

FDV – DOKUMENTASJON		Nr.: 043
		Rev.:
		Dato: 5.8.2015
Produktspesifikasjon	Motovern Bryter	
Produktnavn	Serie Surion, GPS1B, GPS2B, GPS1M OG GPS2M	
Anvisning for drift	Ingen	
Vedlikehold	Produktet er vedlikeholdsfritt	
Henvisninger Vedlegg	Produktkatalog, dokumentasjon, brukerveiledning og tekniske data	
Produsent	General Electric	
Importør	EFA Elektro AS, Postboks 593, 1411 Kolbotn, Norway Tlf. 66812400 e-mail: post@efa.no - www.efa.no	

EFA Elektro AS



Serviceingeniør vern og startapparater

Technical data

General data

Frame size	GPS1	GPS2
Rated insulation voltage Ui	690V	1000V
Rated operating voltage Ue	690V ac	690V ac
Rated impulse withstand strength Uimp	6kV	8kV
Rated frequency	50/60Hz	50/60Hz
Total power loss P (W)	0.16 to 25A 7W 32A 8.5W	up to 32A 11W 40A to 50A 15W 63A 17W
Utilisation category:		
IEC 947-2 (Circuit breaker)	Cat. A	Cat. A
IEC 947-4-1 (Motor starter)	AC3	AC3
Mechanical operational performance	100,000 (70,000 for 32A)	50,000
Electrical operational performance	100,000 (70,000 for 32A)	25,000
Max. operations per hour (motor start-up)	25	25
Ambient conditions:		
Storage temperature	-40°C to +80°C	-40°C to +80°C
Operation temperature	-25°C to +60°C	-25°C to +60°C
Temperature compensation	-20°C to +60°C	-20°C to +60°C
Ambient temperature compensation	yes	yes
Operational altitude	up to 2000m	up to 2000m
Shock resistance (IEC 68)	30g (width 20ms)	30g (width 20ms)
Vibration resistance	8g (5 to 150Hz)	8g (5 to 150Hz)
Shock -hazard prot. (acc.DIN VDE 0106)	fingerproof	fingerproof
Protection degree (acc.to IEC529)	IP20	IP10 (IP20 with acc GPAPT2A)
Rated current Ie	up to 32A	up to 63A
Overload protection	IEC 947-4-1	IEC 947-4-1
Phase failure protection	yes	yes
Tripping class	10	10
Magnetic release (factory set)	13 x Iemax	13 x Iemax
Test trip button	yes	yes
Standards & Approvals		
IEC 947-1 / -2 / -4-1	yes	yes
DIN VDE 0660T 100 / 101 / 102	yes	yes
UL508	yes	yes
UL508 type E	Only GPS1*H	yes
CE	yes	yes
cULus	yes	yes
D / S / N / Fi	In process	-
Shipping approvals	yes	yes

Mounting data

Terminal capacity:		
Solid or stranded without end sleeve	1 x 1...10 mm ² 2 x 1...6 mm ²	1 or 2 x 1...25 mm ²
Stranded with end sleeve	1 or 2 x 1...6 mm ²	1 x 1...25 mm ² / 2 x 1...16 mm ²
AWG	1 x 18...8 / 2 x 18...10	1 x 18...2 / 2 x 18...4
Operating mechanism lockable in OFF position diameter (mm)	3.5 to 4.5	3.5 to 4.5
Terminal type	screw	box
Tightening torque	2 Nm / 18Lb.in	5 Nm / 45 Lb.in
Screwdriver	Pz2 / slotted combination	Pz2 / slotted combination
Mounting:		
DIN-rail	yes	yes
Screws	no	yes
Operating position:		
turning to the front	30°	30°
turning to the back	90°	90°
turning to both sides	180°	180°
Handle operation	Rocker level / Rotary	Rotary
Dimensions		
width (mm)	45	55
height (mm)	90	120
depth (mm)	(GPS1*S) 75 / 92.5 (GPS1*H)	107.5



Ultimate short-circuit breaking capacity (I_{cu}) in kA

		For ranges GPS1BSA* / GPS1MSA*																	
		A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	U
Rated current (A)		1.6	0.25	0.4	0.63	1	1.6	2.5	4	6.3	10	13	16	20	25	32	40	50	63
220/230V		100	100	100	100	100	100	100	100	100	100	100	100	50	50	50	-	-	-
400/415V		100	100	100	100	100	100	100	100	100	100	50	25	25	25	25	-	-	-
440V		100	100	100	100	100	100	100	100	50	15	10	10	10	10	10	-	-	-
500/525V		100	100	100	100	100	100	100	100	50	10	6	6	6	6	6	-	-	-
600V		100	100	100	100	100	100	3	3	3	3	3	3	3	3	3	-	-	-
690V		100	100	100	100	100	100	3	3	3	3	3	3	3	3	3	-	-	-
		For ranges GPS1BHA* / GPS1MHA*																	
220/230V		100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	-	-	-
400/415V		100	100	100	100	100	100	100	100	100	100	100	50	50	50	50	-	-	-
440V		100	100	100	100	100	100	100	100	100	50	35	35	35	35	35	-	-	-
500/525V		100	100	100	100	100	100	100	100	100	50	42	10	10	10	10	-	-	-
600V		100	100	100	100	100	100	8	8	6	6	4	4	4	4	4	-	-	-
690V		100	100	100	100	100	100	8	8	6	6	4	4	4	4	4	-	-	-
		For ranges GPS2BSA* / GPS2MSA*																	
220/230V		-	-	-	-	-	-	-	-	-	100	100	100	50	50	50	50	50	50
400/415V		-	-	-	-	-	-	-	-	-	100	50	25	25	25	25	25	25	25
440V		-	-	-	-	-	-	-	-	-	15	10	10	10	10	10	10	10	10
500/525V		-	-	-	-	-	-	-	-	-	10	6	6	6	6	6	5	5	5
600V		-	-	-	-	-	-	-	-	-	4	4	4	4	4	4	4	4	4
690V		-	-	-	-	-	-	-	-	-	4	4	4	4	4	4	4	4	4
		For ranges GPS2BHA* / GPS2MHA*																	
220/230V		-	-	-	-	-	-	-	-	-	100	100	100	100	100	100	100	100	100
400/415V		-	-	-	-	-	-	-	-	-	100	100	50	50	50	50	50	50	50
440V		-	-	-	-	-	-	-	-	-	50	50	50	50	35	35	35	35	35
500/525V		-	-	-	-	-	-	-	-	-	50	42	12	12	10	10	10	10	10
600V		-	-	-	-	-	-	-	-	-	6	6	5	5	5	5	5	5	5
690V		-	-	-	-	-	-	-	-	-	6	6	5	5	5	5	5	5	5

