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RELAY SELECTION GUIDE-MOTOR PROTECTION



SYSTEM CONTROLS & SWITCHGEARS

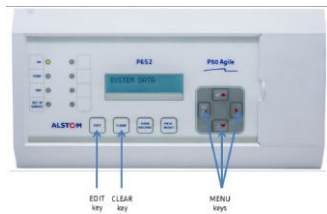


Online Solutions for Electrical Needs



Overview

System controls & switchgears is one of the fastest growing companies in India. Established in 1983, a privately owned company has unrivalled experience in the distribution of electrical products. SCS business covers a broad range of Medium Voltage Switchgears, Low Voltage Switchgears, Power Capacitors, Internal wiring accessories, Lighting, Metal Detectors, Energy Management Products and other products. Over the last 3 decades history, we've developed strong relationships with customers. Our strength lives in all of our people, who have extended our tradition of service and integrity to customers in every location and situation, and who take pride in making us one of the most resilient resources in the products we deal.



Models

- **P253** Basic Motor Protection Relay Medium to Large HP Induction Motors (500KW – 1MW)
(ANSI Code :-50 , 51 , 50N , 51N , 46 , 49 , 50 BF , 64R , 86 , 95 , 68 , 37 , 14 , 48 , 51S , 51LR , 66 , 74)
- **P24NM** is a basic motor protection device with current input only (Non-directional)
(ANSI Code :- 50,50N,51,51N,50/51SEF,68,46,37,49,50BF,66, 48/51LR,86,14)
- **P24DM** is an advanced motor protection device with current and voltage input (Directional)
(ANSI Code :- P24NM+67,67N,32,27,27V,59,59V,59N,47,27Abs,81O,81U,81V, 81df/dt,81RF,81RAV,81R)
- **P241** Motor Protection Relay (40TE Case)
(ANSI Code :- 50 , 51 , 50N , 51N , 67N , 32N/64N , 50BF , 66 , 37 , 46 , 32R , 47 , 49 , 40 , 27/59 , 47 , 29ABS , 59N , 81U , 48/51LR , 51S , 55 , 14 , 26)
- **P242** Motor Protection Relay (60TE Case)
(ANSI Code :- P241 + Funtion Keys (10 No's)
- **P243** Motor Protection Relay (80TE Case)
(ANSI Code :- P242 + 87)

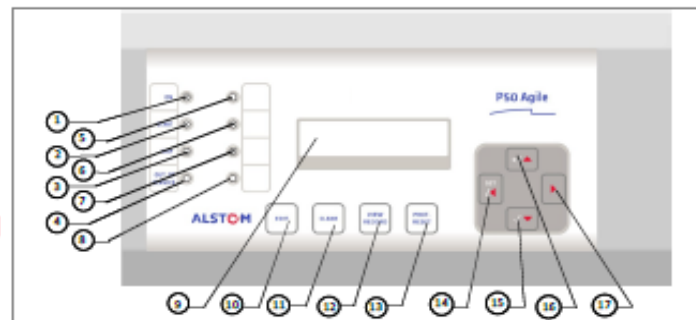
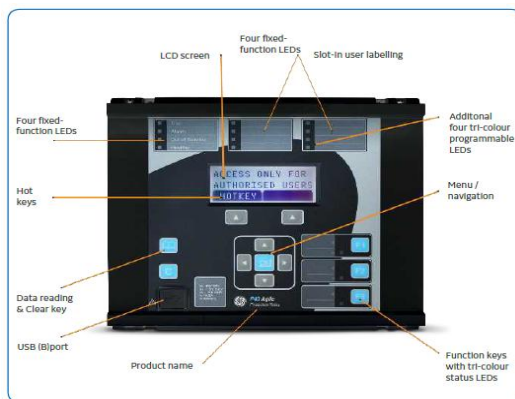
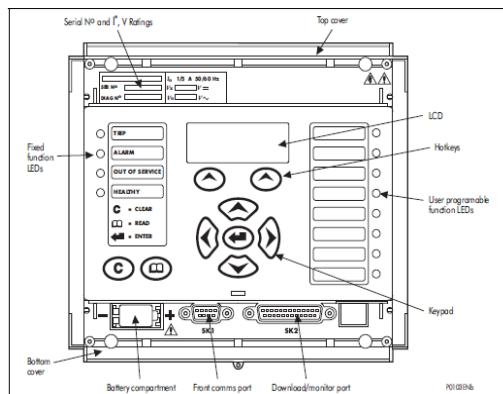
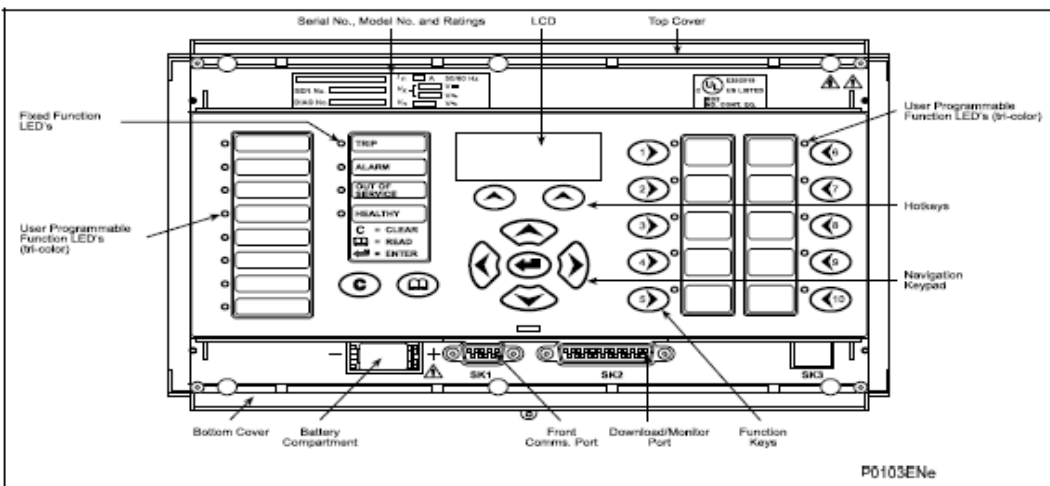


