

# VL Circuit Breaker – PG 1600A frame



## Breaker type

Defined by the 3rd character of the catalog number

- G – Global (UL, CSA, NOM, IEC, CE),
- X – Global, non-interchangeable
- Y – Global, 100% rated, non-interchangeable

## Trip unit type

Defined by the 5th character of the catalog number

- B – Thermal-magnetic, model 525
- N – LI, electronic, model 545
- P – LSI, electronic, model 545
- X – LIG, electronic, model 545
- U – LSIG, electronic, model 545
- D – LSI, electronic with LCD, model 576
- E – LSIG, electronic with LCD, model 576
- R – LI, electronic, Model 555
- T – LSI, electronic, Model 555
- W – LIG, electronic, Model 555
- V – LSIG, electronic, Model 555
- A – LSI, electronic with LCD, Model 586
- G – LSIG, electronic with LCD, Model 586
- K – LSI + GF alarm, electronic with LCD, Model 586

For DC applications, use thermal magnetic trip unit only.  
For reverse-feed applications, select non-interchangeable trip breakers only.  
HACR rated.

## Interrupting ratings

Interrupting Class	Breaker Type	RMS symmetrical amperes (kA)								
		UL 489			IEC 60947-2			UL or IEC		
		Volts AC			Volts AC			Volts DC <sup>①</sup>		
		240	480	600	240	415	690	250	500	600 <sup>②</sup>
N	NPG	65	35	25	65 / 35	50 / 25	20 / 10	22	35	–
H	HPG	100	65	35	100 / 50	70 / 35	30 / 15	25	50	65
L	LPG	200	100	65	200 / 100	100 / 50	35 / 17	42	65	–

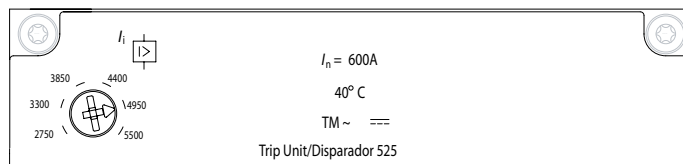
UL / CSA / NOM 40°C 50/60Hz IEC 40°C 50/60Hz

① For DC applications and wiring diagrams, see p. 5 of VL Information Guide.  
② Special version, Type HPGD. See Speedfax catalog for more information.

## Trip Unit Model 525

### Thermal magnetic trip units, model 525

$I_n$ – Trip unit rating (amps)	$I_i$ – Nominal instantaneous trip adjustable range (amps)					
1200	7000	8000	9000	10000	11000	12000
1400	7000	8000	9000	10000	11000	12000
1600	7000	8000	9000	10000	11000	12000



Trip unit model 525

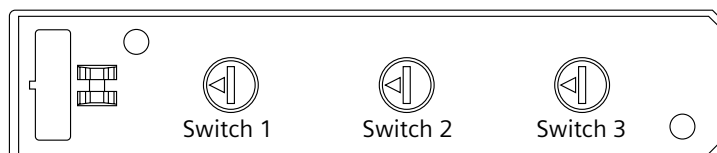
## Trip Unit Model 545

### Electronic trip units, Model 545 with LI (Trip unit type N) or LIG (Trip unit type X) Trip Functions

Switch 1	$I_n$ – Trip unit rating (amps)	$I_r$ – Continuous amp switch settings (amps)									
		1200	400	400	500	600	630	700	800	900	1000
	1600	700	700	700	800	900	1000	1200	1250	1400	1600
Switch 2	$I_n$ – Trip unit rating (amps)	$t_r$ – Long time delay switch settings (seconds) Pt @ 6 x $I_r$									
		1200, 1600	2.5	4	6	8	10	14	17	20	25
Switch 3	$I_n$ – Trip unit rating (amps)	$I_i$ – Nominal instantaneous trip switch settings (amps)									
		1200	1500	1800	2400	3600	4800	6000	7200	9600	12000
	1600	2000	2400	3200	4800	6400	8000	9600	9600	9600	9600

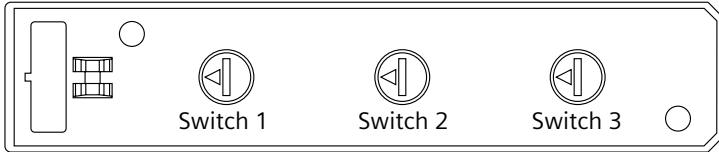
### Fixed settings (LIG only)

$I_n$ – Trip unit rating (amps)	$I_g$ – Ground fault pickup (amps)	$t_g$ – Ground fault delay
1200	720	.32 sec
1600	960	.40 sec