Short-circuit proof with an I_{cu} = 100kA or 50kA

Rated service short-circuit breaking capacity (I_{cs}) in kA

		For ranges GPS1BSA* / GPS1MSA*																	
		A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	U
Rated current (A)		1.6	0.25	0.4	0.63	1	1.6	2.5	4	6.3	10	13	16	20	25	32	40	50	63
220/230V		100	100	100	100	100	100	100	100	100	100	100	100	38	38	38	-	-	-
400/415V		100	100	100	100	100	100	100	100	100	100	38	19	19	19	19	-	-	-
440V		100	100	100	100	100	100	100	100	38	11	8	8	8	8	8	-	-	-
500/525V		100	100	100	100	100	100	100	100	38	8	5	5	5	5	5	-	-	-
600V		100	100	100	100	100	100	3	3	3	3	3	3	3	3	3	-	-	-
690V		100	100	100	100	100	100	3	3	3	3	3	3	3	3	3	-	-	-
		For ranges GPS1BHA* / GPS1MHA*																	
220/230V		100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	-	-	-
400/415V		100	100	100	100	100	100	100	100	100	100	38	38	38	38	38	-	-	-
440V		100	100	100	100	100	100	100	100	100	38	38	25	25	25	25	-	-	-
500/525V		100	100	100	100	100	100	100	100	100	38	32	8	8	8	8	-	-	-
600V		100	100	100	100	100	100	6	6	5	5	5	3	3	3	3	-	-	-
690V		100	100	100	100	100	100	6	6	5	5	5	3	3	3	3	-	-	-
		For ranges GPS2BSA* / GPS2MSA*																	
220/230V		-	-	-	-	-	-	-	-	-	100	100	100	38	38	38	38	38	38
400/415V		-	-	-	-	-	-	-	-	-	100	32	19	19	19	19	19	19	19
440V		-	-	-	-	-	-	-	-	-	12	8	8	8	8	8	8	8	8
500/525V		-	-	-	-	-	-	-	-	-	8	5	5	5	5	5	4	4	4
600V		-	-	-	-	-	-	-	-	-	3	3	3	3	3	3	3	3	3
690V		-	-	-	-	-	-	-	-	-	3	3	3	3	3	3	3	3	3
		For ranges GPS2BHA* / GPS2MHA*																	
220/230V		-	-	-	-	-	-	-	-	-	100	100	100	100	100	100	100	100	100
400/415V		-	-	-	-	-	-	-	-	-	100	100	38	38	38	38	38	38	38
440V		-	-	-	-	-	-	-	-	-	38	38	38	38	25	25	25	25	25
500/525V		-	-	-	-	-	-	-	-	-	38	32	9	9	9	8	8	8	8
600V		-	-	-	-	-	-	-	-	-	5	5	4	4	4	4	4	4	4
690V		-	-	-	-	-	-	-	-	-	5	5	4	4	4	4	4	4	4

Back-up fuses are necessary in case of possibility of a short-circuit current higher than 100kA or 50kA at the installation point of the device (on request)

I_{cs} = 100%I_{cu} when I_{cu} = 100kA

I_{cs} = 75%I_{cu} when I_{cu} < 100kA

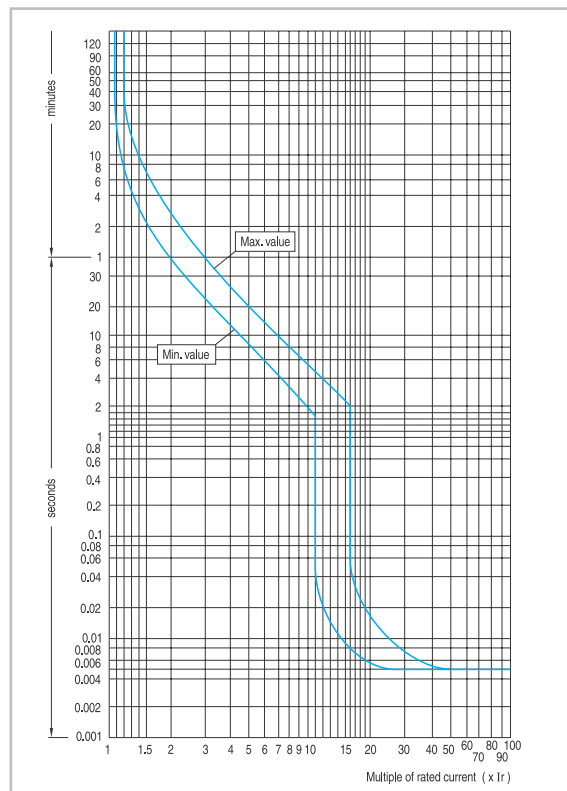


Back-up gl/gG fuses only if $I_{cs} > I_{cu}$ (kA)

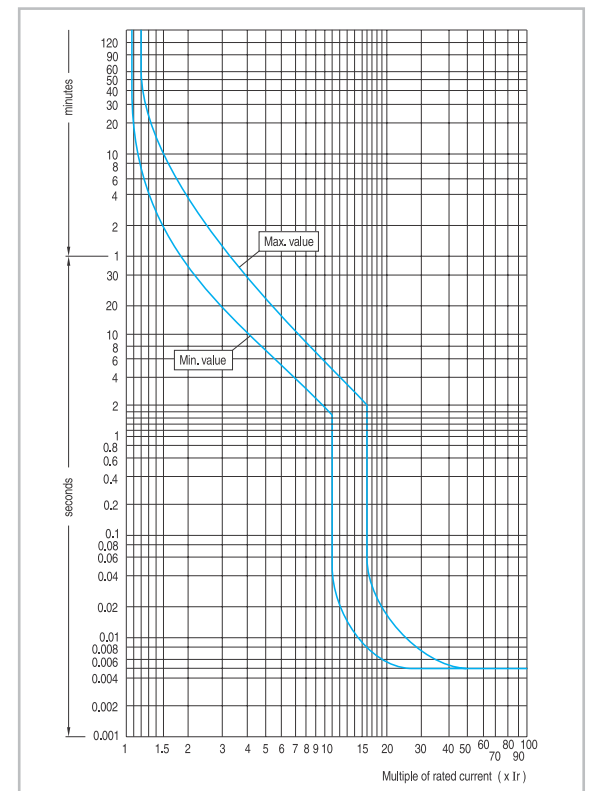
gl/gG fuses (A)	For ranges GPS1BSA* / GPS1MSA*																	
	A 1.6	B 0.25	C 0.4	D 0.63	E 1	F 1.6	G 2.5	H 4	J 6.3	K 10	L 13	M 16	N 20	P 25	R 32	S 40	T 50	U 63
	#	#	#	#	#	#	#	#	#	#	#	#	100	100	100	-	-	-
230V	#	#	#	#	#	#	#	#	#	#	#	#	100	100	100	-	-	-
400V	#	#	#	#	#	#	#	#	#	#	80	100	100	100	100	-	-	-
440V	#	#	#	#	#	#	#	#	50	63	63	80	80	80	80	-	-	-
500V	#	#	#	#	#	#	#	#	50	50	63	63	63	80	80	-	-	-
600V	#	#	#	#	#	#	20	32	40	50	63	63	63	80	80	-	-	-
690V	#	#	#	#	#	#	20	32	40	50	50	63	63	63	63	-	-	-
For ranges GPS1BHA* / GPS1MHA*																		
230V	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	-	-	-
400V	#	#	#	#	#	#	#	#	#	#	#	100	125	125	125	-	-	-
440V	#	#	#	#	#	#	#	#	#	63	63	80	80	100	100	-	-	-
500V	#	#	#	#	#	#	#	#	#	50	63	80	80	80	80	-	-	-
600V	#	#	#	#	#	#	25	40	50	50	63	63	63	80	80	-	-	-
690V	#	#	#	#	#	#	25	40	50	50	63	63	63	63	63	-	-	-
For ranges GPS2BSA* / GPS2MSA*																		
230V	-	-	-	-	-	-	-	-	-	#	#	#	125	125	125	125	125	160
400V	-	-	-	-	-	-	-	-	-	-	#	80	100	125	125	125	125	160
440V	-	-	-	-	-	-	-	-	-	63	63	80	80	100	100	125	125	125
500V	-	-	-	-	-	-	-	-	-	63	63	80	80	80	80	100	100	125
600V	-	-	-	-	-	-	-	-	-	63	63	63	63	80	80	100	100	100
690V	-	-	-	-	-	-	-	-	-	63	63	63	63	63	63	63	80	100
For ranges GPS2BHA* / GPS2MHA*																		
230V	-	-	-	-	-	-	-	-	-	#	#	#	#	#	#	#	#	#
400V	-	-	-	-	-	-	-	-	-	#	#	100	125	125	125	125	125	160
440V	-	-	-	-	-	-	-	-	-	63	63	80	80	100	100	125	125	125
500V	-	-	-	-	-	-	-	-	-	63	63	80	80	80	80	100	100	125
600V	-	-	-	-	-	-	-	-	-	80	63	63	63	80	80	100	100	100
690V	-	-	-	-	-	-	-	-	-	80	63	63	63	63	63	63	80	100

