-type: none"> • OCGR(50G/51G) • OVR(59) • PSR(47P/47N) 	<ul style="list-style-type: none"> • DGR(67G) • OVGR(64) • Closing/Trip coil supervision(94)(Option)
HIMAP – M	Motor	<ul style="list-style-type: none"> • OCR(50) • NCHR(66) • SGR(67G) 	<ul style="list-style-type: none"> • 51LR • UCR(37) • DFR(87M) 	<ul style="list-style-type: none"> • THR(49) • OCGR(50G/51G) • Closing/Trip coil supervision(94)(Option)
HIMAP-T	Transformer	<ul style="list-style-type: none"> • DFR(87T) • OCGR(50G/51G) • SGR(67G) 	<ul style="list-style-type: none"> • OCR(50/51P)* • DGR(67G) • Closing/Trip coil supervision(94)(Option) 	<ul style="list-style-type: none"> • OCR(50/51S)*
HIMAP-SC	Syncro-Check	<ul style="list-style-type: none"> • SCR(25) 	<ul style="list-style-type: none"> • UVR(27) 	

※ HIMAP-T Type has 2 OCRs. P means primary and S means secondary.

Measuring Function

HIMAP has a measuring function as shown in the below table. It displays the value of each measurement on the VFD window by operating a menu key and then transfers and displays the data on the HIMIX window, which has an outside digital indicator connected by a communication cable.

Various kinds of measuring values are converted to a primary value by input of a CT/PT ratio and then displayed on the VFD window.

Measuring		Display	Accuracy (%)
Voltage(Vrs, Vst, Vtr, Vo, Vps, Vns, Vavg, Vomax)		0~999999 V	±0.5
Current(Ir, Is, It, Io, Ips, Ins, Iavg, ITHD, ITDD)		0~999999 A	±0.5
Power	Real Power	0~99999999 kW	±0.5
	Reactive Power	0~99999999 kvar	±1.0
	Apparent Power	0~99999999 kVA	±1.0
	Accumulated Real Energy	0~99999999 kWh	±1.0
	Accumulated Reactive Energy	0~99999999 kvarh	±1.0
	Power Factor	-1.0~1.0 PF	±0.5
Frequency		45~65 Hz	±0.01 Hz

※ CT/PT ratio will be set by using relay control keys and then displayed via VFD window.
The values will be saved at flash memory even though the power line will be off.

Communication Function

HIMAP has four communication ports. RS-485 ports transfer all information related to relay operation status, measuring information, and operation status of circuit breakers. This information is then perceived by HIMAP and sent to communication control device at the speed of 62.5 K bps, using RS-485 HDLC frame protocol and NRZI mode of synchronous communication.

The communication control device connects a master PC to the Power Management System (HIPMS) at the speed of 10M bps by Ethernet, TCP/IP. Please refer to the HIPMS manual for details on the monitoring function.

HIMIX communication port transfers kinds of measuring values optional to HIMIX at the speed of 9600 bps.

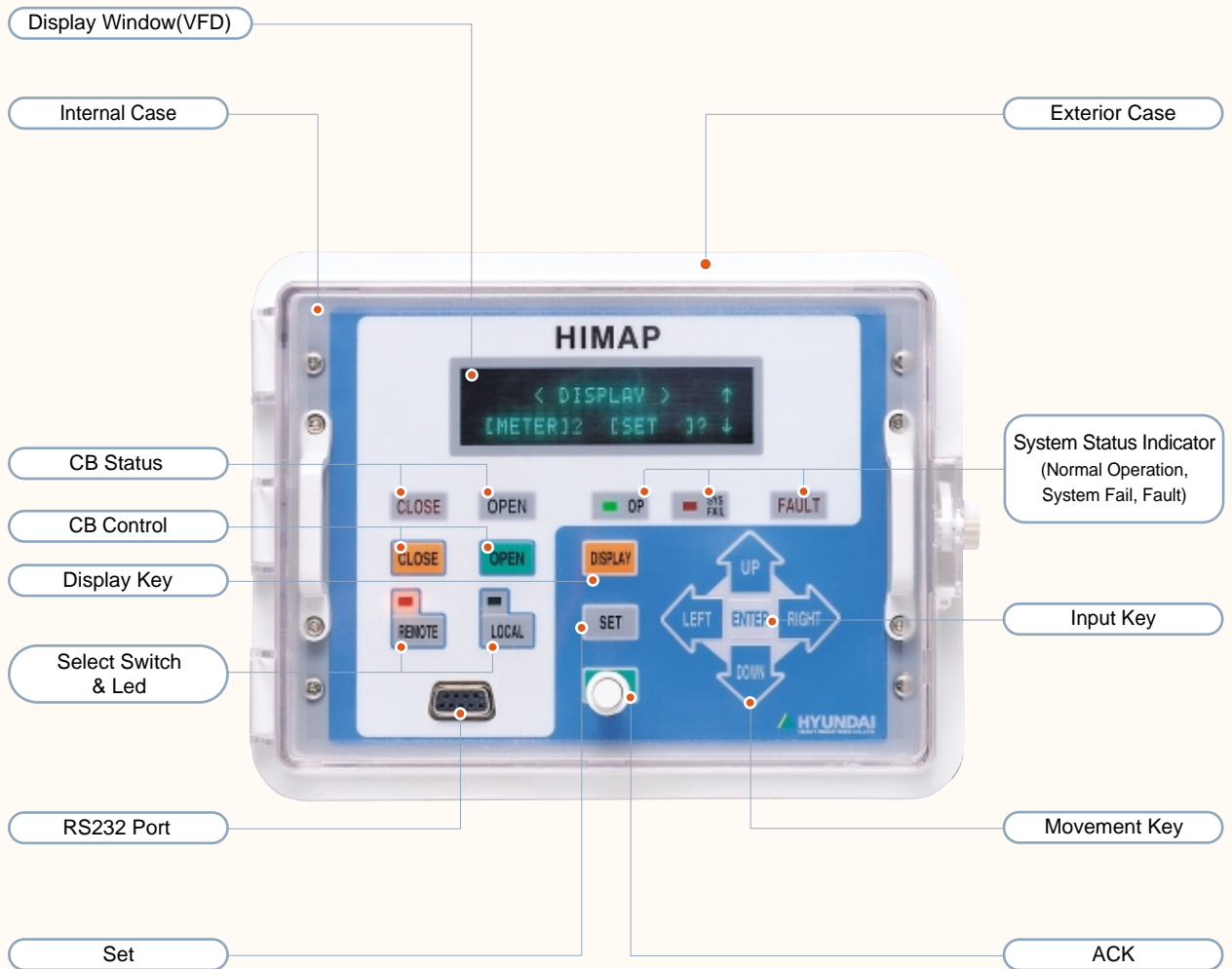
The external port of HIMAP transfers the fault record from a site to the PC for analysis, changes the relay element value to a correct one, and is an RS-232C communication port to monitor the status of all kinds of protection relay.

Interface with SCADA

Communication Control Device	Type of Communication	Protocol
HiCM860S	Ethernet	Modbus / TCP
HiCM-PC	RS-232, 422, 485	Modbus / RTU

Display

Front View



Specification

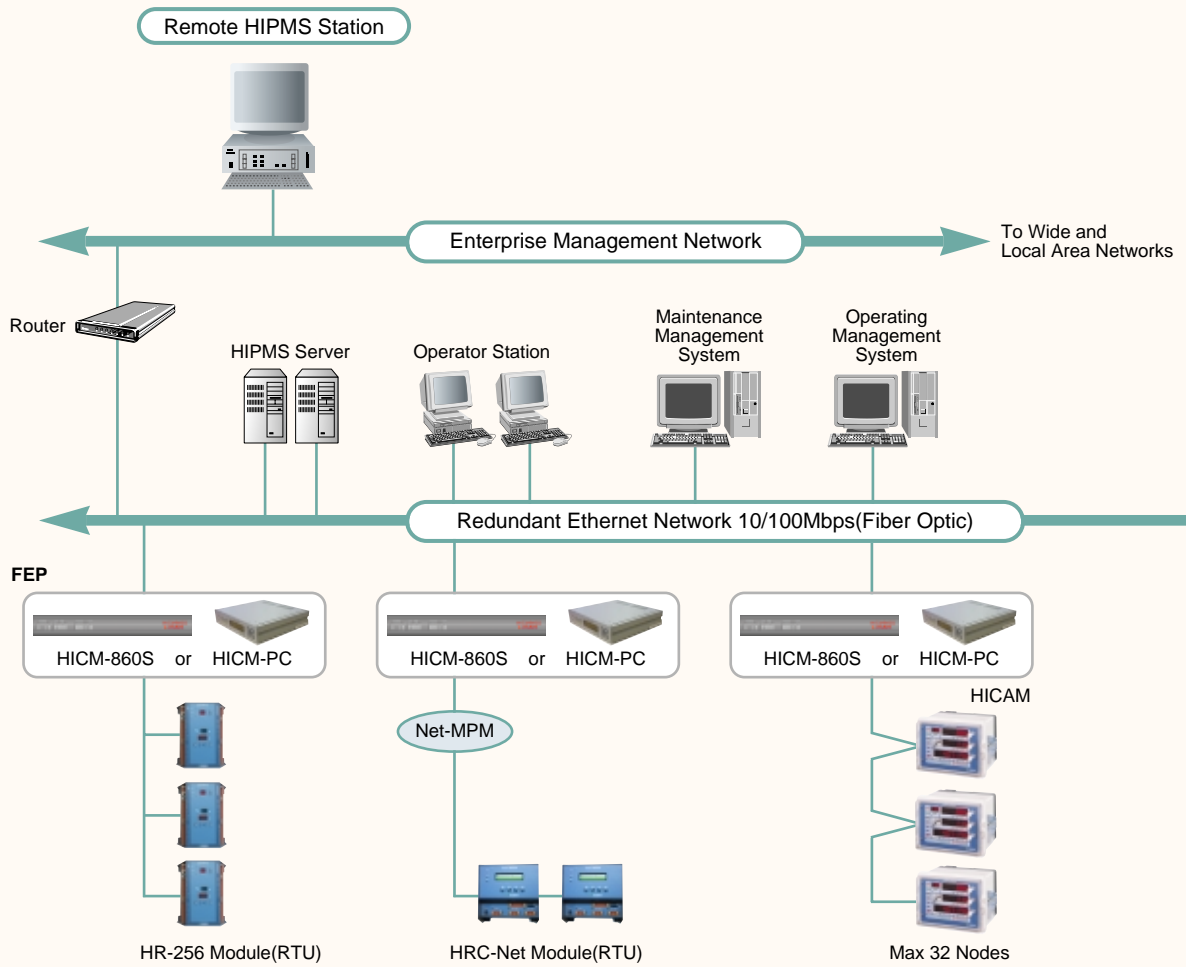
Item		사양
Rating	Current	1 A or 5 A, Burden : Below 0.1 VA/Phase
	Voltage	110 V or 190 V, Burden : Below 0.3 VA/Phase
	Frequency	50 Hz or 60 Hz
Accuracy	Measuring	±0.5 %
	Protection Relaying	±2 %
Temperature	Operation Guarantee	-10 °C ~ 55 °C
	Restoration Guarantee	-25 °C ~ 70 °C
Insulation Resistance	Circuits-Ground	10 MΩ
	Between Circuits	5 MΩ
	Between Contacts	5 MΩ
Voltage Withstand	Power Frequency	AC 60 Hz 2000 V/1 Min
	Lightning Impulse	1.2/50 μs 5 kV
Overland Withstand	Current Circuit	Rating Current × 3 : 3 hours / Rating Current × 20 : 2 sec
	Voltage Circuit	Rating Voltage × 3 : 3 hours
	Control Power	Rating Voltage × 1.3 : 3 hours
Control Power Interruption		Maximum 300 ms
Control Power		AC/DC 95 V ~ 250 V 50/60 Hz
Standards		IEC 60255 / KEMC 1120 / IEC 61000-4
Communication Type		RS-485 Multi Drop
Protocol		HD-BUS / DNP 3.0
Size		202.5 (W) × 156 (H) × 251.5 (D)
Weight		4.5 kg