Figure 1: Front panel



SL no	Label	Function
1	ON	Green LED indicates that the LED is in correct working order, and should be ON at all times. It turns red if the unit's self-tests show there is an error in the hardware or software.
2	START	Amber LED flashes when the LED registers an alarm. This may be triggered by a fault, event or maintenance record. The LED flashes until the alarm has been accepted (read) by pressing VIEW RECORD function key, then changes to constantly ON. When the alarm is cleared, the LED switches OFF after pressing CLEAR key.
3	TRIP	Red LED switches ON when the LED issues a trip signal. When the fault is cleared, the LED switches OFF after pressing CLEAR key.
4	OUT OF SERVICE	Amber LED flashes when the LED's protection is unavailable (eg. Setting Error, ADC Error detected by unit's self-test etc)
5	L5	Programmable dual colour LED
6	L6	Programmable dual colour LED
7	L7	Programmable dual colour LED
8	L8	Programmable dual colour LED
9	LCD Display	The LCD display is used to view the settings and parameters of the relay.
10	EDIT	Feather touch key to edit parameter settings.
11	CLEAR	Feather touch key to clear the fault LED indications. Also used to discard the setting changes.
12	VIEW RECORD	Feather touch key to view fault records.
13	PROT. RESET	Feather touch key to reset the hardware. This key to be used along with EDIT key. The relay will reboot when 'PROT. RESET' + 'EDIT' is pressed simultaneously.
14	SET /	Feather touch key SET to save the settings and / is used for navigating through the menu/submenu.
15	+ /▲	Feather touch key (+) is used to INCREASE the values and (▲) is used to change the menu level or change between settings in a particular menu.
16	- /▼	Feather touch key (-) is used to DECREASE the values and (▼) is used to change the menu level or change between settings in a particular menu.

Sr. No	Model of relay	Protocol	Input (Min / Max)	Outputs (Min / Max)	CT INPUTS	VT INPUTS	ANSI Code
A	Agile P253	Modbus/ IEC103/ DNP 3	6	6	4	0	50, 51, 50N, 51N, 46, 49, 50 BF, 64R, 86, 95, 68, 37, 14, 48, 51S, 51LR, 66, 74