Back-up gl/gG fuses only if $I_{cs} > I_{cu}$ (kA)

Manual motor starter: GPS1...

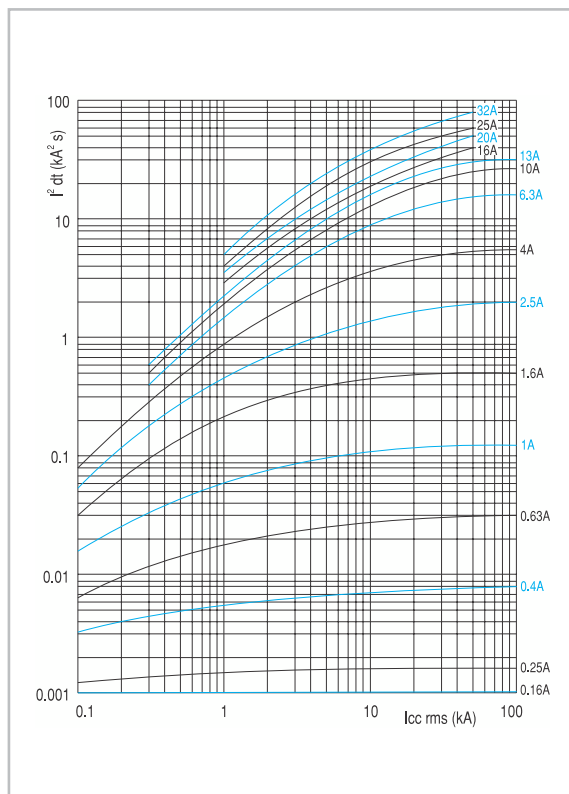


Manual motor starter: GPS2...

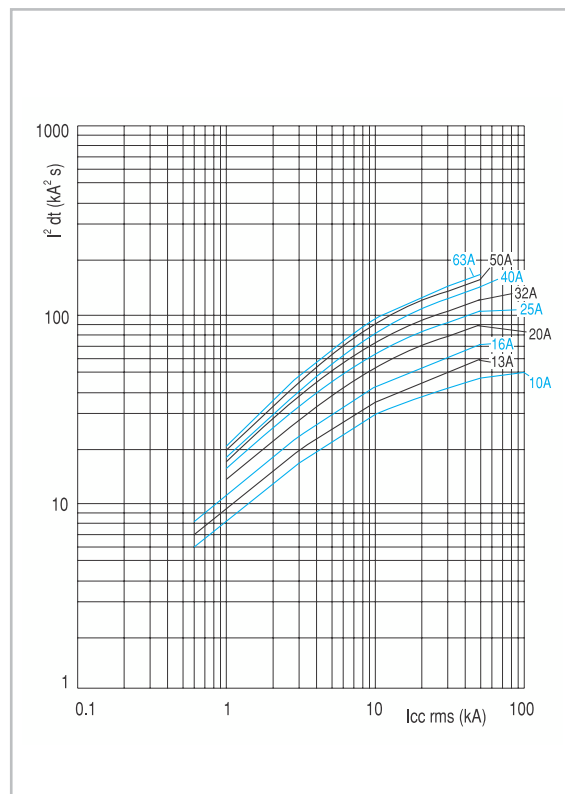


Specific let-through energy at $U_e = 400/415\text{ V}$

Manual motor starter: GPS1...

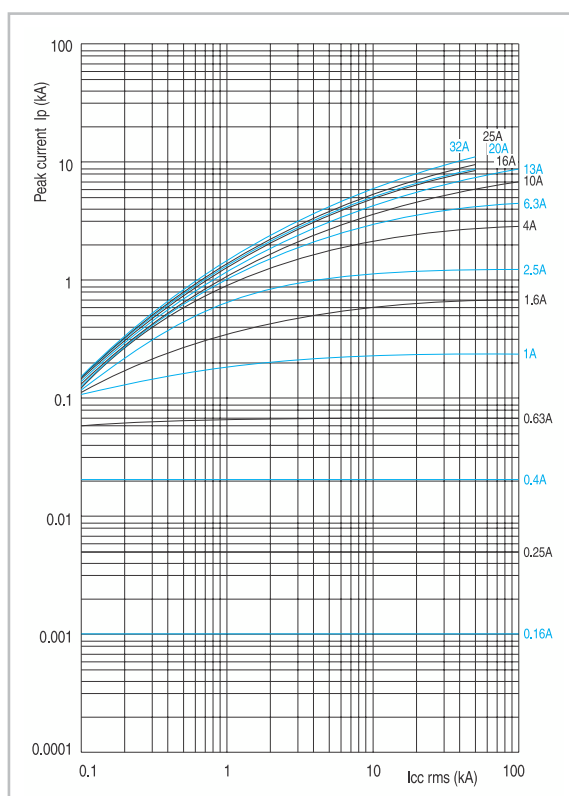


Manual motor starter: GPS2...

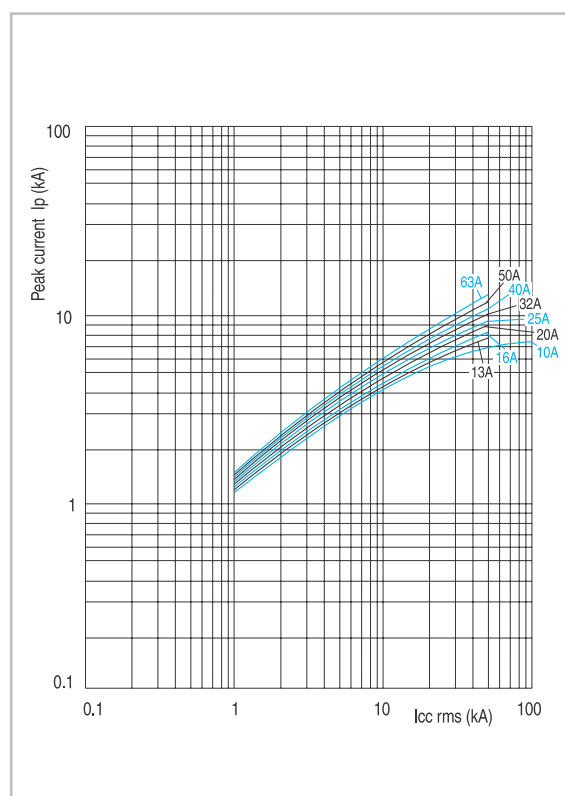


Peak current limitation at $U_e = 400/415\text{ V}$

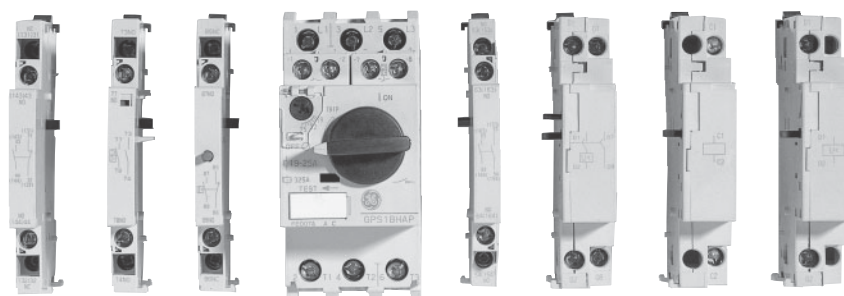
Manual motor starter: GPS1...