I / O Point

Item			Point	Remark
Input	AI	Voltage	4	Default
	AI	Current	4	Default
	DI		5	Default
Output	DO		7	Default(R1~R7) (21~34) 31, 32(R6) : Remote CB On 33, 34(R7) : Remote CB Off

Power Management System Using HIMAP & HICAM (HIPMS)

System Configuration



Display Configuration



Fault Analysis



Network Status



System Configuration



Remote Setting



Alarm



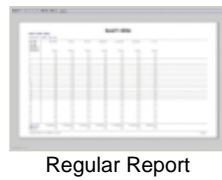
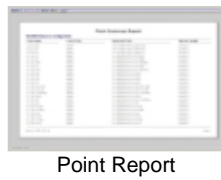
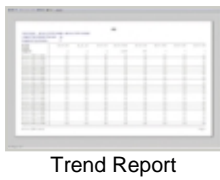
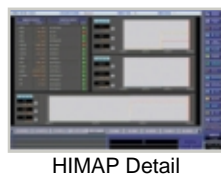
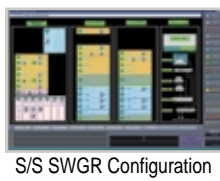
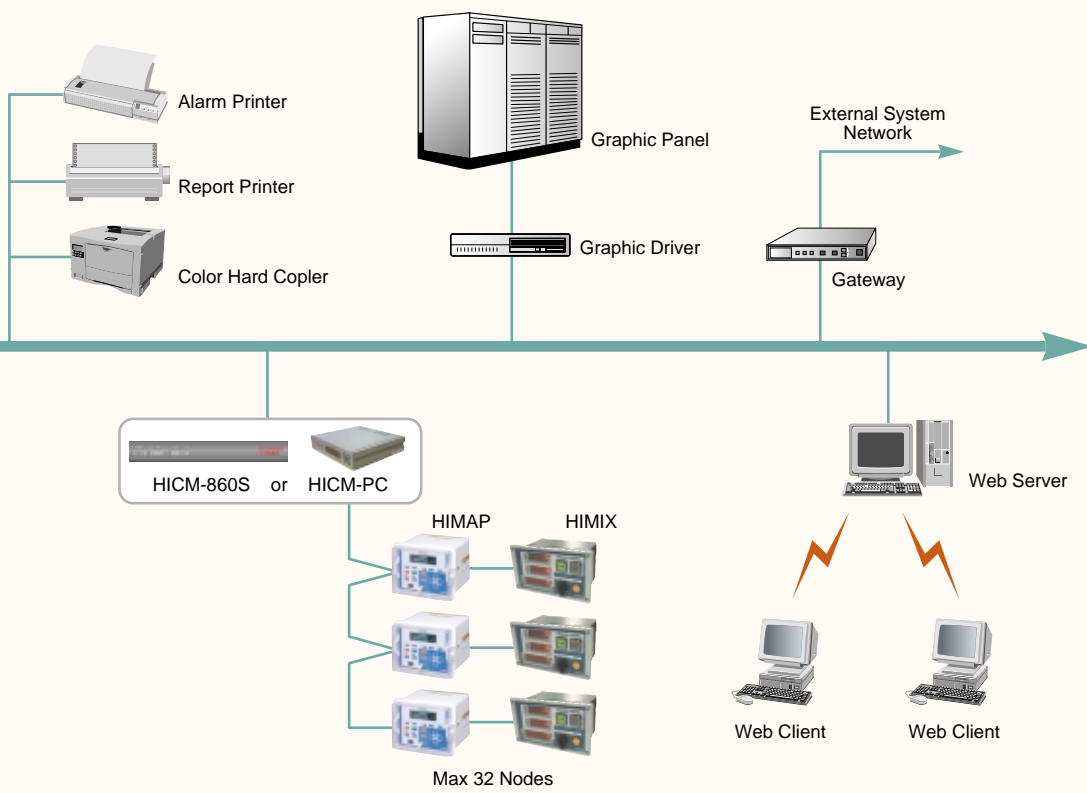
System Diagram



Report Menu



HIMAP Menu



Setting Range

FI Type

OCR (50/51)	Mode	Instant	Definite	Inverse, Very Inverse, Extremely Inverse
	Current	(1~18) × In (0.1 A Step)		(0.2~2.4) × In (Time Delay) (0.1 A Step)
	Time	Below 0.05 sec	0.05~10.0 sec (0.01 sec Step)	0.05~10.0 Tap (Time Delay) (0.01 Step)
OCGR (50G/51G)	Mode	Instant	Definite	Inverse, Very Inverse, Extremely Inverse
	Current	(0.1~12) × In (0.1A Step)		(0.02~1.0) × In (Time Delay) (0.1 A Step)
	Time	Below 0.05 sec	0.05~10.0 sec (0.01 sec Step)	0.05~10.0 Tap (Time Delay) (0.01 Step)
UVR (27R)	Mode	-	Definite	-
	Voltage	-	(0.2~0.5) × Vn (0.1 V Step)	-
	Time	-	0.1~10.0 sec (0.1 sec Step)	-
UVR (27M)	Mode	-	Definite	-
	Voltage	-	(0.5~1.0) × Vn (0.1 V Step)	-
	Time	-	0.1~10.0 sec (0.1 sec Step)	-
UVR (27S)	Mode	-	Definite	-
	Voltage	-	(0.5~1.0) × Vn (0.1 V Step)	-
	Time	-	0.1~10.0 sec (0.1 sec Step)	-
POR	47P	Mode	-	Definite
		Voltage	-	(0.5~1.0) × Vn (0.1 V Step)
		Time	-	0.1~10.0 sec (0.1 sec Step)
	47N	Mode	-	Definite
		Voltage	-	(0.02~0.5) × Vn (0.1 V Step)
		Time	-	0.1~10.0 sec (0.1 sec Step)
OVR (59)	Mode	-	Definite	Inverse
	Voltage	-	(1.1~1.45) × Vn (0.1 V Step)	
	Time	-	0.1~10.0 sec (0.1 sec Step)	0.05~10.0 Tap (Time Delay) (0.01 Step)
OVGR (64)	Mode	Instant	-	Inverse
	Voltage	(0.11~0.5) × Vn (0.1 V Step)		
	Time	Below 0.05 sec	-	0.05~10.0 Tap (Time Delay) (0.01 Step)
DGR (67GD)	Mode	Definite		
	Current	(0.04~0.4) × In (0.1 A Step)		
	Voltage	(0.1~0.2) × Vn (0.1 V Step)		
	Time	0.1~10.0 sec (0.1 sec Step)		
	Angle	10° ~ 45° (1° Step)		
SGR (67GS)	Mode	Definite		
	Current	1~10 mA (0.1 mA Step)		
	Voltage	(0.1~0.2) × Vn (0.1 V Step)		
	Time	0.1~10.0 sec (0.1 sec Step)		
	Angle	45° ~75° (1° Step)		

※ - In: Rating Current, Vn: Rating Voltage

- Example HIMAP Setting; In: 5 A, OCR: (1~18) × In 5~90 A

M Type

MPR	THR (49)	Thermal Current	(0.1~1.2) × In (0.1 A Step)		
		Cold Limit	0.5~180 sec (0.1 sec Step)		
		Hot Limit	0.5~180 sec (0.1 sec Step)		
		τ_C/τ_h	0.1~20 (0.1 Step)		
	51LR	Start Current	(0.2~14.4) × In (0.1 A Step)		
		Start Time	1.0~60.0 sec (0.1 sec Step)		
		Rocked Rotor Current	(0.2~6.0) × In (0.1 A Step)		
		Rocked Rotor Time	1.0~4.0 sec (0.1 sec Step)		
	OCR (50)	Mode	Instant	Definite	
		Current	(0.2~18) × In (0.1 A Step)		
		Time	Below 0.05 sec	0.05~10.0 sec (0.01 sec Step)	
	50H	Mode	Instant		
		Current	(0.1~4.0) × In (0.1 A Step)		
		Time	Below 0.05 sec		
	UCR (37)	Mode	Definite		
		Maximum Current	(0.04~0.5) × In (0.1 A Step)		
		Minimum Current	(0.04~0.5) × In (0.1 A Step)		
		Time	0.1~10.0 sec (0.1 sec Step)		
	NSR (46)	Mode	Definite		
		Current	(0.1~0.5) × In (0.1 A Step)		
		Time	0.1~10.0 sec (0.1 sec Step)		
	NCHR (66)	Allow Time	1~60 min (1 min Step)		
		Number of Start	1~16		
		Limit Time	1~60 min (1 min Step)		
Thermal Limit(θ_d)		40~100% (1% Step)			
87M	Mode	Instant	Definite		
	Current	(0.04~0.4) × In (0.1 A Step)			
	Time	Below 0.05 sec	0.05~10.0 sec (0.01 sec Step)		
OCGR (50G/51G)	Mode	Instant	Definite	Inverse, Very Inverse, Extremely Inverse	
	Current	(0.1~12) × In (0.1 A Step)		(0.02~1.0) × In (Time Delay) (0.1 A Step)	
	Time	Below 0.05 sec	0.05~10.0 sec (0.01 sec Step)	0.05~10.0 Tap (Time Delay) (0.01 Step)	
DGR (67GD)	Mode	Definite			
	Current	(0.04~0.4) × In (0.1 A Step)			
	Voltage	(0.1~0.2) × Vn (0.1 V Step)			
	Time	0.1~10.0 sec (0.1 sec Step)			
	Angle	10° ~45° (1° Step)			
SGR (67GS)	Mode	Definite			
	Current	1~10 mA (0.1 mA Step)			
	Voltage	(0.1~0.2) × Vn (0.1 V Step)			
	Time	0.1~10.0 sec (0.1 sec Step)			
	Angle	45° ~75° (1° Step)			

