

# VL Circuit Breaker – FG 250A frame

## Breaker type

Defined by the 3rd character of the catalog number

K – Global, 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.

Due to the location of the magnetic tripping solenoid, the left accessory pocket of electronic breakers is not available for accessories. 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	600Y/347	240	415	690	250	500	600 <sup>②</sup>
N	NFGB	65	35	18	65 / 65	40 / 40	12 / 6	30	18	–
H	HFGB	100	65	18	100 / 75	70 / 70	12 / 6	30	18	42
L	LFGB	200	100	18	200 / 150	100 / 75	12 / 6	30	18	–

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

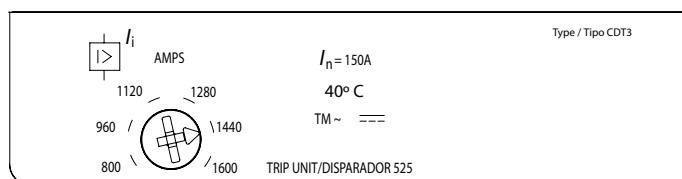
① For DC applications and wiring diagrams, see p. 5 of VL Information Guide.

② Special version, Type HFGB. See Speedfax catalog for more information.

## Trip Unit Model 525

### Thermal magnetic trip units, model 525

$I_n$ – Trip unit rating (amps)	$I_j$ – Nominal instantaneous trip adjustable range (amps)					
100	625	750	875	1000	1125	1250
110	800	960	1120	1280	1440	1600
125	800	960	1120	1280	1440	1600
150	800	960	1120	1280	1440	1600
175	1000	1200	1400	1600	1800	2000
200	1000	1200	1400	1600	1800	2000
225	1250	1500	1750	2000	2250	2500
250	1250	1500	1750	2000	2250	2500



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)									
		100	40	40	45	50	60	63	70	80	90
	150	60	60	63	70	80	90	100	110	125	150
	250	70	80	100	125	150	160	175	200	225	250

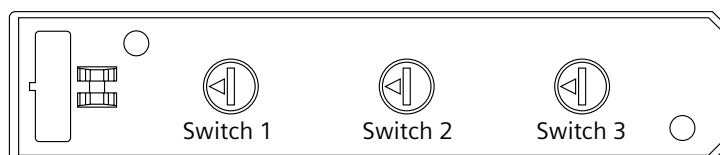
Switch 2	$I_n$ – Trip unit rating (amps)	$t_r$ – Long time delay switch settings (seconds) Pt @ 6 x $I_r$									
		100, 150, 200	2.5	4	6	8	10	14	17	20	25

Switch 3	$I_n$ – Trip unit rating (amps)	$I_j$ – Nominal instantaneous trip switch settings (amps)										
		100	125	150	200	300	400	500	600	800	1000	1100
		150	187	225	300	450	600	750	900	1200	1500	1650
		250	312	375	500	750	1000	1250	1500	2000	2500	2750

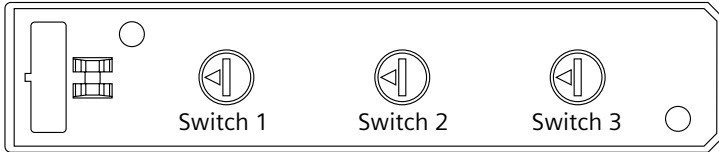
## Fixed settings (LIG only)

$I_n$ – Trip unit rating (amps)	$I_g$ – Ground fault pickup (amps)	$t_g$ – Ground fault delay
100	80	.07 sec
150	120	.07 sec
250	200	.07 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)										
	100	40	40	45	50	60	63	70	80	90	100	100
150	60	60	63	70	80	90	100	110	125	150	150	
250	70	80	100	125	150	160	175	200	225	250	250	

Switch 2	$I_n$ – Trip unit rating (amps)	$I_{sd}$ – Short time pick-up switch settings (amps) x $I_r$									
	100, 150, 250	1.5	2	2.5	3	4	5	6	7	8	10