Manual motor starter: GPS2...



Mounting possibilities of the auxiliaries



Wiring diagram		Type	Description
Frontal auxiliaries			
	Auxiliary contact block	1NO or 1NC	Two <u>frontal</u> auxiliary contact blocks can be installed at the same time maintaining the overall width of the manual motor starter.
	Alarm contact block	1NO or 1NC	Installed on the <u>frontal</u> right side. Can be mounted in combination with the frontal auxiliary block. The overall width of the manual motor starter is maintained.
Lateral auxiliaries			
	Auxiliary contact block	2NO 1NO + 1NC 2NC	Different catalogue numbers for <u>left</u> or <u>right</u> mounting. Maximum number of auxiliary contact blocks mounted on each side: 2. Total number of auxiliary contacts in combination frontal and lateral: 8. Width of each lateral auxiliary contact block: 9 mm. GPS1 rated at 32A allows maximum 2 auxiliary contact blocks (4 contacts).
	Auxiliary/alarm contact block	1NO (alarm) + 1NO (auxiliary) 1NO (alarm) + 1NC (auxiliary) 1NC (alarm) + 1NO (auxiliary) 1NC (alarm) + 1NC (auxiliary)	Installed on the <u>left</u> side. Maximum number of blocks per manual motor starter: 1. Can be fitted together with one lateral auxiliary contact block or one short-circuit alarm block mounted on the left side. Width of each lateral alarm/auxiliary contact block: 9 mm.
	Short-circuit alarm contact block	1NO + 1NC	Installed on the <u>left</u> side. Tripping in case of short-circuit only. Can be fitted together with one lateral auxiliary contact block or one auxiliary/alarm block mounted on the left side. Width of each short-circuit alarm contact block: 9 mm.
	Shunt trip		Installed on the <u>right</u> side. Can not be mounted together with the undervoltage release or any lateral block mounted on the same side. Width of each shunt trip: 18 mm.
	Undervoltage trip		Installed on the <u>right</u> side. Can not be mounted together with a shunt trip device or any lateral block mounted on the same side. Width of each undervoltage trip: 18 mm
	Undervoltage trip with 2NO early make auxiliary contacts		Installed on the <u>right</u> side. Two different types, one for the GPS1*S.. and another for the GPS1*H..and GPS2.. Can not be mounted together with a shunt trip device or any lateral block mounted on the same side. Width of each undervoltage trip: 18 mm.

Shunt trip, undervoltage trip and undervoltage with 2NO contacts can be mounted together with any frontal block or left lateral block with above mentioned restrictions

Auxiliaries

Catalogue reference		GPAC*F..			GPAC*L..			GPAL..			GPAD..			GPAE..					
		Aux. frontal block			Aux. lateral block			Alarm frontal block			Alarm/aux. lateral block			Short-circuit alarm block					
Cont. cap. contacts class (UL508)		B300 / Q300			A600 / P300			B300 / Q300			A600 / P300			A600 / P300					
Back-up fuses gG, gI		6A			10A			6A			10A			10A					
Utilization category AC-15																			
Rated operating voltage Ue (Vac)		48	125	230	48	125	230	400	500	690	48	125	230	48	125	230	400	500	690
Rated operational current (A)		5	3	1.5	6	4	4	2.2	1.5	0.6	5	3	1.5	6	4	4	2.2	1.5	0.6
Utilization category DC-13																			
Rated operating voltage Ue (Vdc)		48	110	220	48		110		220		48	110	220	48		110		220	
Rated operational current (A)		1.38	0.55	0.27		5		1.3		0.5	1.38	0.55	0.27	5		1.3		0.5	
Mounting data																			
Mounting side		Front			Left or right			Frontal right			Left			Left					
Terminals capacity:																			
Solid or stranded without end sleeve		2x0.5...2.5 mm²			2x0.5...2.5 mm²			2x0.5...2.5 mm²			2x0.5...2.5 mm²			2x0.5...2.5 mm²					
AWG		2x18...14			2x18...14			2x18...14			2x18...14			2x18...14					
Terminal type		screw			screw			screw			screw			screw					
Tightening torque		0.8Nm			0.8Nm			0.8Nm			0.8Nm			0.8Nm					
Screwdriver		Pz2/Slotted			Pz2/Slotted			Pz2/Slotted			Pz2/Slotted			Pz2/Slotted					
Dimensions width (mm)		Maintain same width			Increase width 9 mm			Maintain same width			Increase width 9 mm			Increase width 9 mm					

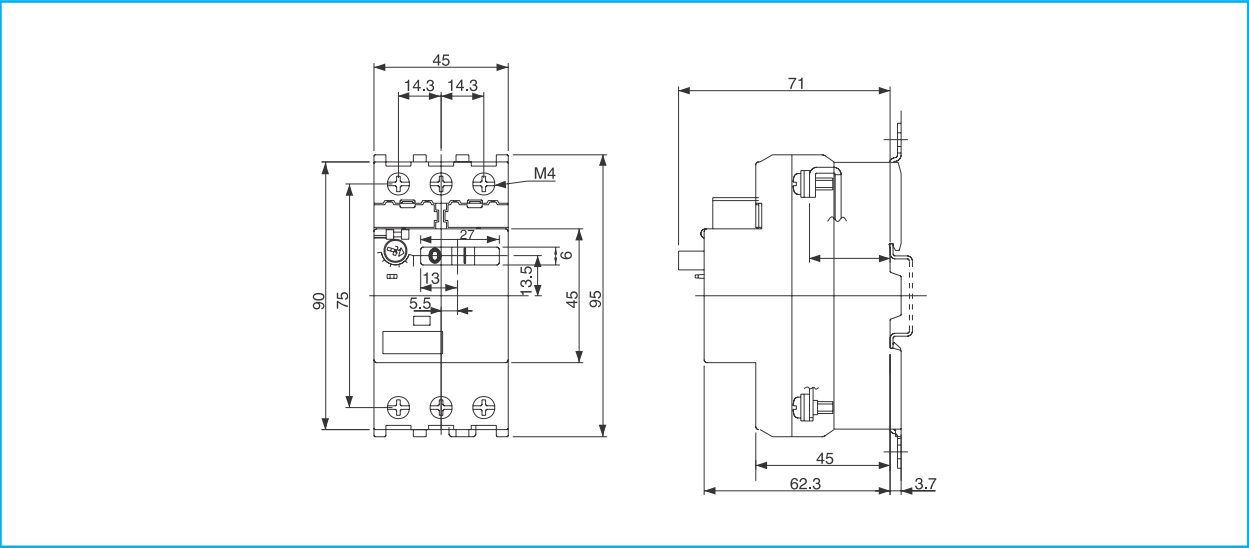
Catalogue reference		GPAU			GPAS		
		Undervoltage trip			Shunt trip		
Power consumption:							
Pick-up (VA/W)		21/12			21/12		
Hold (VA/W)		8/1.2			-		
Operating voltage							
Tripping (V)		0.35Ve-0.7Ve			0.7Ve-1.1Ve		
Pick-up (V)		0.85Ve-1.1Ve			-		
Max. operation supply (ms)		-			5(DC)		
Rated operating voltage Ue							
		24V 50Hz			24V 50/60Hz		
		24V 60Hz			48V 60Hz		
		48V 50Hz			48V 50Hz / 60V 60Hz		
		48V 60Hz			110/127V 50Hz / 120V 60Hz		
		110/127V 50Hz / 120V 60Hz			208V 60Hz		
		208V 60Hz			220/230V 50Hz / 240/260V 60Hz		
		220/230V 50Hz / 240/260V 60Hz			240V 50Hz / 277V 60Hz		
		240V 50Hz / 277V 60Hz			380/400V 50Hz		
		380/400V 50Hz			415/440V 50Hz / 460/480V 60Hz		
		415/440V 50Hz / 460/480V 60Hz			500V 50Hz / 600V 60Hz		
		500V 50Hz / 600V 60Hz			24 to 60Vdc		
					110 to 240Vdc		
Contacts class (UL508)		-			-		
Back-up fuses (gG,gI)		10A			10A		
Mounting data							
Mounting side		Right			Right		
Terminals capacity:							
Solid or stranded without end sleeve		2x0.5...2.5 mm²			2x0.5...2.5 mm²		
AWG		2x18...14			2x18...14		
Terminal type		Screw			Screw		
Tightening torque		0.8Nm			0.8Nm		
Screwdriver		Pz2/Slotted			Pz2/Slotted		
Dimensions width (mm)		Increase width 18 mm			Increase width 18 mm		