※ - In: Rating Current, Vn: Rating Voltage

- Example HIMAP Setting; In: 5 A, OCR: (1~18) × In 5~90 A

Setting Range

T Type

DFR (87T)	Mode	Instant		
	Prim. Current	$(0.2\sim 1.2) \times I_n$ (0.1 A Step)		
	Sec. Current	$(0.2\sim 1.2) \times I_n$ (0.1 A Step)		
	Inst. Ratio	500~1500% (1% Step)		
	Diff. Ratio	20~50% (1% Step)		
	Bias Ratio	20~50% (1% Step)		
	2nd Harmonic Ratio	10~30% (1% Step)		
	TR Type	Dy1, Dy11, Yd1, Yd11,, Dd0, Yy0		
	Zero Comp.	Enable, Disable		
	Time	Below 0.05 sec		
OCR (50P/51P)	Mode	Instant	Definite	Inverse, Very Inverse, Extremely Inverse
	Current	$(1\sim 18) \times I_n$ (0.1 A Step)		$(0.2\sim 2.4) \times I_n$ (Time Delay) (0.1 A Step)
	Time	Below 0.05 sec	0.05~10.0 sec (0.01 sec Step)	0.05~10.0 Tap (Time Delay) (0.01 Step)
OCSR (50S/51S)	Mode	Instant	Definite	Inverse, Very Inverse, Extremely Inverse
	Current	$(1\sim 18) \times I_n$ (0.1 A Step)		$(0.2\sim 2.4) \times I_n$ (Time Delay) (0.1 A Step)
	Time	Below 0.05 sec	0.05~10.0 sec (0.01 sec Step)	0.05~10.0 Tap (Time Delay) (0.01 Step)
OCGR (50G/51G)	Mode	Instant	Definite	Inverse, Very Inverse, Extremely Inverse
	Current	$(0.1\sim 12) \times I_n$ (0.1 A Step)		$(0.02\sim 1.0) \times I_n$ (Time Delay) (0.1 A Step)
	Time	Below 0.05 sec	0.05~10.0 sec (0.01 sec Step)	0.05~10.0 Tap (Time Delay) (0.01 Step)
DGR (67GD)	Mode	Definite		
	Current	$(0.04\sim 0.4) \times I_n$ (0.1 A Step)		
	Voltage	$(0.1\sim 0.2) \times V_n$ (0.1 V Step)		
	Time	0.1~10.0 sec (0.1 sec Step)		
	Angle	10° ~45° (1° Step)		
SGR (67GS)	Mode	Definite		
	Current	1~10 mA (0.1 mA Step)		
	Voltage	$(0.1\sim 0.2) \times V_n$ (0.1 V Step)		
	Time	0.1~10.0 sec (0.1 sec Step)		
	Angle	45° ~75° (1° Step)		

※ - I_n : Rating Current, V_n : Rating Voltage

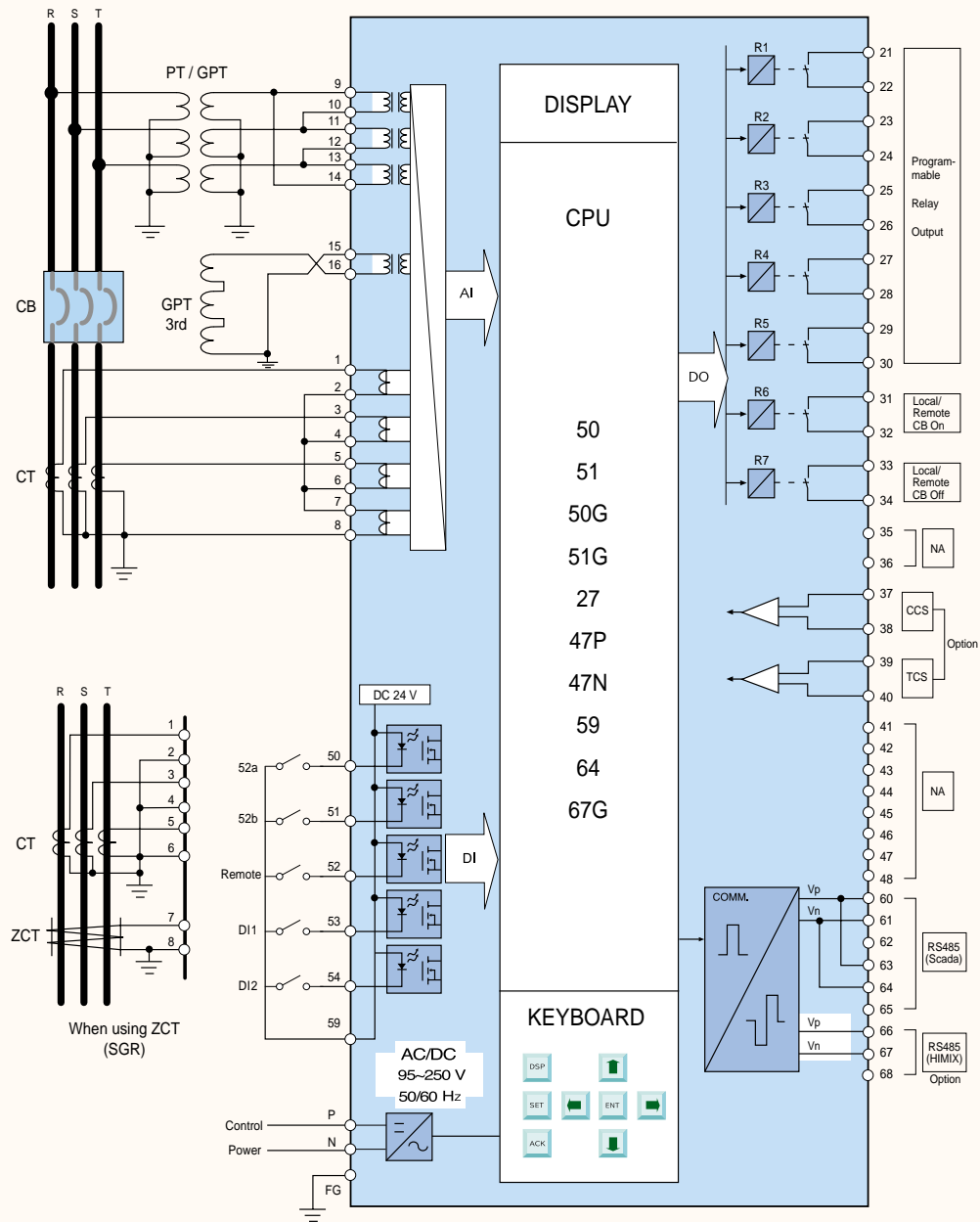
- Example HIMAP Setting: I_n : 5 A, OCR: $(1\sim 18) \times I_n$ 5~90 A

SC Type

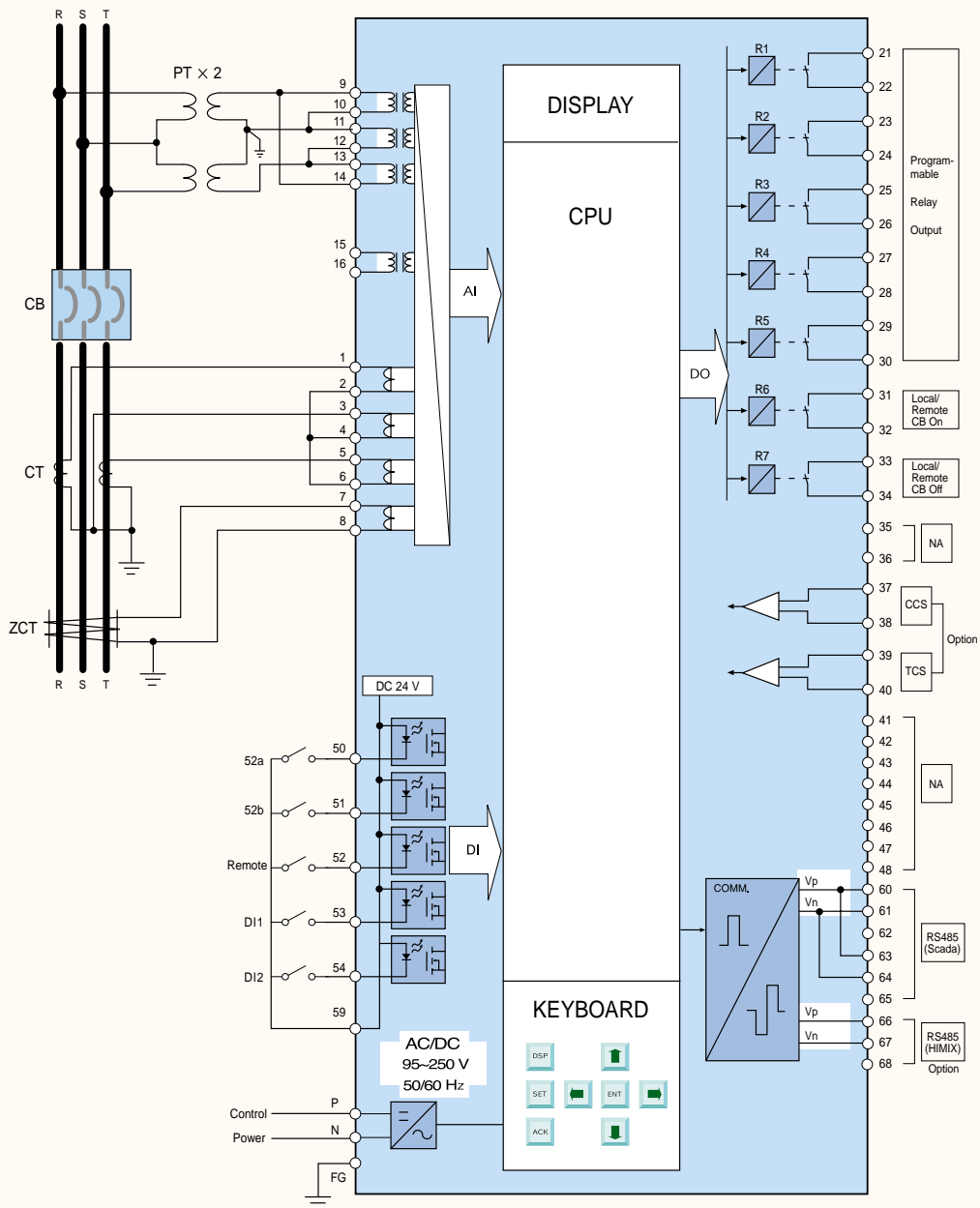
25A	Mode	Definite
	Time	0.1~15.0 sec (0.1 sec Step)
	Voltage	$(0.02\sim0.7) \times V_n$ (0.1 V Step)
	Phase	0° ~100° (1° Step)
	Frequency	0.01~5.0 Hz (0.01 Hz Step)
25B	Mode	Definite
	Time	0.1~15.0 sec (0.1 sec Step)
	Voltage	$(0.02\sim0.7) \times V_n$ (0.1 V Step)
	Phase	0° ~100° (1° Step)
	Frequency	0.01~5.0 Hz (0.01 Hz Step)
UVR (27S)	Mode	Definite
	Voltage	$(0.5\sim1.0) \times V_n$ (0.1 V Step)
	Time	0.1~10.0 sec (0.1 sec Step)