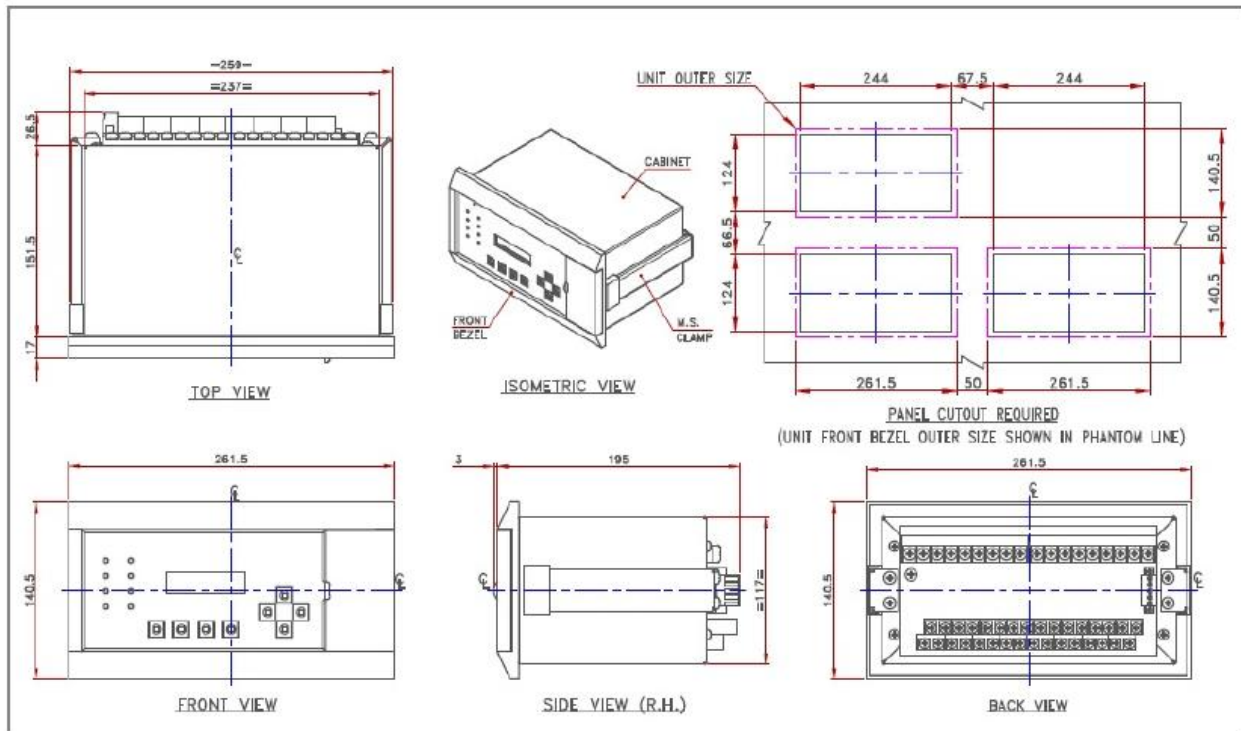
P253 case dimensions

Design Flush mounting case

Weight 3.50 Kg approximate

The P253 hardware comprises of following main components:

- Housing, consisting of a front panel and connections at the rear
- Microcontroller module
- Analogue input module
- Digital input module
- Digital output module
- Communication module
- Power supply unit
- Human machine Interface (HMI) module



Sr. No	Model of relay	Protocol	Input (Min / Max)	Outputs (Min / Max)	CT INPUTS	VT INPUTS	ANSI Code
B	Agile P24NM	Modbus/ IEC103/ IEC 61852	3/8/11/13	4 / 8 / 12	4	0	50,50N,51,51N,50/51SEF,68,46,37,49,50BF,66,48/51LR,86,14

MICOM P24NM case dimensions (20TE/30TE case)

Design

Dimensions in mm (w x h x l) (20TE case)

W: 102.4mm H: 177.0mm D: 243.1mm

Dimensions in mm (w x h x l) (30TE case)