Trip unit model 545

### Trip Unit Model 545 (continued)



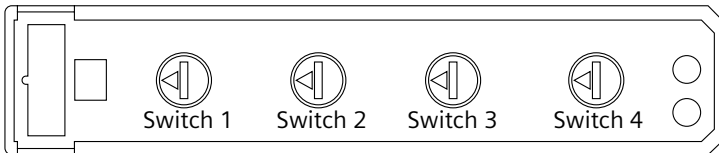
#### Electronic trip units, Model 545 with LSI (Trip unit type P) or LSIG (Trip unit type U) Trip Functions

Switch 1	$I_n$ – Trip unit rating (amps)	$I_r$ – Continuous amp switch settings (amps)										
	1200	400	400	500	600	630	700	800	900	1000	1200	
	1600	700	700	700	800	900	1000	1200	1250	1400	1600	
Switch 2	$I_n$ – Trip unit rating (amps)	$I_{sd}$ – Short time pick-up switch settings (amps) x $I_r$										
	1200	1.5	2	2.5	3	4	5	6	7	8	10	
	1600	1.5	1.5	2	2.5	3	4	5	6	7	8	
Switch 3	$I_n$ – Trip unit rating (amps)	$t_{sd}$ – Short time delay switch settings (seconds) @ $8xI_r$										
	1200, 1600	0	0.1, $I^2t$ OFF	0.2, $I^2t$ OFF	0.3, $I^2t$ OFF	0.4, $I^2t$ OFF	0.5, $I^2t$ OFF	0.1, $I^2t$ ON	0.2, $I^2t$ ON	0.3, $I^2t$ ON	0.4, $I^2t$ ON	

#### Fixed settings

$I_n$ – Trip unit rating (amps)	$t_r$ – Long time delay	$I_i$ – Nominal instantaneous trip	$I_g$ – Ground fault pick-up (LSIG only)	$t_g$ – Ground fault delay (LSIG only)
1200	10 sec. ( $I^2t$ @ $6 \times I_r$ )	12000A	720A	.32 sec.
1600		9600A	960A	.40 sec

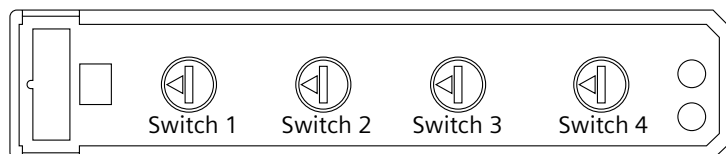
### Trip Unit Model 555



#### Electronic trip units, Model 555 with LI (Trip unit type R) or LIG (Trip unit type W) Trip Functions

Switch 1	$I_n$ – Trip unit rating (amps)	$I_r$ – Continuous amp switch settings (amps)										
	1200	400	450	500	600	630	700	800	900	1000	1200	
	1600	700	800	900	1000	1100	1200	1250	1400	1500	1600	
Switch 2	$I_n$ – Trip unit rating (amps)	$t_r$ – Long time delay switch settings (seconds) $I^2t$ @ $6 \times I_r$										
	1200, 1600	2.5	4	6	8	10	14	17	20	25	30	
Switch 3	$I_n$ – Trip unit rating (amps)	$I_i$ – Nominal instantaneous trip switch settings (amps)										
	1200	1500	1800	2400	3600	4800	6000	7200	9600	12000	12000	
	1600	2000	2400	3200	4800	6400	8000	9600	9600	9600	9600	
Switch 4 (LIG Only)	$I_n$ – Trip unit rating (amps)	$I_g$ – Ground fault pick-up switch settings (amps)										
	1200	720	480	480	480	720	720	720	1200	1200	1200	
	1600	960	640	640	640	960	960	960	1200	1200	1200	
Switch 4 (LIG Only)	$I_n$ – Trip unit rating (amps)	$t_g$ – Ground fault delay switch settings (seconds)										
	1200	0.32	0.10	0.20	0.30	0.10	0.20	0.30	0.10	0.20	0.30	
	1600	0.4	0.10	0.20	0.30	0.10	0.20	0.30	0.10	0.20	0.30	

## Trip Unit Model 555 (continued)



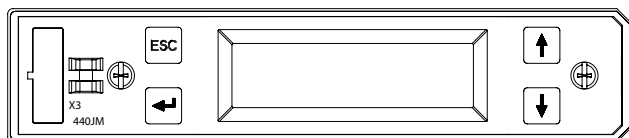
### Electronic trip unit, Model 555 with LSI (Trip unit type T) Trip Functions