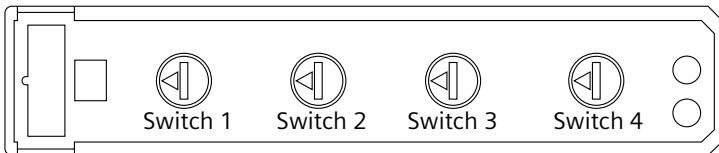
  

Switch 3	$I_n$ – Trip unit rating (amps)	$t_{sd}$ – Short time delay switch settings (seconds) @ $8xI_r$										
	100, 150, 250	0	0.1, I <sub>r</sub> t OFF	0.2, I <sub>r</sub> t OFF	0.3, I <sub>r</sub> t OFF	0.4, I <sub>r</sub> t OFF	0.5, I <sub>r</sub> t OFF	0.1, I <sub>r</sub> t ON	0.2, I <sub>r</sub> t ON	0.3, I <sub>r</sub> t ON	0.4, I <sub>r</sub> t 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)
100	10 sec. (I <sub>r</sub> t @ 6 x $I_r$ )	1100A	80A	.07 sec.
150		1650A	120A	.07 sec
250		2750A	200A	.07 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)										
	100	40	45	50	55	60	63	70	80	90	100	100
150	60	63	70	75	80	90	100	110	125	150	150	
250	70	80	100	125	150	160	175	200	225	250	250	

Switch 2	$I_n$ – Trip unit rating (amps)	$t_r$ – Long time delay switch settings (seconds) I <sub>r</sub> t @ 6 x $I_r$									
	100, 150, 250	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)										
	100	125	150	200	300	400	500	600	800	1000	1100	
150	187	225	300	450	600	750	900	1200	1500	1650		
250	312	375	500	750	1000	1250	1500	2000	2500	2750		

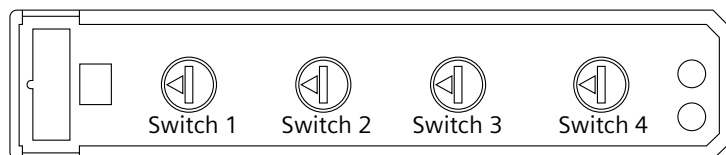
  

Switch 4 (LIG Only)	$I_n$ – Trip unit rating (amps)	$I_g$ – Ground fault pick-up switch settings (amps)										
	100	80	40	40	40	60	60	60	100	100	100	
150	120	60	60	60	90	90	90	150	150	150		
250	200	100	100	100	150	150	150	250	250	250		

Switch 4 (LIG Only)	$I_n$ – Trip unit rating (amps)	$t_g$ – Ground fault delay switch settings (seconds)										
	100, 150, 250	0.07	0.10	0.20	0.30	0.10	0.20	0.30	0.10	0.20	0.30	

## Trip Unit Model 555 (continued)



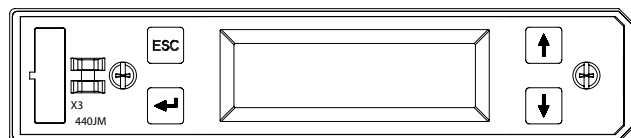
### Electronic trip unit, Model 555 with LSI (Trip unit type T) Trip Functions