W: 154.2mm H: 177.0mm D: 243.1mm

Mounting Panel or rack

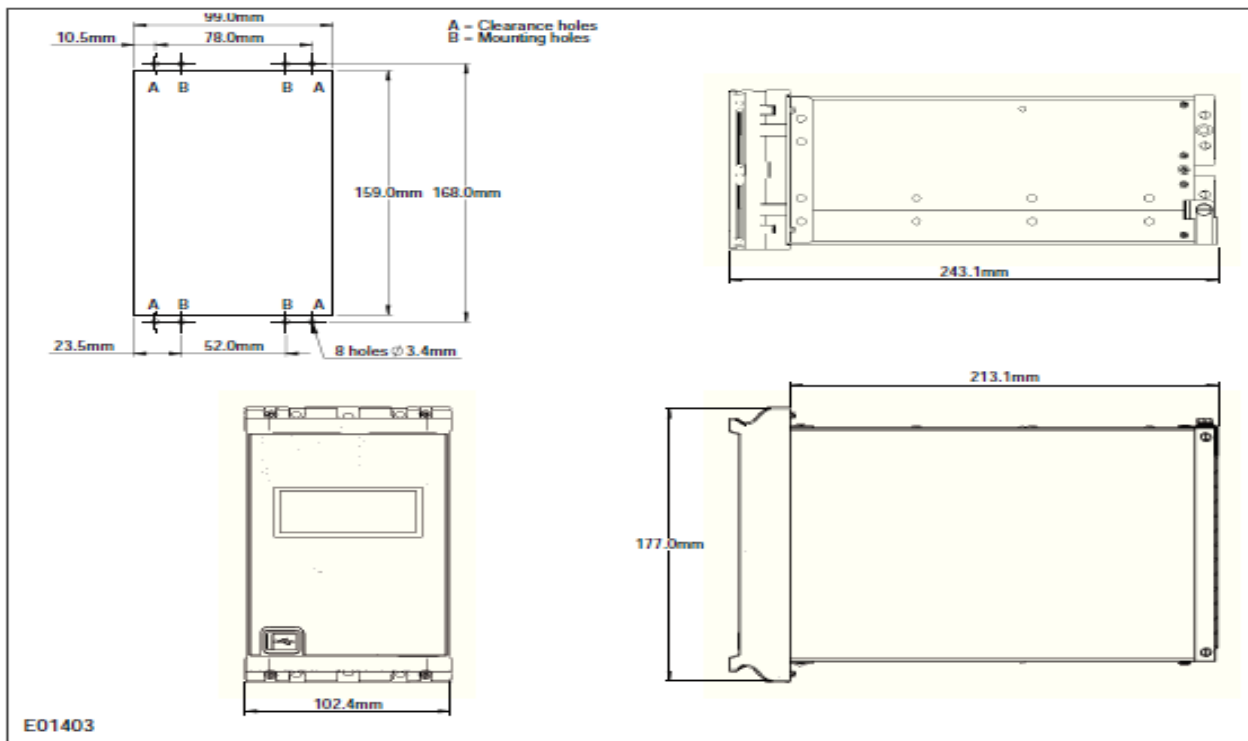
Weight


Weight (20TE case) 2 kg – 3 kg

(depending on chosen options)

Weight (30TE case) 3 kg – 4 kg

(depending on chosen options)



Sr. No	Model of relay	Protocol	Input (Min / Max)	Outputs (Min / Max)	CT INPUTS	VT INPUTS	ANSI Code
C	Agile P24DM 	Modbus/ IEC103/ IEC 61852	3/8/11/13	4 / 8 / 12	4	4	P24NM+67,67N,32,27,27V,59,59V,59N,47,27Abs,81O,81U,81V,81df/dt,81RF,81RAV,81R,

MICOM P24DM case dimensions (30TE/20TE case)

Design

Dimensions in mm (w x h x l) (20TE case)

W: 102.4mm H: 177.0mm D: 243.1mm

Dimensions in mm (w x h x l) (30TE case)