Switch 1	$I_n$ – Trip unit rating (amps)	$I_r$ – Continuous amp switch settings (amps)										
	1200	700	800	900	1000	1200	700	800	900	1000	1200	
1600	1000	1200	1400	1500	1600	1000	1200	1400	1500	1600		
Switch 1	$I_n$ – Trip unit rating (amps)	$t_r$ – Long time delay switch settings (seconds) $I^2t @ 6 \times I_r$										
	1200, 1600	10	10	10	10	10	20	20	20	20	20	
Switch 2	$I_n$ – Trip unit rating (amps)	$I_{sd}$ – Short time pick-up switch settings (amps) $\times I_r$										
	1200, 1600	1.5	2	2.5	3	4	5	6	7	8	10	
Switch 3	$I_n$ – Trip unit rating (amps)	$t_{sd}$ – Short time delay switch settings (seconds)										
	1200, 1600	0	0.1, $I^2t$ OFF	0.2, $I^2t$ OFF	0.3, $I^2t$ OFF	0.4, $I^2t$ OFF	0.5, $I^2t$ OFF	0.1, $I^2t$ ON	0.2, $I^2t$ ON	0.3, $I^2t$ ON	0.4, $I^2t$ ON	
Switch 4	$I_n$ – Trip unit rating (amps)	$I_i$ – Nominal instantaneous trip switch settings (amps)										
	1200	1500	1800	2400	3600	4800	6000	7200	9600	12000	12000	
1600	2000	2400	3200	4800	6400	8000	9600	9600	9600	9600		

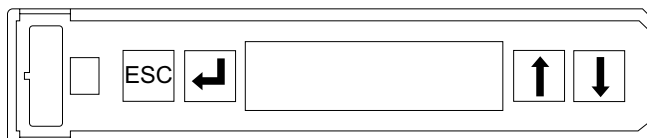
### Electronic trip unit, Model 555 with LSI (Trip unit type V) Trip Functions

Switch 1	$I_n$ – Trip unit rating (amps)	$I_r$ – Continuous amp switch settings (amps)										
	1200	700	800	900	1000	1200	700	800	900	1000	1200	
1600	1000	1200	1400	1500	1600	1000	1200	1400	1500	1600		
Switch 1	$I_n$ – Trip unit rating (amps)	$t_r$ – Long time delay switch settings (seconds) $I^2t @ 6 \times I_r$										
	1200, 1600	10	10	10	10	10	20	20	20	20	20	
Switch 2	$I_n$ – Trip unit rating (amps)	$I_{sd}$ – Short time pick-up switch settings (amps) $\times I_r$										
	1200, 1600	1.5	2	2.5	3	4	5	6	7	8	10	
Switch 2	$I_n$ – Trip unit rating (amps)	$I_i$ – Nominal instantaneous trip switch settings (amps) $\times I_n$										
	1200	5	5	5	5	5	10	10	10	10	10	
1600	5	5	5	5	5	6	6	6	6	6		
Switch 3	$I_n$ – Trip unit rating (amps)	$t_{sd}$ – Short time delay switch settings (seconds)										
	1200, 1600	0	0.1, $I^2t$ OFF	0.2, $I^2t$ OFF	0.3, $I^2t$ OFF	0.4, $I^2t$ OFF	0.5, $I^2t$ OFF	0.1, $I^2t$ ON	0.2, $I^2t$ ON	0.3, $I^2t$ ON	0.4, $I^2t$ ON	
Switch 4	$I_n$ – Trip unit rating (amps)	$I_g$ – Ground fault pick-up switch settings (amps)										
	1200	720	480	480	480	720	720	720	1200	1200	1200	
1600	960	640	640	640	960	960	960	1200	1200	1200		
Switch 4	$I_n$ – Trip unit rating (amps)	$t_g$ – Ground fault delay switch settings (seconds)										
	1200	0.32	0.10	0.20	0.30	0.10	0.20	0.30	0.10	0.20	0.30	
1600	0.4	0.10	0.20	0.30	0.10	0.20	0.30	0.10	0.20	0.30		