Detailed dimensions see page C.25

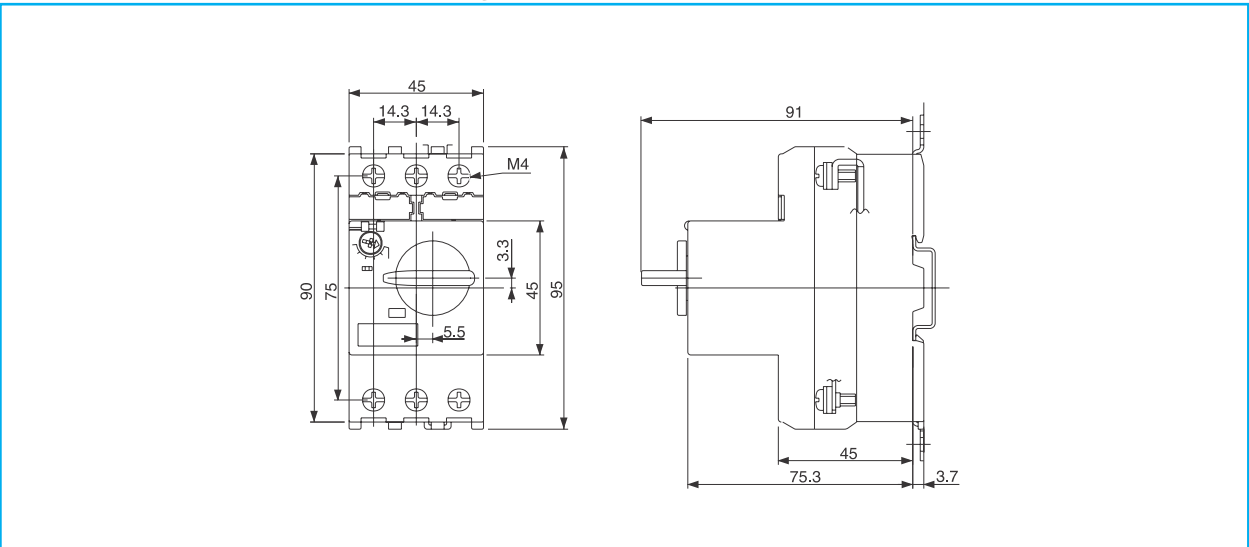


Dimensional drawings

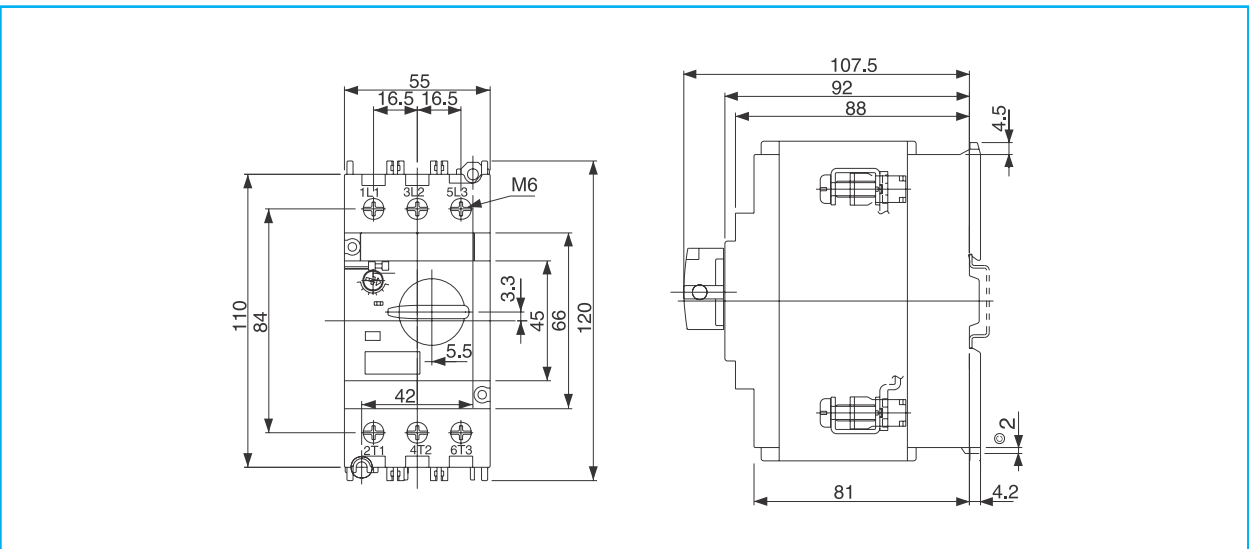
Manual Motor Starter - GPS1 rocker



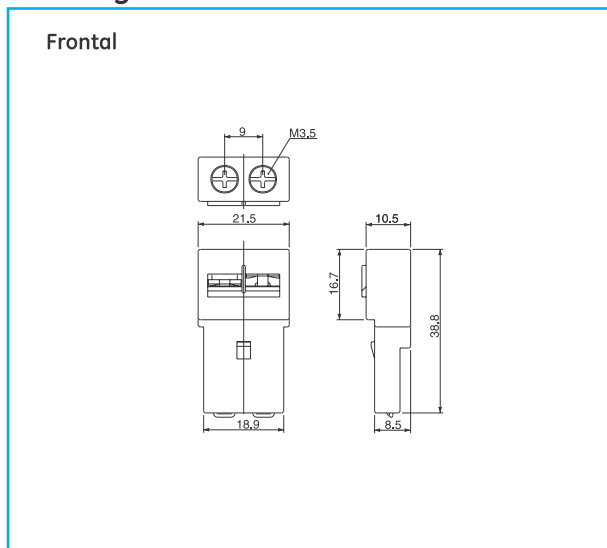
Manual Motor Starter - GPS1 rotary



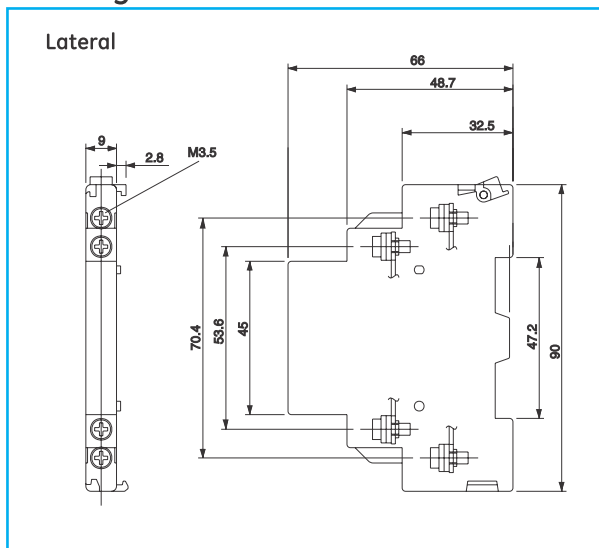
Manual Motor Starter - GPS2



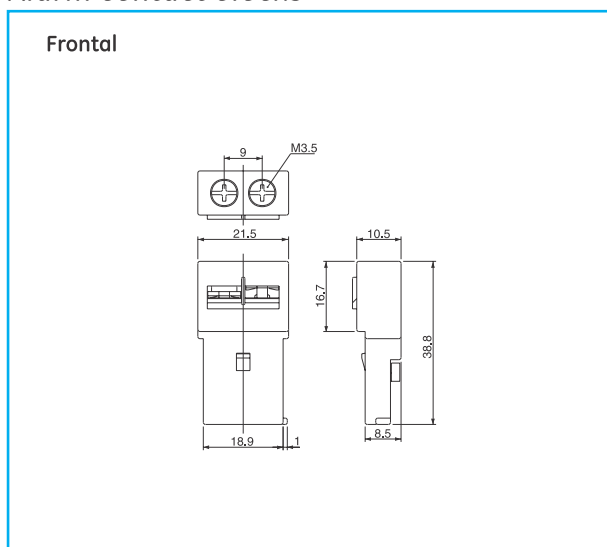
Auxiliary contact blocks



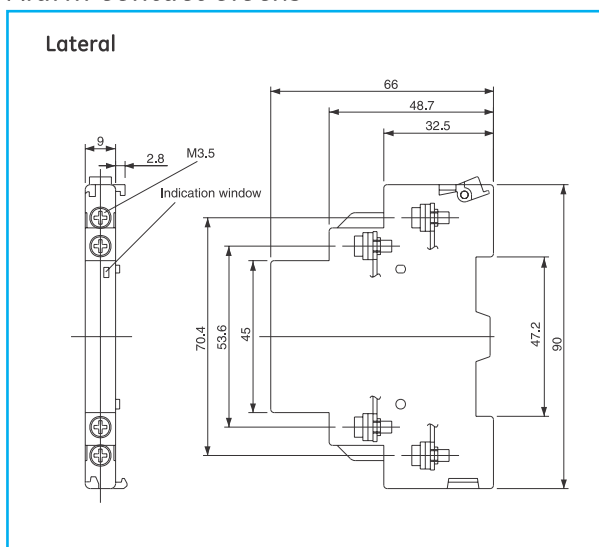