W: 154.2mm H: 177.0mm D: 243.1mm

Mounting Panel or rack

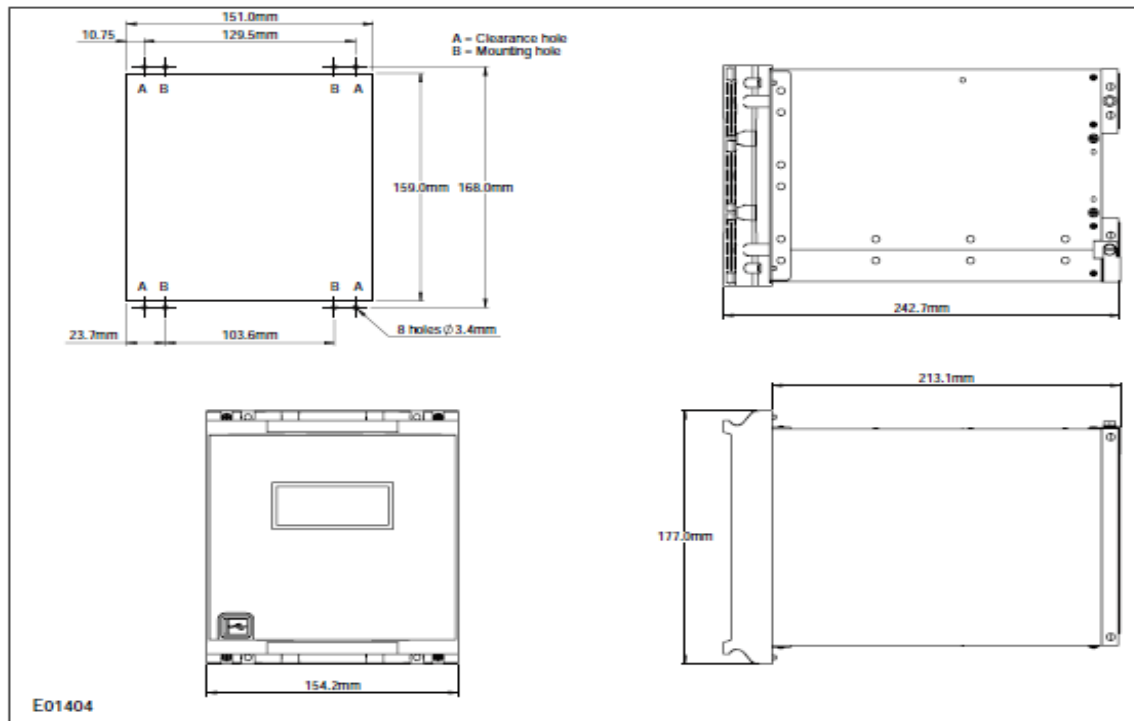
Weight

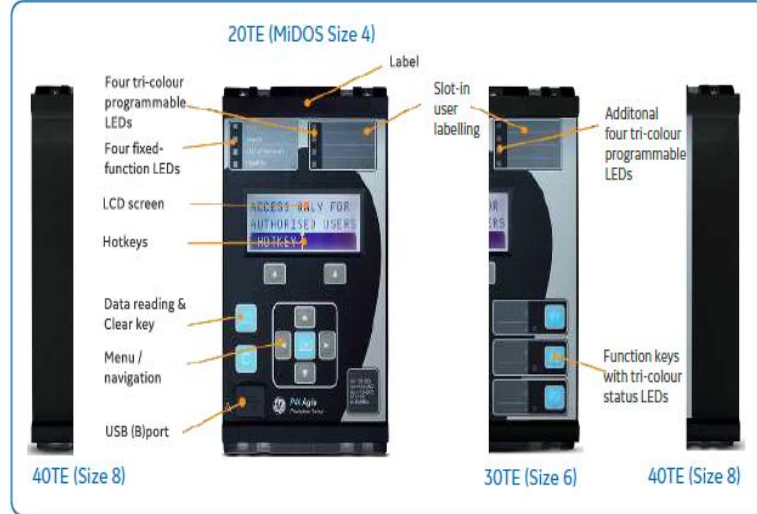
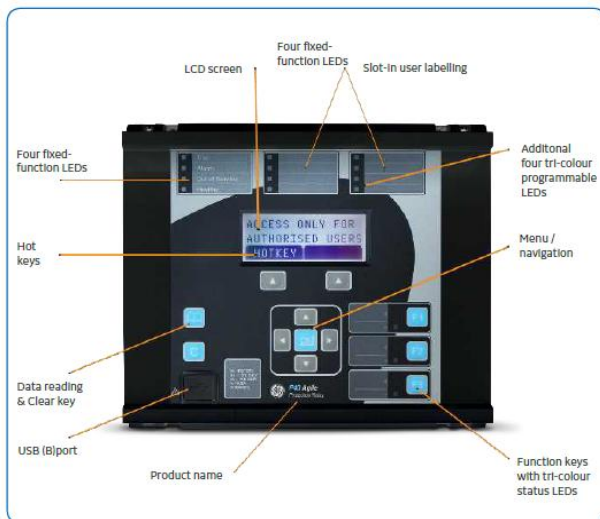
Weight (20TE case) 2 kg – 3 kg

(depending on chosen options)