## Trip Unit Model 576 and 586



Trip unit model 576



Trip unit model 586

### Electronic trip units with LCD Model 576 (Trip unit type D and E) or Model 586 (Trip unit type A, G and K)

$I_n$ – Trip unit rating (amps)	$I_r$ – Continuous amps range <sup>①</sup>	$t_r$ – Long time delay settings ( $I^2t @ 6 \times I_r$ )	$I_{sd}$ – Short time pick-up range	$t_{sd}$ – Short time delay settings	$I_i$ – Nominal instantaneous trip range <sup>①②</sup>
1200	400 - 1200	2.5, 4, 6, 8, 10, 14,	1.2 - $10 \times I_r$ (10,800 A max.)	0.1, 0.2, 0.3, 0.4, 0.5 sec.	1500 - 12000A
1600	700 - 1600	17, 20, 25, 30 sec.	1.25 - $10 \times I_r$ (8,000 A max.)	( $I^2t$ off) or $I^2t @ 8 \times I_r$ ( $I^2t$ on)	2000 - 9600A
$I_n$ – Trip unit rating (amps)	$I_g$ – Ground fault pick-up range <sup>①</sup>	$t_g$ – Ground fault delay	Pre-alarm indication		
1200	400 - 1200A	0.1, 0.2, 0.3, 0.4, 0.5 sec. ( $I^2t$ off) or	80 - 100%		
1600	700 - 1200A	$I^2t @ .5 \times I_n$ ( $I^2t$ on)	$\times I_r$ (Amps)		

① Current settings are adjustable in 1-amp increments.

② Model 586, can turn function OFF. Instantaneous trip override function will be enabled to ensure self protection of circuit breaker.

### 600 V DC circuit breakers

Amp rating	Short-circuit rating 600 V DC
1200, 1400, 1600	65 kA

### Molded case switch

Amp rating	Self-protective instantaneous override	Short-circuit current rating 480 V AC <sup>①</sup>
1600	14000A	65 kA
1600	14000A	100 kA

① Max. available current when protected by an appropriate overcurrent protective device.

## Terminal Connectors

Wire range	Cables per connectors	Wire size	Torque lb-in. (Nm)	Catalog number
1/0 – 750 kcmil	6 (Cu / Al)	1/0 - 750	375 (42.4)	<b>3TA6PG750</b> ①②
300 – 600 kcmil	5 (Cu / Au)	300 - 400 500 - 600	600 (67.79) 780 (88.13)	<b>TA5P600</b> ③
600 – 750 kcmil	4 (Cu / Al)	600 - 750	480 (54.23)	<b>TA4P750</b> ③
300 – 600 kcmil	6 (Cu / Al)	300 - 600	600 (67.79)	<b>TA6R600</b> ③
300 – 600 kcmil	5 (Cu)	300 - 600	600 (67.79)	<b>TC5R600</b> ③④

① Package of 3 connectors.

② Requires lug mounting assembly LMAP1600.

③ Requires breaker mounting base MBPG1600 or MBPG1601.

④ Required for 100% rated PG breakers. Requires 90°C cable sized at 75°C ampacity.

## Internal accessories

Auxiliary and alarm switch kits		
Description	Mounting pocket	Catalog number
2 Aux + 2 Alarm switches (2NO + 2NC + 1 base)	Left	<b>ASKP3</b>
4 Aux. switches (2NO + 2NC + 1 base)	Left, right	<b>ASKP4</b>

Auxiliary and alarm switch mounting base only		
Description	Mounting pocket	Catalog number
For 2 Aux + 2 Alarm	Left	<b>AMBP2</b>
For 4 Aux	Left, right	<b>AMBP1</b>

Shunt trip	
Control voltage	Catalog number
48 – 60 VAC	<b>STRPM60</b>
110 – 127 VAC	<b>STRPN120</b>
208 – 277 VAC	<b>STRPS277</b>
380 – 600 VAC	<b>STRPV600</b>
24 VDC	<b>STRPB24DC</b>
48 – 60 VDC	<b>STRPC60DC</b>
110 – 127 VDC	<b>STRPD125DC</b>
220 – 250 VDC	<b>STRPE250DC</b>

Shunt trips or UVR's may be mounted in the Right Pocket only.

Internal accessory locations	
Left accessory pocket	Right accessory pocket
Up to 4 auxiliary switches <sup>①</sup>	Shunt trip or UVR or up to 4 auxiliary switches <sup>①</sup>
Up to 2 auxiliary switches <sup>②</sup> + 2 alarm switches	Shunt trip or UVR or up to 4 auxiliary switches <sup>①</sup>

Maximum of 8 switches total.

Maximum of 2 alarm switches, Left Pocket only.

Maximum of 4 switches in Left Pocket.

① Max load is 5A per switch when 4 switches are mounted.

② Max load is 10A per switch.