Connection Diagram

HIMAP-FI(3CT, 3PT)

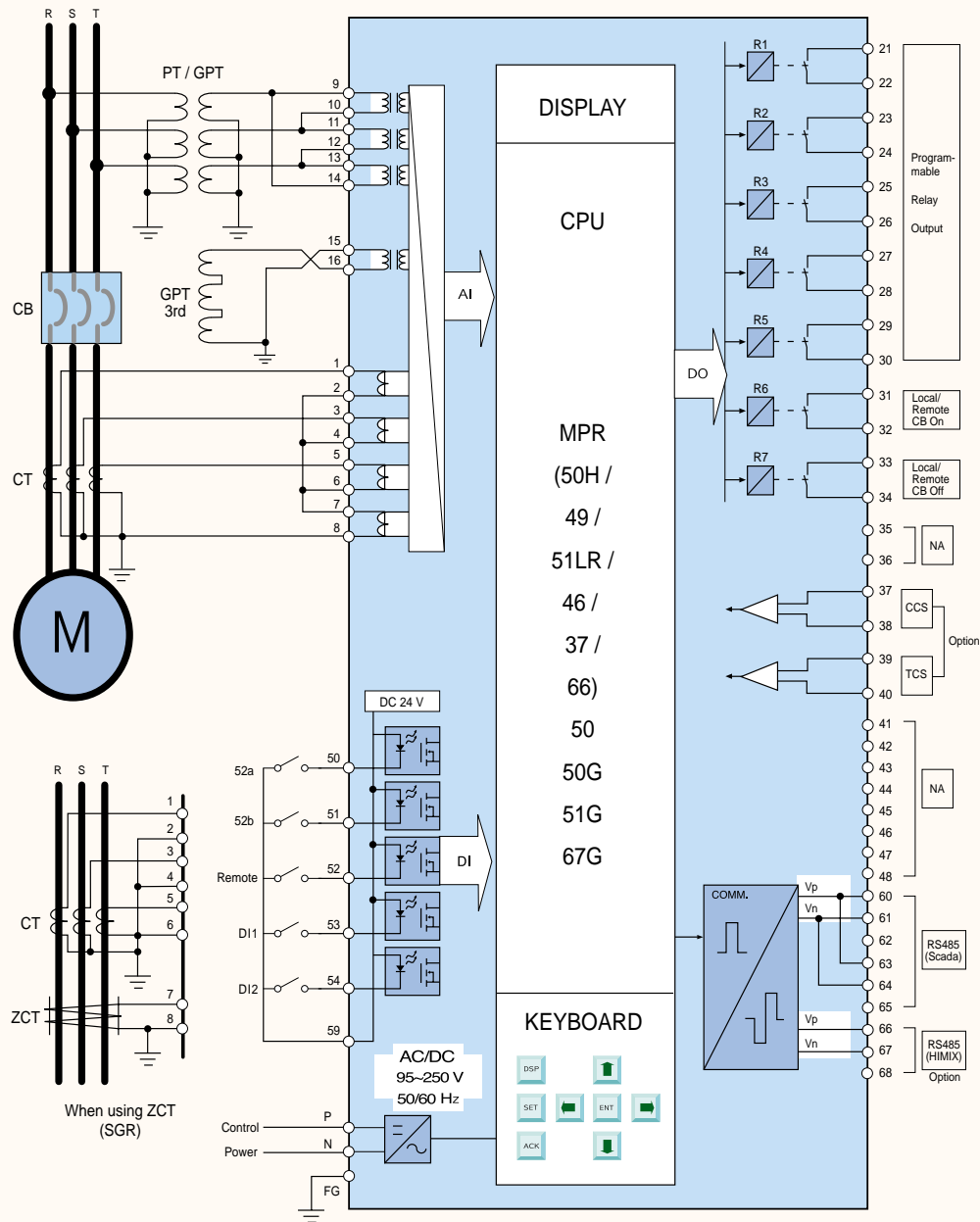


HIMAP-FI/M(2CT, 2PT)