Switch 1	$I_n$ – Trip unit rating (amps)	$I_r$ – Continuous amp switch settings (amps)										
	100	40	50	60	80	100	40	50	60	80	100	
	150	70	80	100	125	150	70	80	100	125	150	
	250	125	150	200	225	250	125	150	200	225	250	
	$I_n$ – Trip unit rating (amps)	$t_r$ – Long time delay switch settings (seconds) $I_{Pt}$ @ $6 \times I_r$										
	100, 150, 250	4	4	4	4	4	14	14	14	14	14	
Switch 2	$I_n$ – Trip unit rating (amps)	$I_{sd}$ – Short time pick-up switch settings (amps) $\times I_r$										
	100, 150, 250	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)										
	100, 150, 250	0	0.1, $I_{Pt}$ OFF	0.2, $I_{Pt}$ OFF	0.3, $I_{Pt}$ OFF	0.4, $I_{Pt}$ OFF	0.5, $I_{Pt}$ OFF	0.1, $I_{Pt}$ ON	0.2, $I_{Pt}$ ON	0.3, $I_{Pt}$ ON	0.4, $I_{Pt}$ ON	
Switch 4	$I_n$ – Trip unit rating (amps)	$I_i$ – Nominal instantaneous trip switch settings (amps)										
	100	125	150	200	300	400	500	600	800	1000	1100	
	150	187	225	300	450	600	750	900	1200	1500	1650	
	250	312	375	500	750	1000	1250	1500	2000	2500	2750	

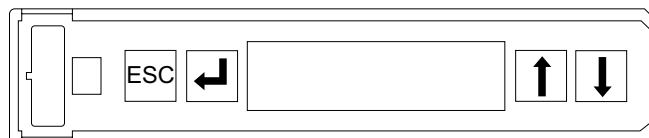
### Electronic trip unit, Model 555 with LSIG (Trip unit type V) Trip Functions

Switch 1	$I_n$ – Trip unit rating (amps)	$I_r$ – Continuous amp switch settings (amps)										
	100	40	50	60	80	100	40	50	60	80	100	
	150	70	80	100	125	150	70	80	100	125	150	
	250	125	150	200	225	250	125	150	200	225	250	
	$I_n$ – Trip unit rating (amps)	$t_r$ – Long time delay switch settings (seconds) $I_{Pt}$ @ $6 \times I_r$										
	100, 150, 250	4	4	4	4	4	14	14	14	14	14	
Switch 2	$I_n$ – Trip unit rating (amps)	$I_{sd}$ – Short time pick-up switch settings (amps) $\times I_r$										
	100, 150, 250	1.5	2	2.5	3	4	5	6	7	8	10	
Switch 3	$I_n$ – Trip unit rating (amps)	$I_i$ – Nominal instantaneous trip switch settings (amps) $\times I_n$										
	100, 150, 250	5	5	5	5	5	11	11	11	11	11	
Switch 3	$I_n$ – Trip unit rating (amps)	$t_{sd}$ – Short time delay switch settings (seconds)										
	60, 100, 150	0	0.1, $I_{Pt}$ OFF	0.2, $I_{Pt}$ OFF	0.3, $I_{Pt}$ OFF	0.4, $I_{Pt}$ OFF	0.5, $I_{Pt}$ OFF	0.1, $I_{Pt}$ ON	0.2, $I_{Pt}$ ON	0.3, $I_{Pt}$ ON	0.4, $I_{Pt}$ ON	
Switch 4	$I_n$ – Trip unit rating (amps)	$I_g$ – Ground fault pick-up switch settings (amps)										
	100	80	40	40	40	60	60	60	100	100	100	
	150	120	60	60	60	90	90	90	150	150	150	
	250	200	100	100	100	150	150	150	250	250	250	
	$I_n$ – Trip unit rating (amps)	$t_g$ – Ground fault delay switch settings (seconds)										
	60, 100, 150	0.07	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>②③</sup>
100	40 - 100	2.5, 4, 6, 8, 10, 14,	1.25 - 10 $\times I_r$	0.1, 0.2, 0.3, 0.4, 0.5 sec. or $I^2t @ 8 \times I_r$	125 - 1100A
150	60 - 150	17, 20, 25, 30 sec.			187 - 1650A
250	70 - 250				313 - 2750A

$I_n$ – Trip unit rating (amps)	$I_g$ – Ground fault pick-up range <sup>①</sup>	$t_g$ – Ground fault delay	Pre-alarm indication
100	40 - 100A	0.1, 0.2, 0.3, 0.4, 0.5 sec. $I^2t @ .5 \times I_n$	80 - 100% $\times I_r$ (Amps)
150	60 - 150A		
250	100 - 250A		

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.