Auxiliary / Alarm switches only (requires a base)	
Description	Catalog number
1 NO (normally open contact)	<b>ASWPA</b>
1 NC (normally closed contact)	<b>ASWPB</b>

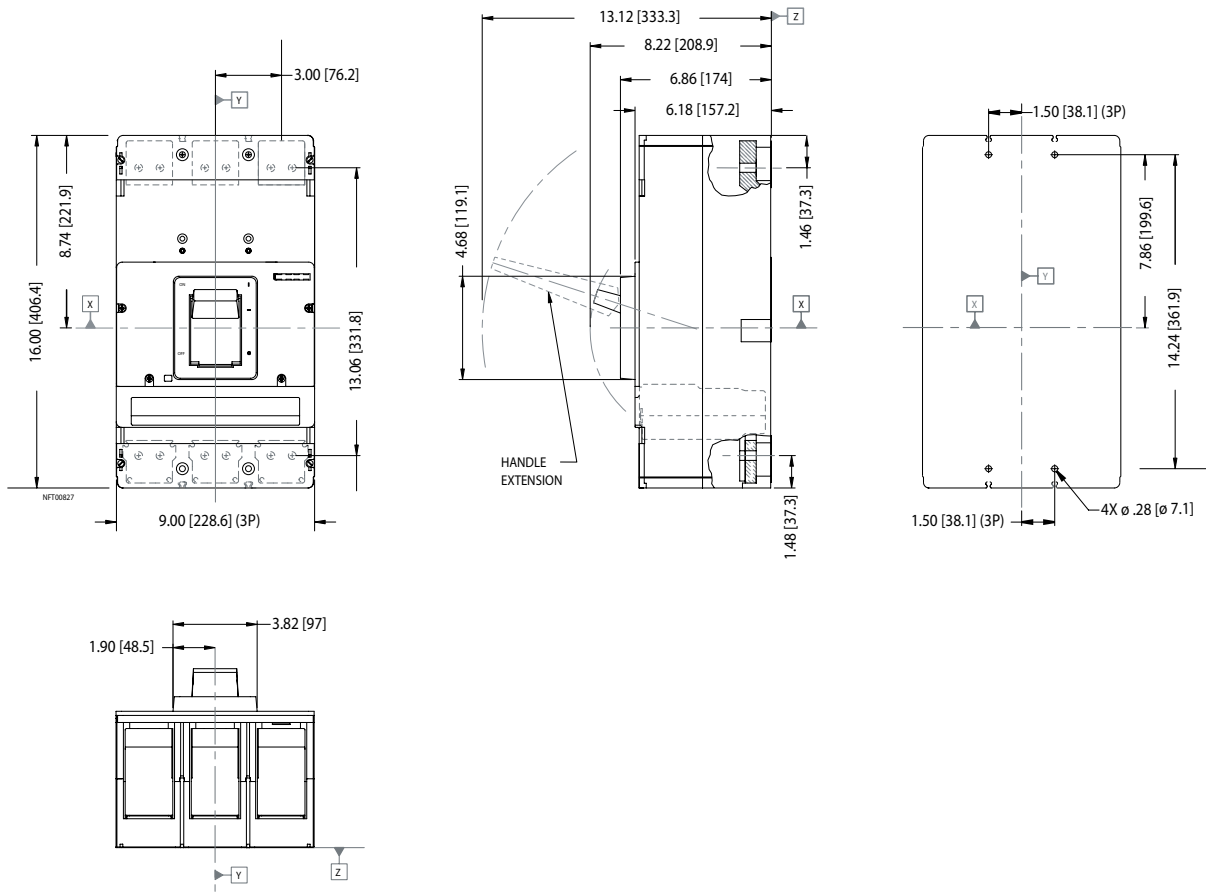
(A) Normally open contacts are open when the breaker contacts are open.

(B) Normally closed contacts are closed when the breaker contacts are open.

Undervoltage release	
Control voltage	Catalog number
110 – 127 VAC	<b>UVRPN120</b>
220 – 250 VAC	<b>UVRPR240</b>
208 VAC	<b>UVRPP208</b>
277 VAC	<b>UVRPS277</b>
380 – 425 VAC	<b>UVRPT415</b>
440 – 480 VAC	<b>UVRPU480</b>
12 VDC	<b>UVRPA12DC</b>
24 VDC	<b>UVRPB24DC</b>
48 VDC	<b>UVRPC48DC</b>
60 VDC	<b>UVRPG60DC</b>
110 – 127 VDC	<b>UVRPD125DC</b>
220 – 250 VDC	<b>UVRPE250DC</b>

## Dimensions

(complete breaker)



## Shipping weight, lbs. (kg)

Poles	Frame	Trip unit	Complete breaker
2,3	60.2 (27.3)	8.8 (4.0)	69.0 (31.3)

## Permissible mounting positions