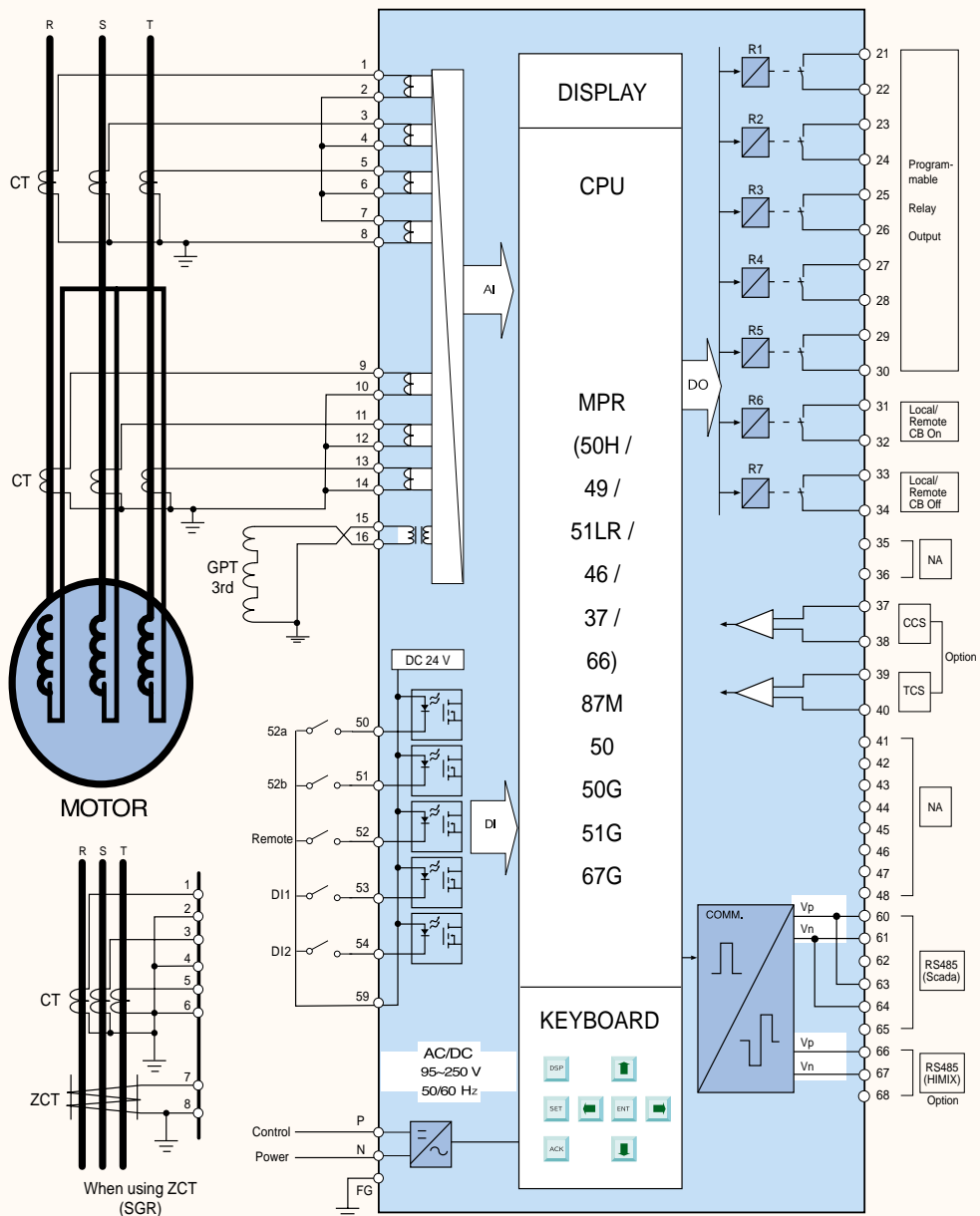


Connection Diagram

HIMAP-M

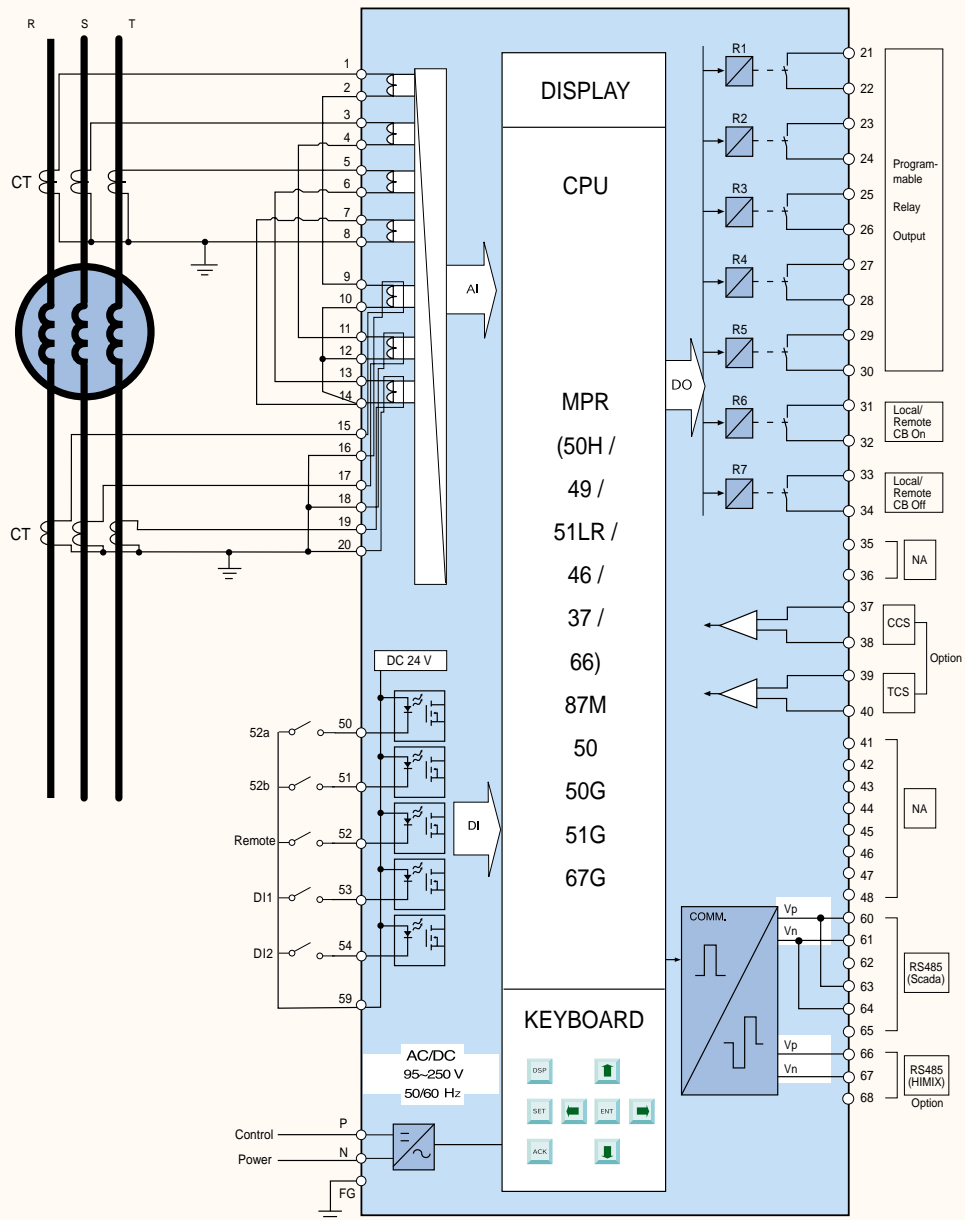


HIMAP-M(87M)(Self-balancing Type)

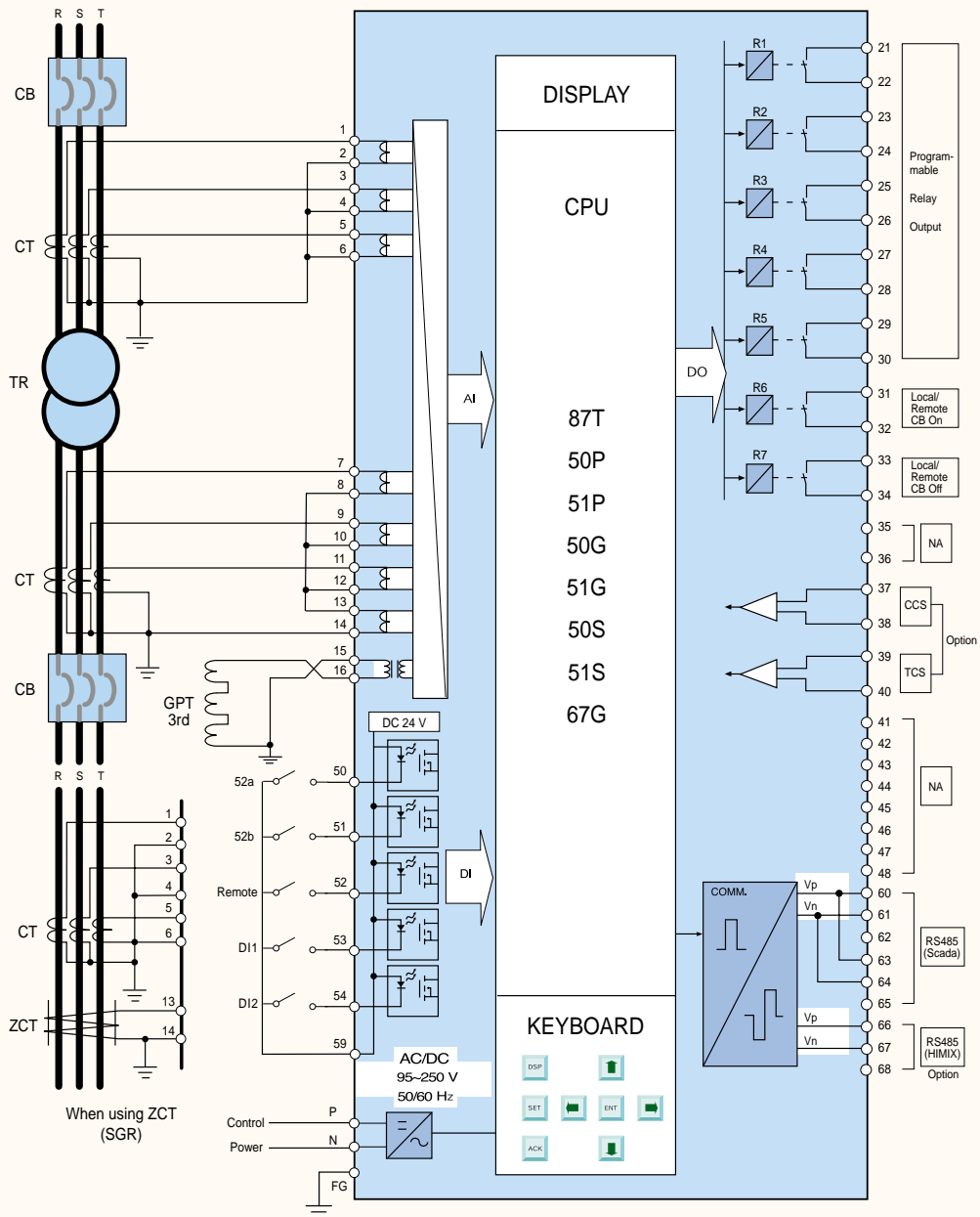


Connection Diagram

HIMAP-M(87M)(Differential Type)