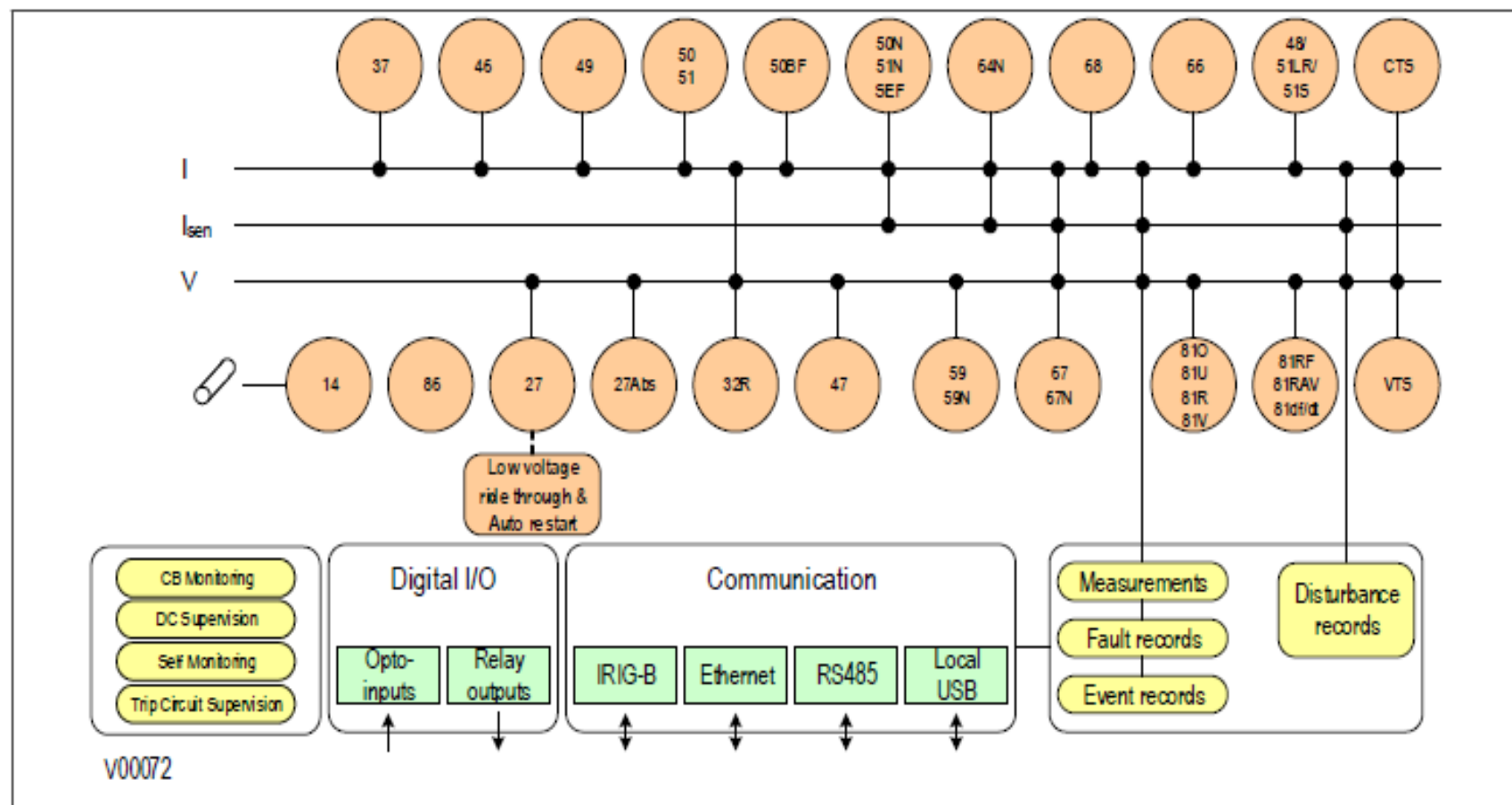
Weight (30TE case) 3 kg – 4 kg


(depending on chosen options)





Physical Measurements	
Case Types	20TE 30TE 40TE
Weight (20TE case)	2 kg – 3 kg (depending on chosen options)
Weight (30TE case)	3 kg – 4 kg (depending on chosen options)
Weight (40TE case)	5.5 kg
Dimensions in mm (w x h x l) (20TE case)	W: 102.4mm H: 177.0mm D: 243.1mm
Dimensions in mm (w x h x l) (30TE case)	W: 154.2mm H: 177.0mm D: 243.1mm
Dimensions in mm (w x h x l) (40TE case)	W: 206.0mm H: 177.0mm D: 243.1mm
Mounting	Panel, rack, or retrofit



Sr. No	Model of relay	Protocol	Input (Min / Max)	Outputs (Min / Max)	CT INPUTS	VT INPUTS	ANSI Code
D	 Agile P241	Modbus/ IEC103/ IEC 61850	8 / 12	7 / 11	4	3	50, 51, 50N, 51N, 67N, 32N/64N, 50BF, 66, 37, 46, 32R, 47, 49, 40, 27/59, 47, 29ABS, 59N, 81U, 48/51LR, 51S, 55, 14, 26

MICOM P241 case dimensions (40TE case)

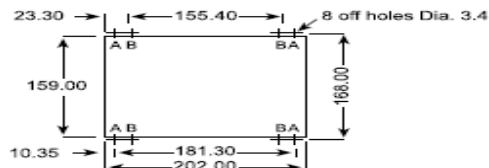
Design

Modular MiCOM Px40 platform relay, P241 in 40TE case

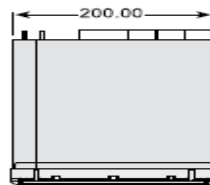
Mounting is front of panel flush mounting or 19" rack mounted (ordering options).

Weight

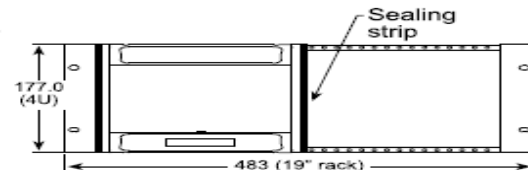
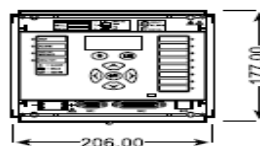
P241 (40TE): 7.3kg