### Motor circuit protectors

Amp rating	$I_i$ – Nominal instantaneous trip adjustable range (amps)
250	60 - 1200 <sup>①</sup>
250	1000 - 2000 <sup>②</sup>
250	1750 - 3500 <sup>③</sup>

① Settings adjustable in increments of 120 amps.

② Settings adjustable in increments of 200 amps.

③ Settings adjustable in increments of 350 amps.

### Molded case switch

Amp rating	Self-protective instantaneous override	Short-circuit current rating 480 V AC <sup>①</sup>
250	3500A	65 kA
250	3500A	100 kA

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

### 600 V DC circuit breakers

Amp rating	Short-circuit rating 600 V DC
100, 150, 250	42 kA

## Terminal Connectors

Wire range	Cables per connectors	Wire size	Torque lb-in. (Nm)	Catalog number
#3 – 350 kcmil	1 (Cu only)	#3 – 350	220 (25)	3TW1FG350
#4 – 350 kcmil	1 (Cu / Al)	#4 #3 – #1 1/0 – 350	150 (16.95) 200 (22.60) 275 (31.07)	3TAW1FG350 <sup>②</sup>
#4 – 350 kcmil	1 (Cu only)	#4 #3 – #1 1/0 – 350	150 (16.95) 200 (22.60) 275 (31.07)	3TCW1FG350

### Compression connector kits

#6 – 350	1 (Cu / Al)			3CLF350
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### Distribution connector kits

#14 – 2/0	3 (Cu only)	#14 – #8 #6 – 2/0	40 (4.52) 120 (13.5)	3TA3FG20
#14 – #4	6 (Cu only)	#14 – #4	35 (3.95)	3TA6FG04

① Packaged as 3 connectors.

② Standard connectors when an "L" suffix is used on an assembled breaker catalog number.

## Internal accessories

Auxiliary and alarm switch kits		
Description	Mounting pocket	Catalog number
1 Alarm switch 1 A/B <sup>①</sup> bases AMBL2 and AMBL3	Left, right <sup>②</sup>	ASKL1
2 Aux. switches 1A + 1B base AMBL1	Left, right	ASKL2
2 Aux. + 1 Alarm switch 1A + 1B, 1A/B bases <sup>①</sup> AMBL2 and AMBL3	Left, right <sup>②</sup>	ASKL3

① Includes 1A and 1B contact for alarm purposes, only one of which may be installed at any time.

② Kit includes 2 bases - one for mounting switches in left pocket and another for mounting in right pocket.

Auxiliary and alarm switch mounting base only		
Description	Mounting pocket	Catalog number
For 2 Aux + 1 Alarm	Left	AMBL2
For 2 Aux + 1 Alarm	Right	AMBL3
For 3 Aux	Left, right	AMBL1

Shunt trip	
Control voltage	Catalog number
48 – 60 VAC	STRLM60
110 – 127 VAC	STRLN120
208 – 277 VAC	STRLS277
380 – 600 VAC	STRLV600
24 VDC	STRLB24DC
48 – 60 VDC	STRLC60DC
110 – 127 VDC	STRLD125DC
220 – 250 VDC	STRLE250DC

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

Internal accessory locations	
Left accessory pocket	Right accessory pocket
Up to 3 auxiliary switches	Shunt trip or UVR or up to 3 auxiliary switches
Up to 2 auxiliary switches + 1 alarm switch	Shunt trip or UVR or up to 2 auxiliary switches + 1 alarm switch

Maximum of 6 switches total.

Maximum of 2 alarm switches, 1 Left + 1 Right Pocket.