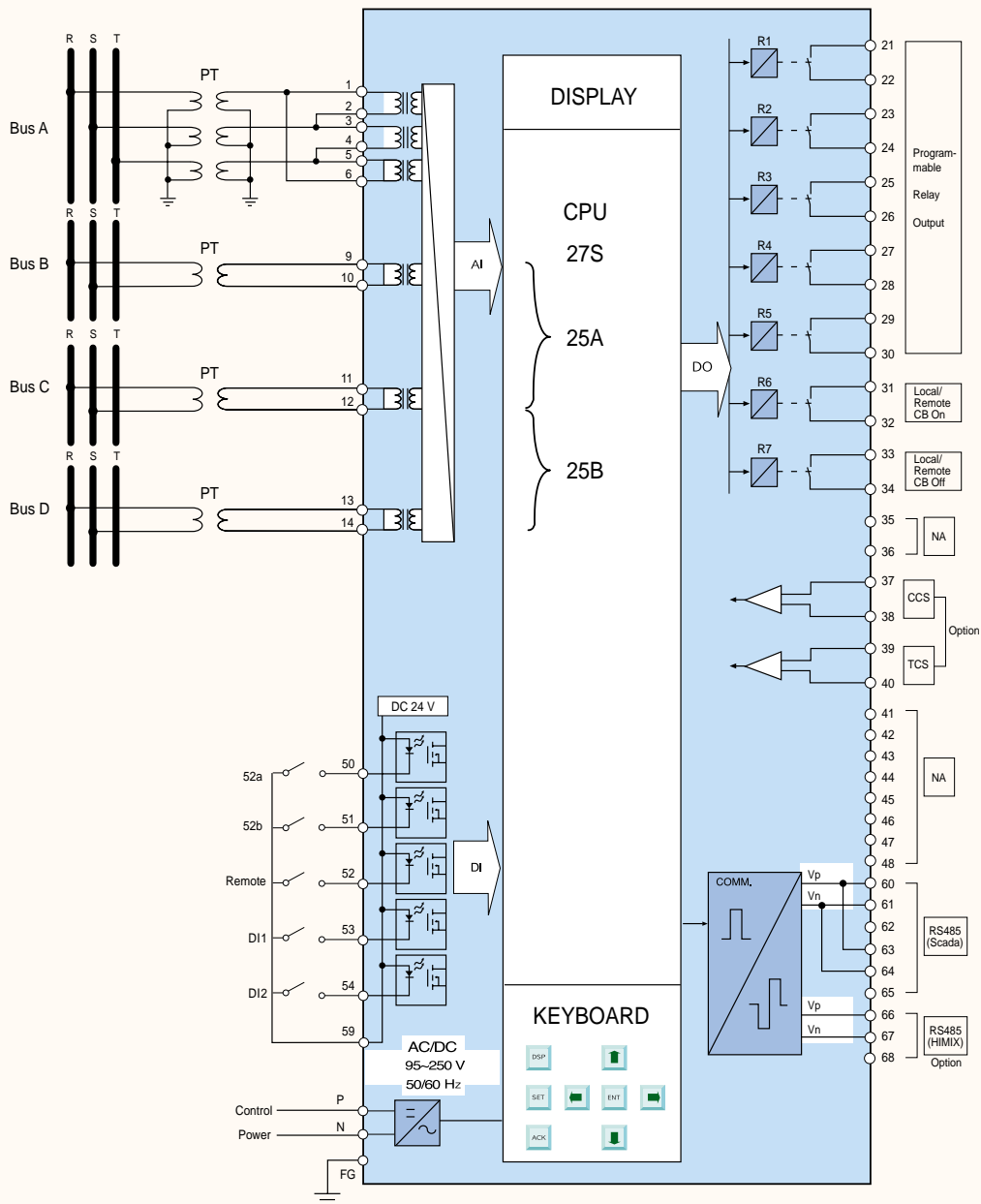


HIMAP-T



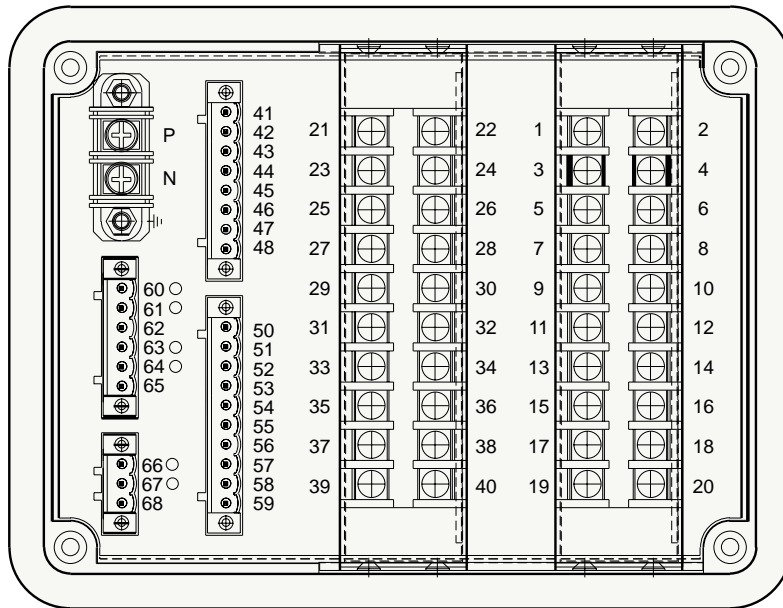
Connection Diagram

HIMAP-SC



Terminal Block Pin Specification

HIMAP-FI / M Type



Control Power Terminal

P	(+)
N	(-)
— —	FG

Communication Terminal

60	Vp
61	Vn
62	S.G
63	Vp
64	Vn
65	

HIMIX Communication Terminal

66	Vp
67	Vn
68	N.A

41	N.A
42	
43	
44	
45	
46	
47	
48	

Digital Input

50	52a
51	52b
52	Remote
53	D/I 1
54	D/I 2
55	N.A
56	
57	
58	Common
59	

Digital Output

21	R1	22
23	R2	24
25	R3	26
27	R4	28
29	R5	30
31	R6(CB On)	32
33	R7(CB Off)	34
35	N.A	36
37	CCS	38
39	TCS	40

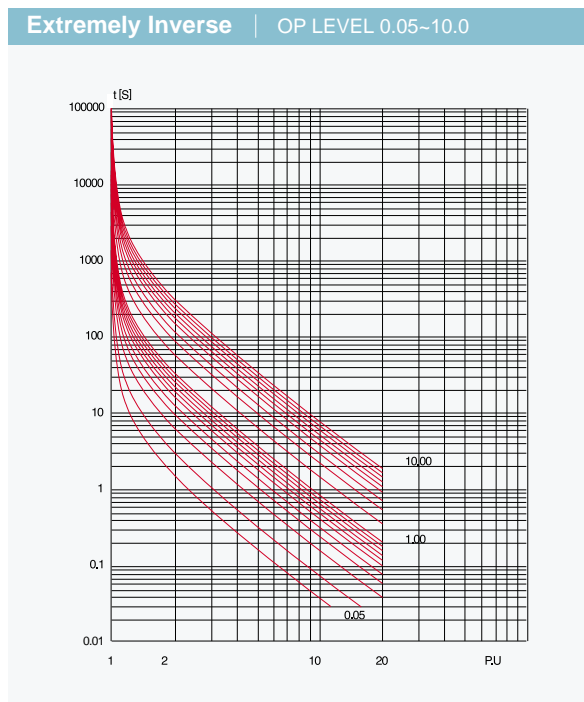
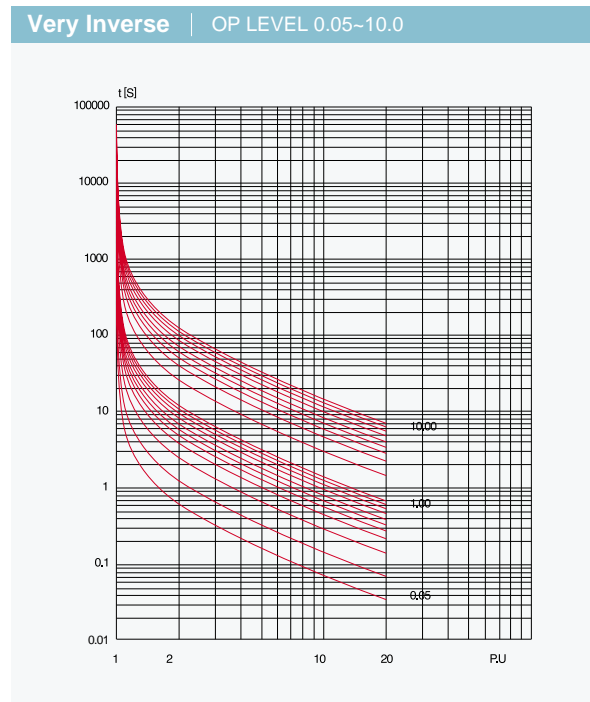
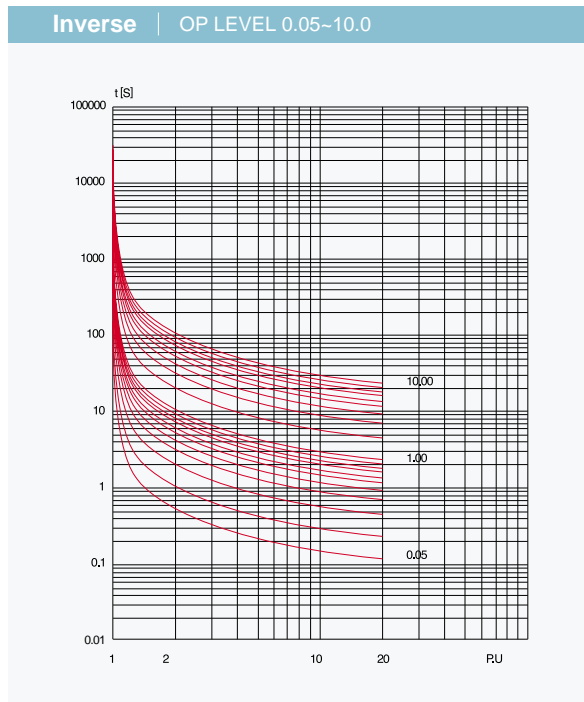
Analog Input

1	Ia	2
3	Ib	4
5	Ic	6
7	Io	8
9	Vab	10
11	Vbc	12
13	Vca	14
15	Vo	16
17	N.A	18
19	N.A	20

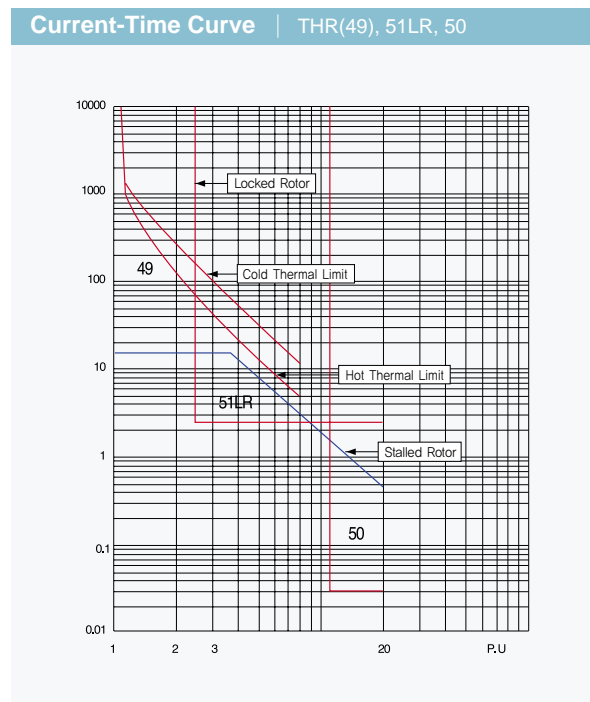
Terminal No.	Description	Application
50	CB On Status 52a	Fixed
51	CB Off Status 52b	Fixed
52	Remote Input	Fixed
53	General DI	Variable
54	General DI	Variable
21~22	R1	Programmable Relay Output
23~24	R2	
25~26	R3	
27~28	R4	
29~30	R5	
31~32	R6(CB On)	Fixed
33~34	R7(CB Off)	Fixed
35~36	N.A	N.A
37~38	CCS	Fixed
39~40	TCS	Fixed