A = Clearance holes
B = Mounting holes



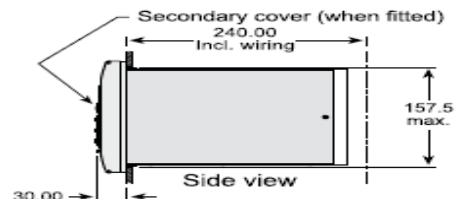
Front view




Flush mounting panel
Panel cut-out detail

Note: If mounting plate is required
use flush mounting cut out
dimensions

All dimensions in mm

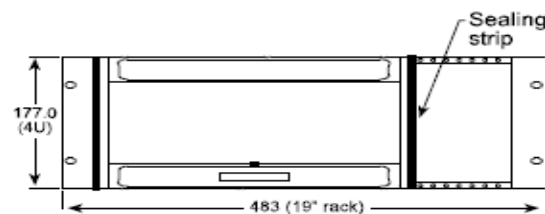
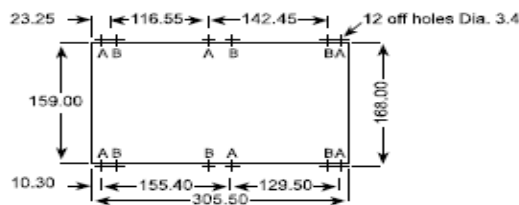


Sr. No	Model of relay	Protocol	Input (Min / Max)	Outputs (Min / Max)	CT INPUTS	VT INPUTS	ANSI Code
E	 Agile P242	Modbus/ IEC103/ IEC 61851	16	16	4	3	P241 + Funtion Keys (10 No's)

MICOM P242 case dimensions (60TE case)

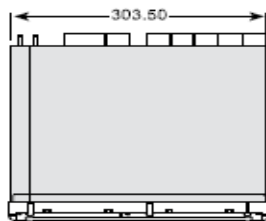
Design
Modular MiCOM Px40 platform
relay P242 in 60TE case
Mounting is front of panel flush
mounting or 19" rack mounted
(ordering options).

Weight
P242 (60TE): 9.2kg (with RTD,
CLIO cards)

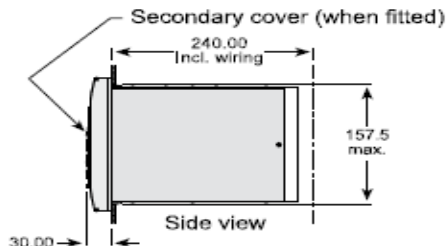
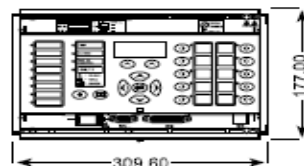