Auxiliary contact blocks



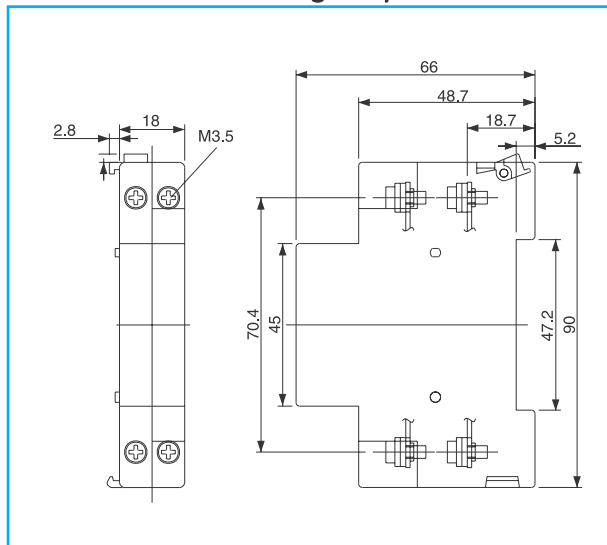
Alarm contact blocks



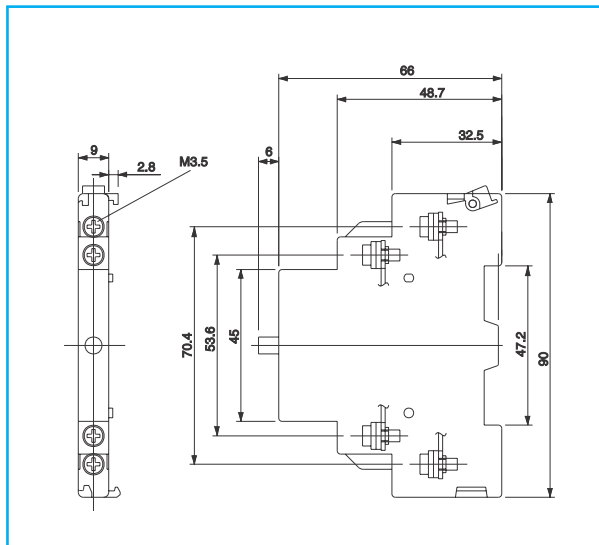
Alarm contact blocks



Shunt and undervoltage trip devices

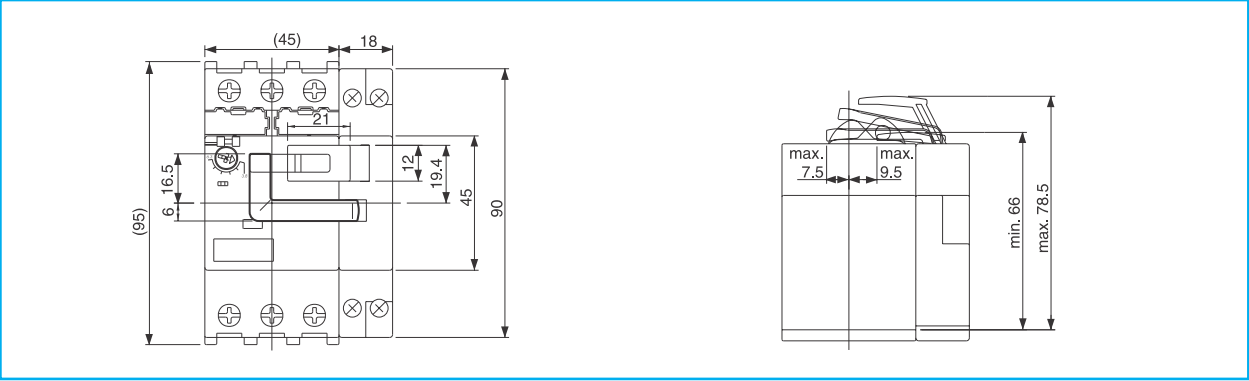


Short-circuit contact block

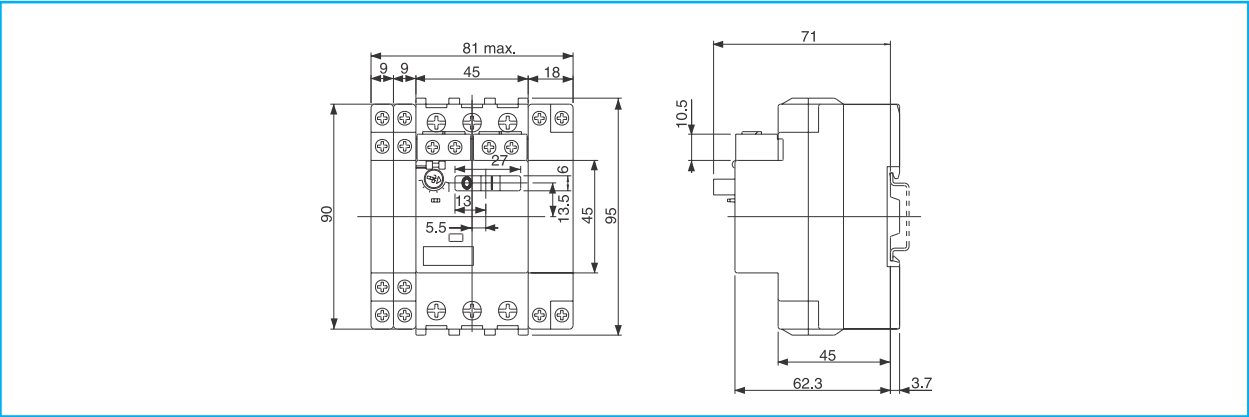


Dimensional drawings

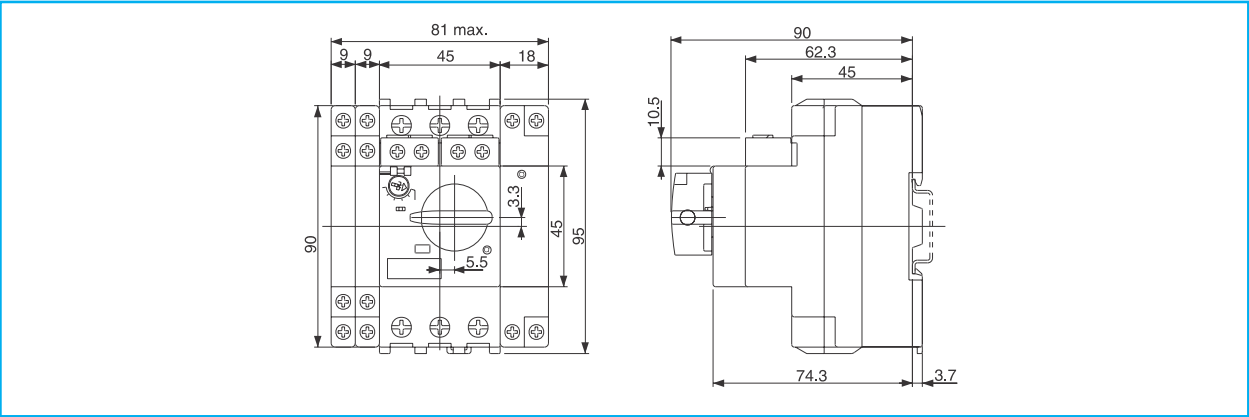
GPS1 rocker + Undervoltage trip device with 2NO contacts