Characteristic Curve

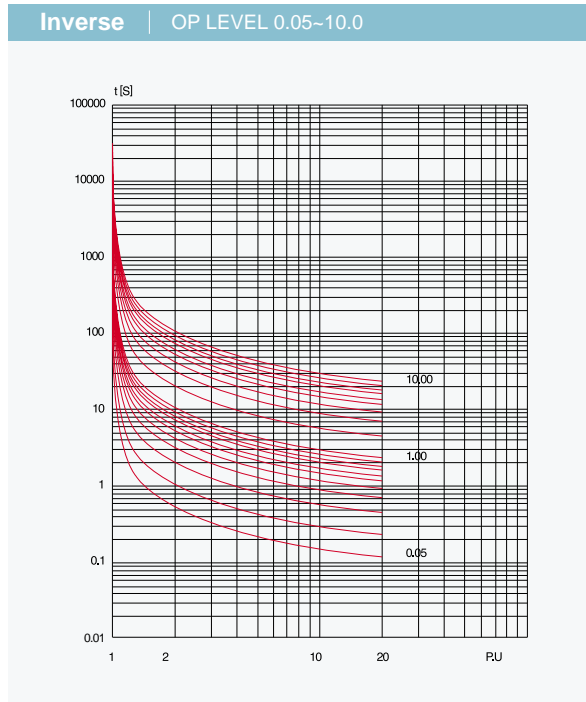
OCR & OCGR



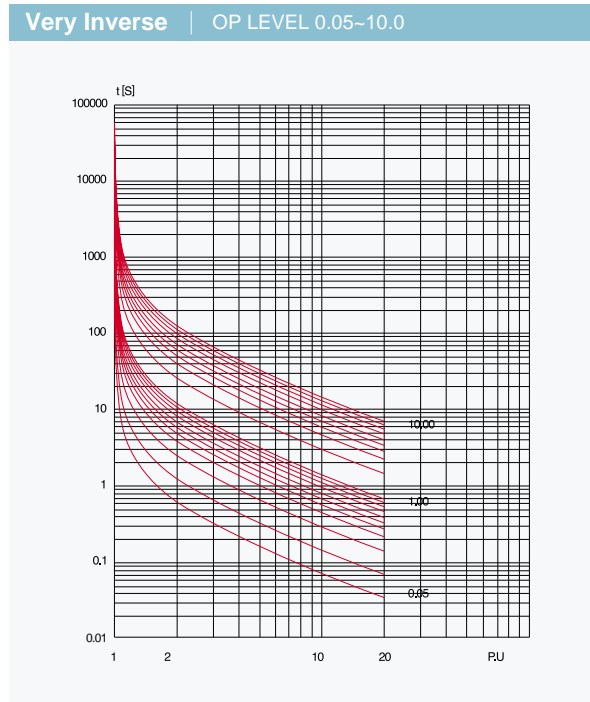
MPR



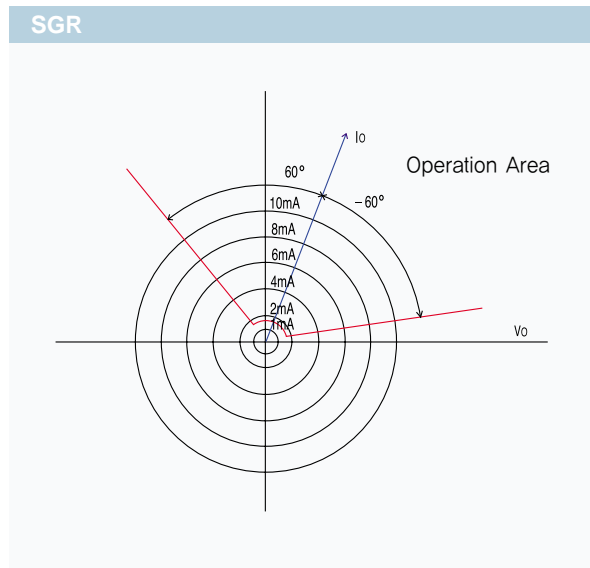
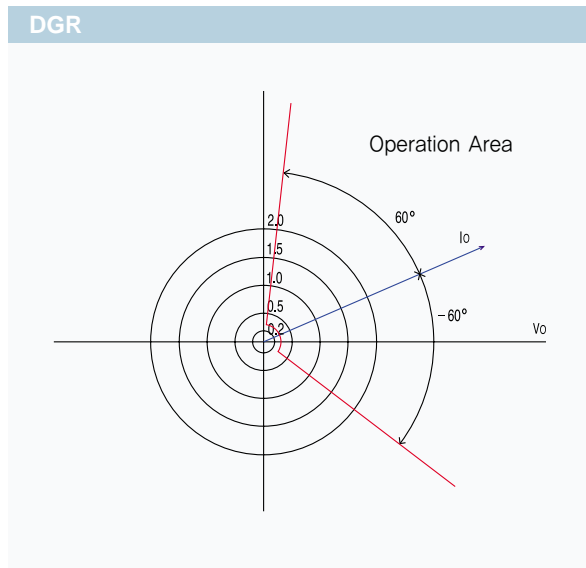
OVR



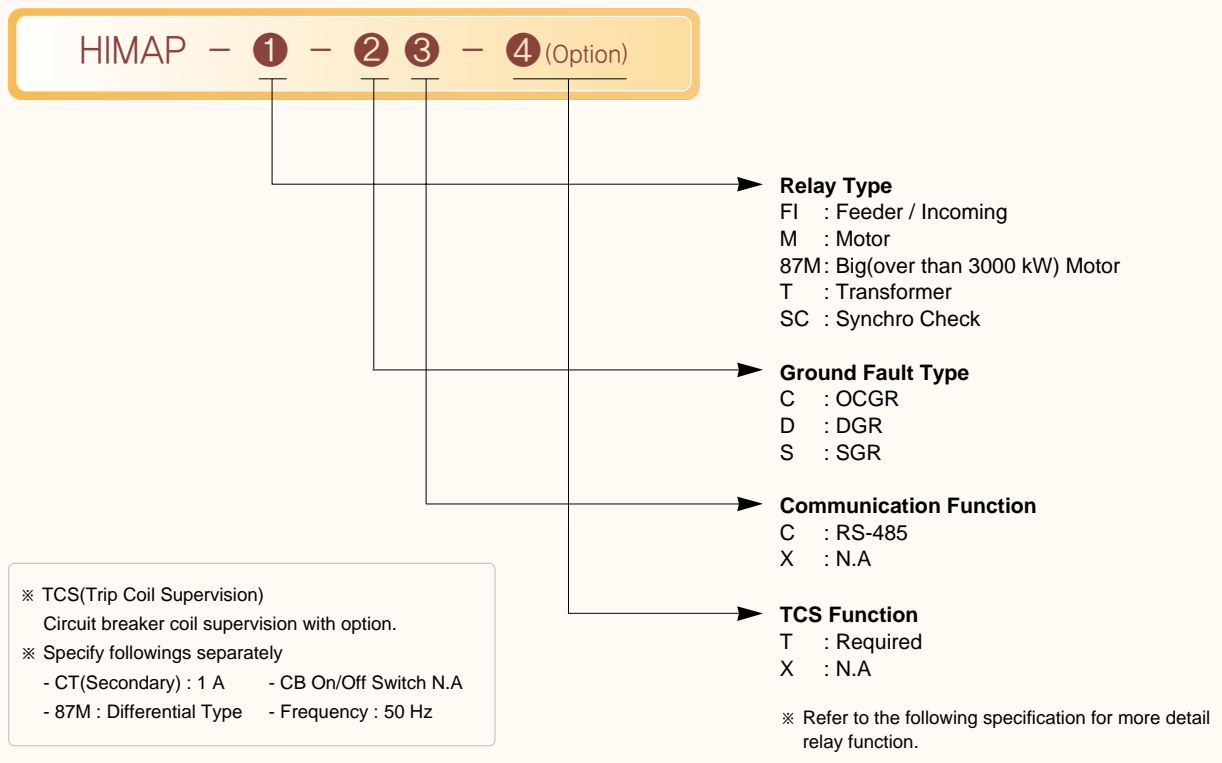
OVGR



DGR / SGR



Order Form



Relay Function

Table 1 (FI)

Item	OCR	OCGR	DGR	SGR	OVR	UVR	OVGR	PSR
C	●	●			●	●	●	●
D	●		●		●	●	●	●
S	●			●	●	●	●	●

Table 2 (M)

Item	MPR	OCGR	DGR	SGR
C	●	●		
D	●		●	
S	●			●

Table 3 (87M)

Item	87M	MPR	OCGR	DGR	SGR	Remark
C	●	●	●			* 87M Self balancing() Differential()
D	●	●		●		
S	●	●			●	

Table 4 (T)

Item	DFR	OCR P	OCR S	OCGR	DGR	SGR
C	●	●	●	●		
D	●	●	●		●	
S	●	●	●			●

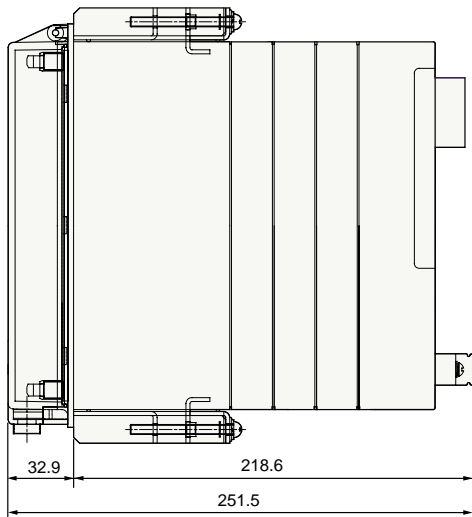
Ordering Example

HIMAP-M-SC-X
 M : Motor Protection
 S : SGR(None grounding sys.)
 C : SCADA Communication
 X : TCS N.A

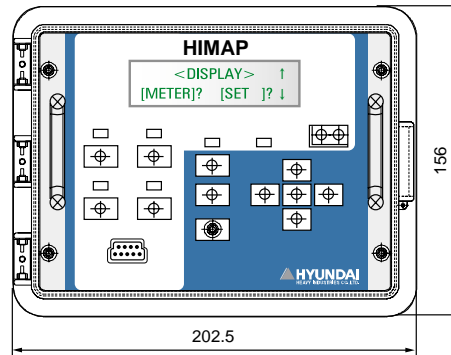
HIMAP-FI-CC-T
 FI : Feeder Protection
 C : OCGR
 C : SCADA Communication
 T : TCS required

View & Dimension

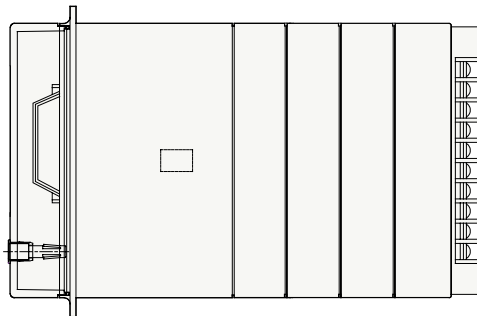
Weight 4.3 Kg



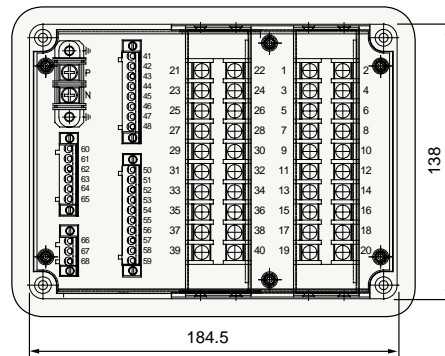
Top View



Front View



Side View



Rear View



Panel Cut-out Dimension

Hyundai Intelligent Communication & Measuring Device

HICAM

HICAM(Hyundai Intelligent Communication and Measuring Device) has integrated as many as 14 analog meters in one body. The measuring accuracy is below $\pm 0.5\%$ at rating.