A = Clearance holes
B = Mounting holes


All dimensions in mm



Front view



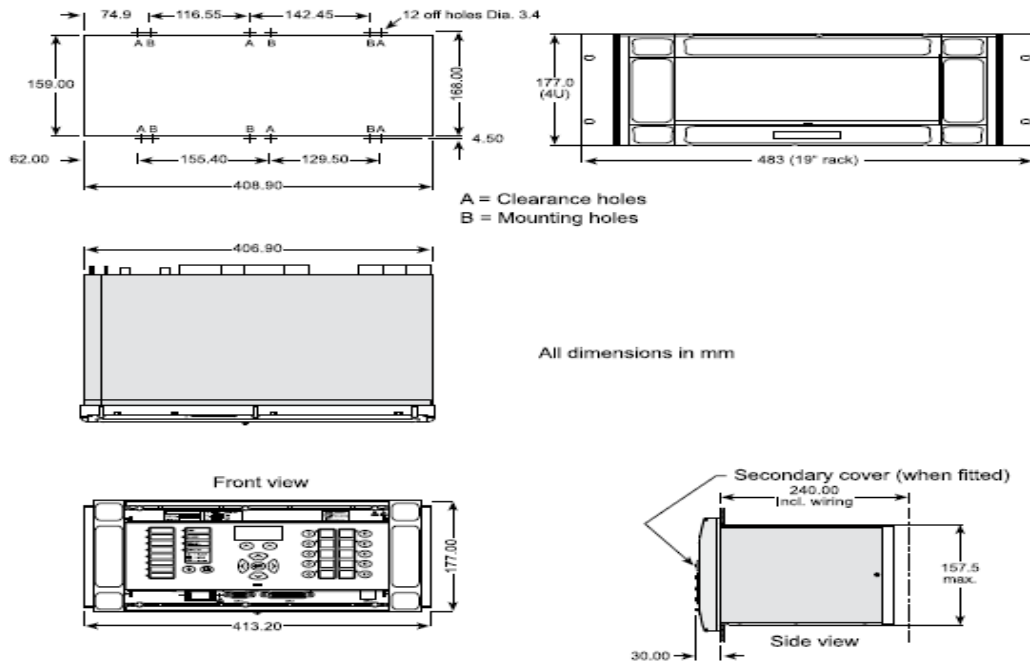
Side view

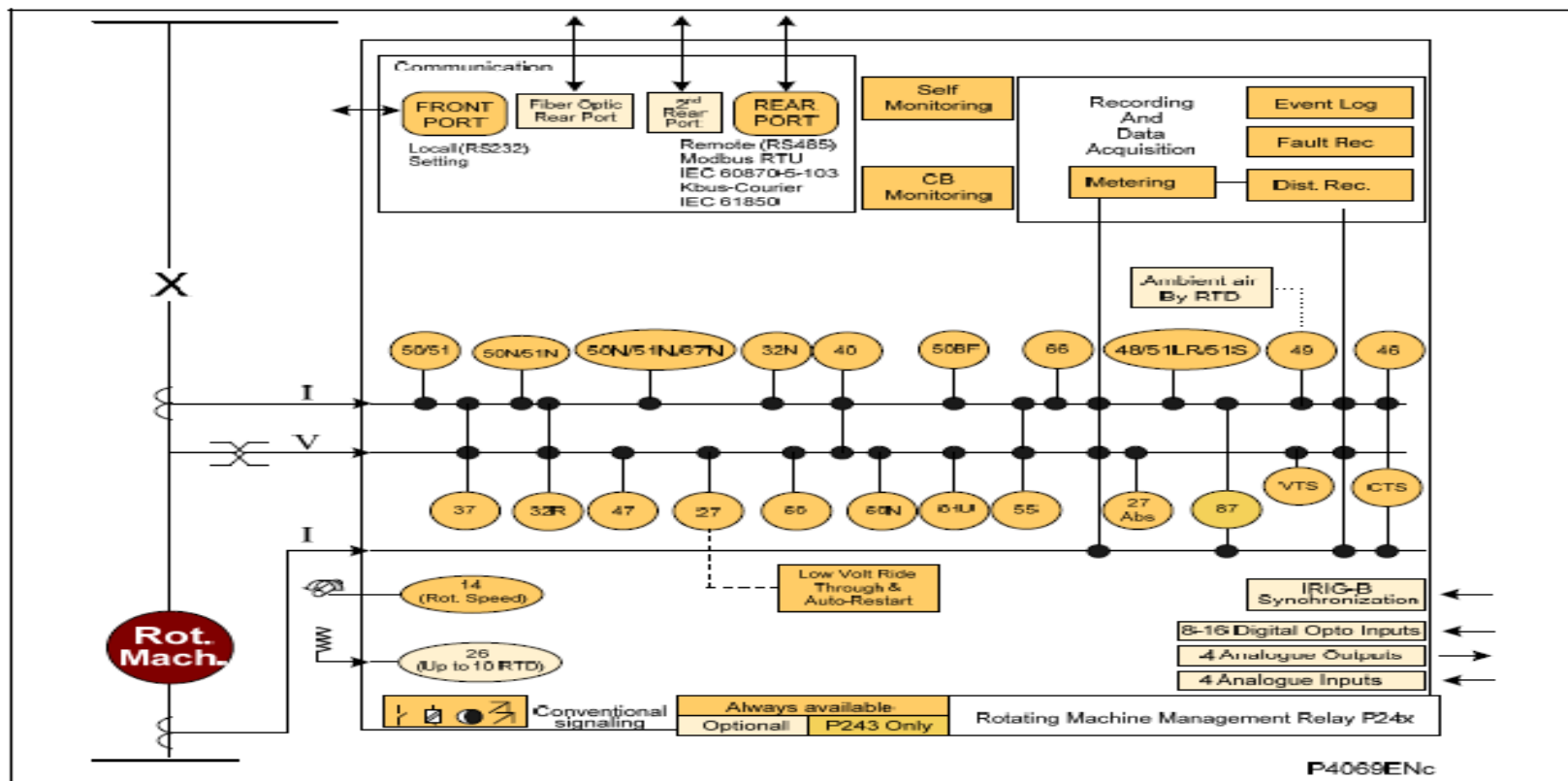
Sr. No	Model of relay	Protocol	Input (Min / Max)	Outputs (Min / Max)	CT INPUTS	VT INPUTS	ANSI Code
F	 Agile P243	Modbus/ IEC103/ IEC 61852	16	16	7	3	P242 + 87

MICOM P243 case dimensions (80TE case)

Design
Modular MiCOM Px40 platform
relay P242 in 80TE case
Mounting is front of panel flush
mounting or 19" rack mounted
(ordering options).

Weight
P243 (80TE): 11.5kg (with RTD, CLIO
cards)





❖ Disclaimer:-

Info given herein is for ease of understanding. Customized tech info is for specific purpose SCS suggests you to take confirmation on technical details from GE experts SCS does not take responsibility or claim this will suit your needs.



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Office / Stores : Plot No.8,Block No.A,Naraina Industrial Area, Phase-1, New Delhi-28



[Sales@systemcontrols.co. in/](mailto:Sales@systemcontrols.co.in) support@systemcontrols.co.in



Sales :- 011-45631915,45631902,09810009036



Support :- 9717143393



011-45631903

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