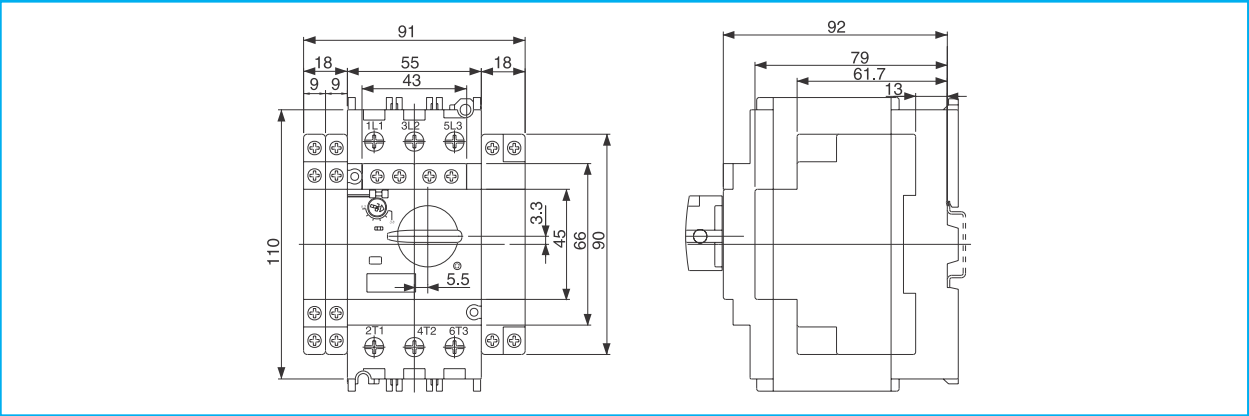
GPS1 rocker + Auxiliaries



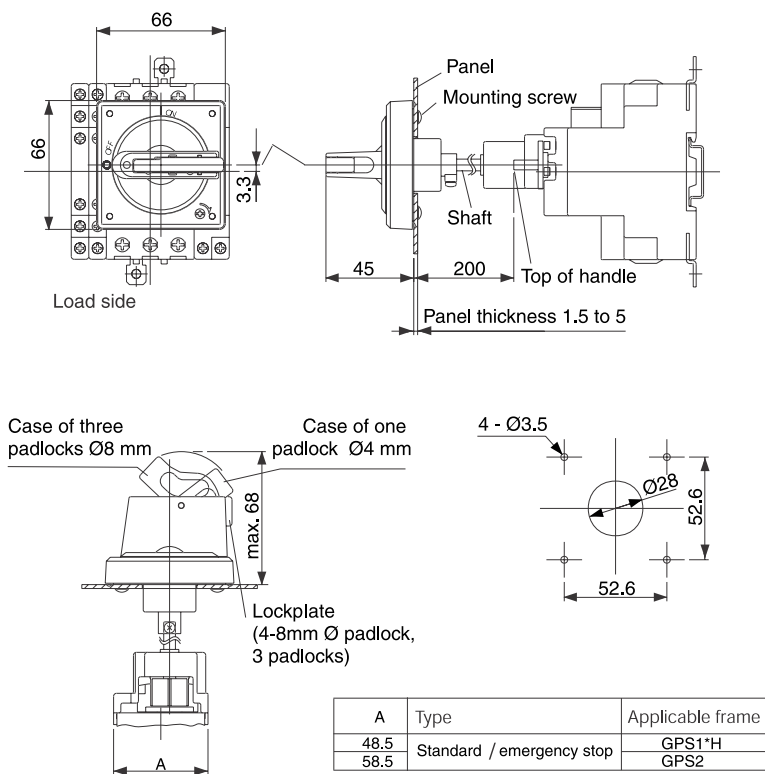
GPS1 rotary + Auxiliaries



GPS2 + Auxiliaries

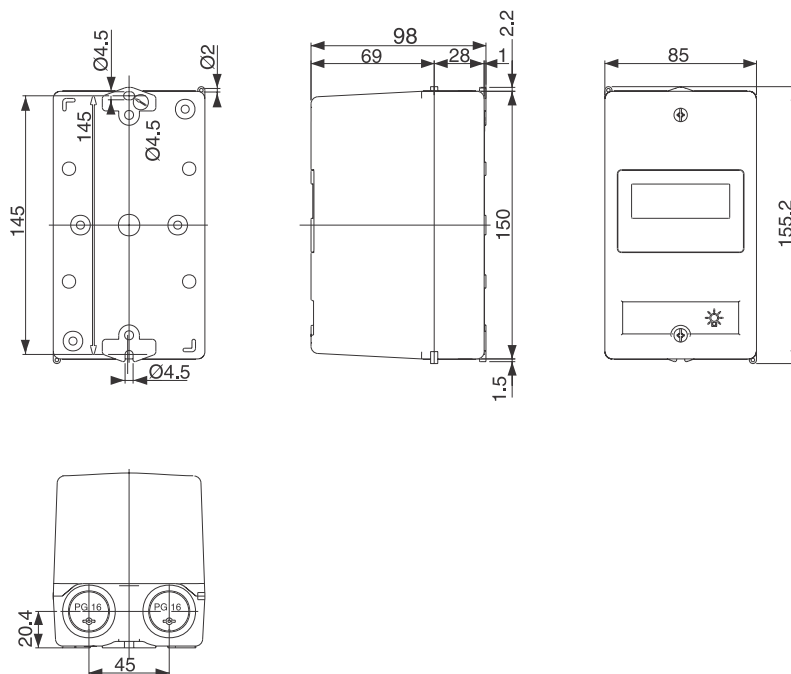


External handle operator

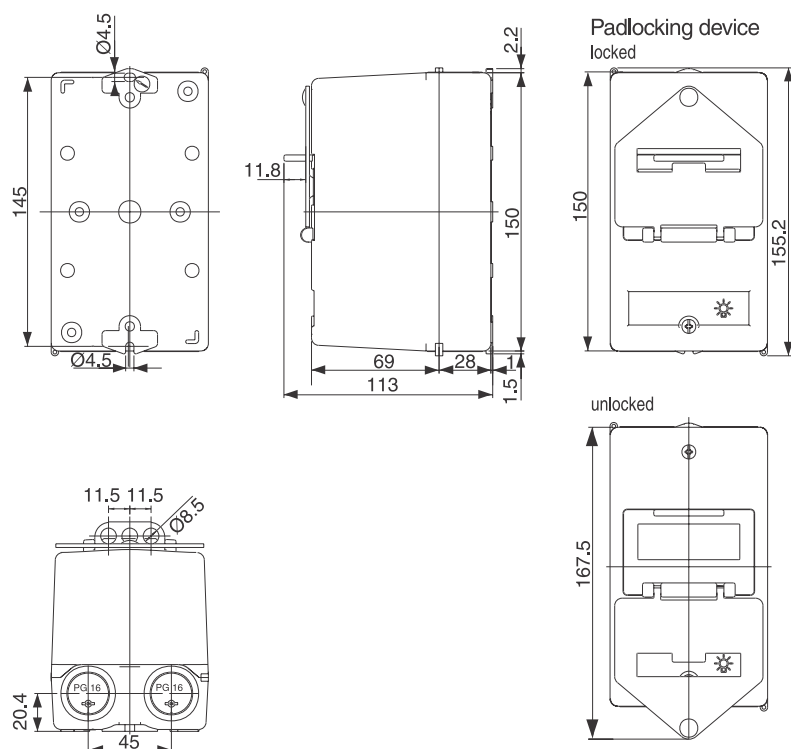


Dimensional drawings

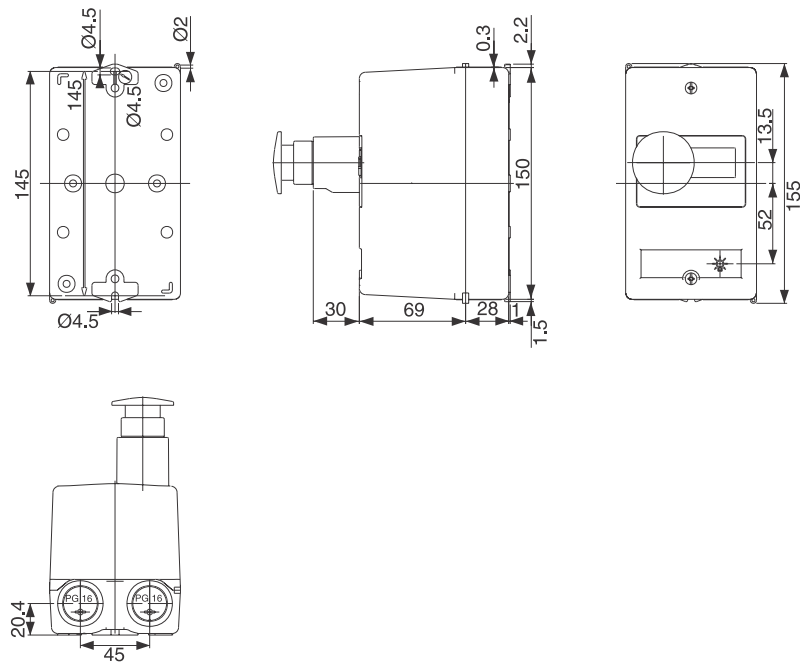