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

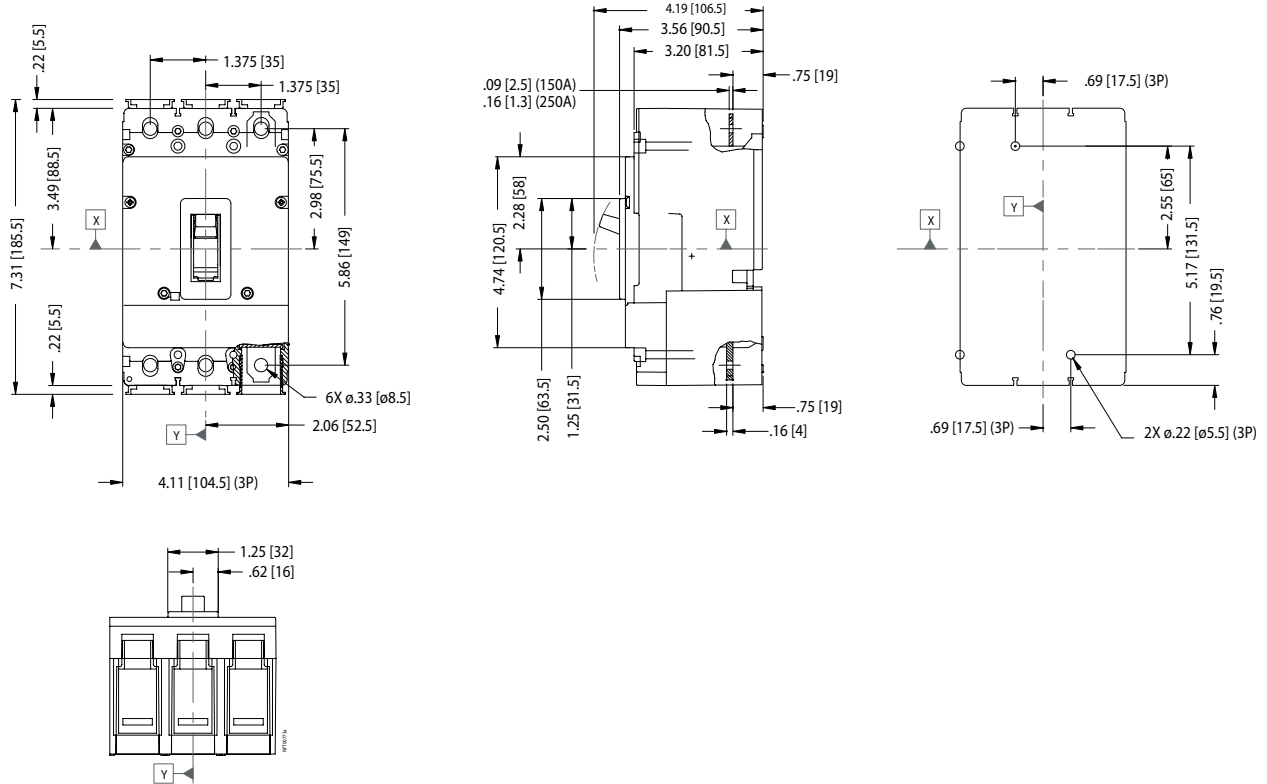
(A) Normally open contacts are open when the breaker contacts are open.

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

Undervoltage release	
Control voltage	Catalog number
110 – 127 VAC	UVRLN120
220 – 250 VAC	UVRLR240
208 VAC	UVRLP208
277 VAC	UVRLS277
380 – 425 VAC	UVRLT415
440 – 480 VAC	UVRLU480
12 VDC	UVRLA12DC
24 VDC	UVRLB24DC
48 VDC	UVRLC48DC
60 VDC	UVRLG60DC
110 – 127 VDC	UVRLD125DC
220 – 250 VDC	UVRLE250DC

## Dimensions

(complete breaker)



## Shipping weight, lbs. (kg)

Poles	Frame only	Trip unit		Complete breaker
		Thermal-mag	Electronic	
2,3	3.45 (1.56)	1.35 (.62)	1.60 (.72)	6.2 (2.8)

## Permissible mounting positions