For power monitoring system connection, HICAM has RS485 communication port, communication control device (HICM series) and support modbus protocol.

Remote CB On/Off control is possible by the command from power monitoring system.





1 Accuracy

±0.5% at rating

2 Voltage / Current Input

CT: 0.1~30 A / PT: 10~380 V

3 Various Measuring

14 measuring points

4 Compact Size and Display

- Various indicator and measuring display
- Size: 202.5 (W) × 156 (H) × 186 (D)

5 Power Management System Connection

- RS485 HD-Bus
- Modbus protocol by communication control device (HICM Series)
- Optic fiber communication (Option)

Display

Front View



I / O Point

Item		Point	Remark
Input	AI Voltage	4	Default
	AI Current	4	Default
	DI	8	Default(41~50)
Output	DO	5	Default(31~40) 37, 38(D04) : Remote CB On 39, 40(D05) : Remote CB Off 31~36(D01~D03) use current demand output.

Specification

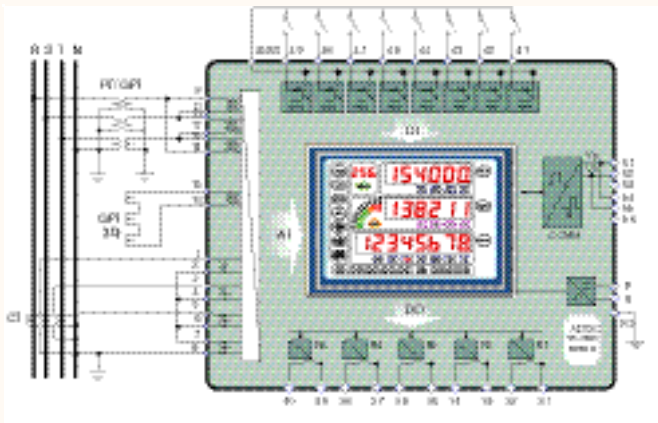
Item		Specification
Rating	Current	1 A or 5 A(0.1 A~30.0 A)
	Voltage	110 V or 190 V(10 V~380 V)
	Frequency	50 Hz or 60 Hz
Accuracy	Measuring	± 0.5 %
Temperature	Operation Guarantee	-10 ~ 55
	Restoration Guarantee	-25 ~ 70
Insulation Resistance	Circuit-Ground	100 MΩ
	Between Circuits	100 MΩ
	Between Contacts	100 MΩ
Voltage Withstand	Power Frequency	AC 60 Hz 2,000V/1 Min
	Lightning Impulse	1.2/50 μs 5 kV
Overland Withstand	Current Circuit	Rating Current × 3 : 3 hours / Rating Current × 20 : 1 sec
	Voltage Circuit	Rating Voltage × 3 : 3 hours
	Control Power	Rating Voltage × 1.3 : 3 hours
Control Power		AC 85 ~ 264 V (50 / 60 Hz), DC 90 ~ 120 V
Communication Type		RS – 485 / Multi Drop
Protocol		HD-BUS / Modbus
Standards		KEMC1110, IEC1036
Size		202.5 (W) × 156 (H) × 186 (D)
Weight		1.5 Kg

Measuring

Measuring	Display	Accuracy	Remark
Voltage	0~999999 V	±0.5%	Line to Line Voltage
Current	0~999999 A	±0.5%	Phase Current
Real Power	0~99999999 kW	±0.5%	
Reactive Power	0~99999999 kvar	±1.0%	
Apparent Power	0~99999999 kVA	±1.0%	
Accumulated Real Energy	0~99999999 kWh	±1.0%	
Accumulated Reactive Energy	0~99999999 kvarh	±1.0%	
Power Factor	-1.0~1.0 PF	±0.5%	
Frequency	45~65 Hz	±0.01 Hz	
Reverse Real Power	0~999999 kW	±1.0%	(-) Sign
Reverse	0~999999 kWh	±1.0%	(-) Sign

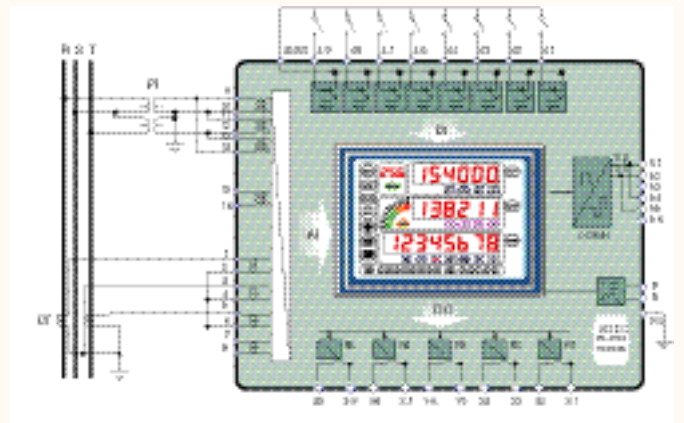
Connection Diagram

3P 4W 3PT_3CT



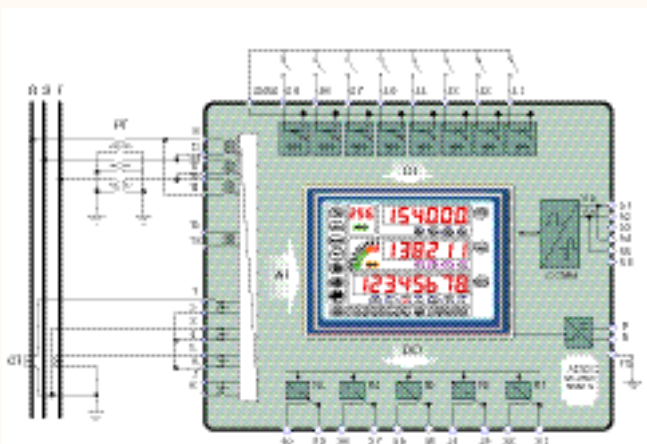
Remote CB On : 37, 38 Terminal
Remote CB Off : 39, 40 Terminal

3P 3W 2PT_2CT



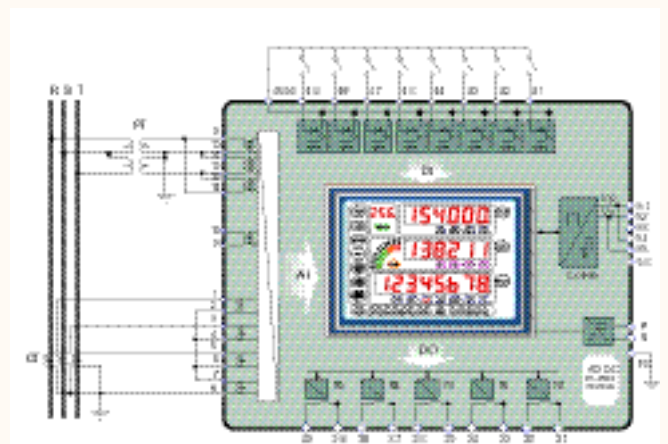
Remote CB On : 37, 38 Terminal
Remote CB Off : 39, 40 Terminal

3P 3W 3PT_3CT



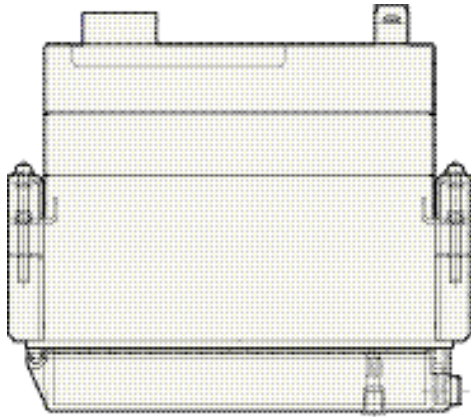
Remote CB On : 37, 38 Terminal
Remote CB Off : 39, 40 Terminal

3P 3W 2PT_3CT

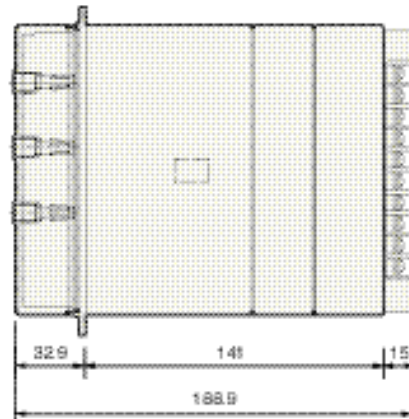


Remote CB On : 37, 38 Terminal
Remote CB Off : 39, 40 Terminal

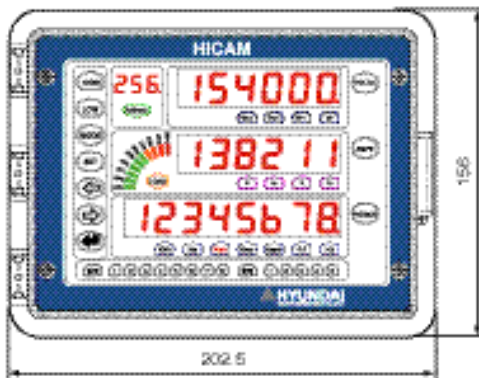
View & Dimension



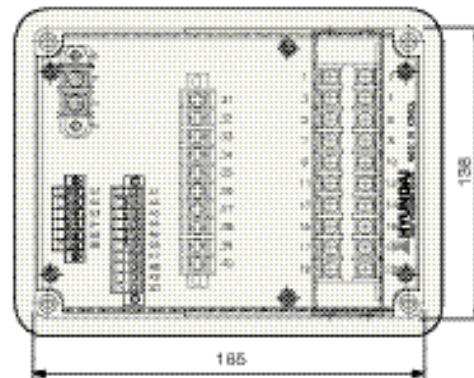
Top View



Right Side View



Front View



Rear View



Panel Cut-out Dimension

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