Enclosure for GPS1 - Surface mounting



Enclosure for GPS1 - Surface mounting with padlocking device

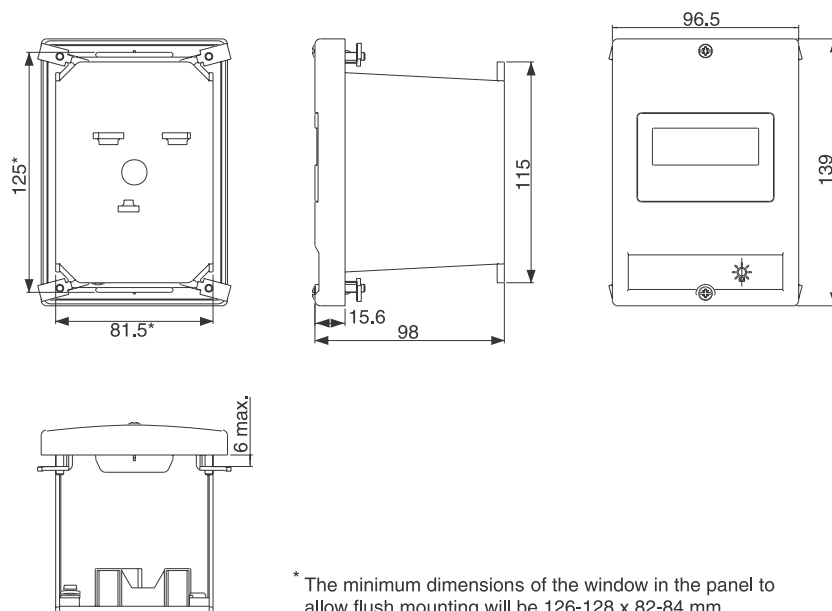


Enclosure for GPS1 - Surface mounting with emergency push-button



Dimensional drawings

Enclosure for GPS1 - Flush mounting



Enclosure for GPS1 - Flush mounting with padlocking device

