

Vitreous Wirewound Resistors with Lugs



FEATURES

- Complete welded construction
- Ceramic core
- High quality vitreous coating
- Available in adjustable = “E” or non inductive design = “Ni”
- Lugs with various termination styles suitable for soldering or bolt connection
- TCR 100. . .180 ppm/K



STANDARD ELECTRICAL SPECIFICATIONS								
GLOBAL MODEL	HISTORICAL MODEL	TERMINAL	SIZE DIN 41432	POWER RATING $P_{40^{\circ}\text{C}}$ W	LIMITING VOLTAGE V	RESISTANCE RANGE Ω	TOLERANCE $\pm \%$	E-SERIES
GWS0153	GWS 15	SL	9 x 45	15	250	4R3 - 20K	10	E 12, E 24, DIN 41432
						30R - 15K	5	
						220R - 20K	3	
GWS0158	GWS 15 E	SL	9 x 45	10	250	4R3 - 620R	10	E 12, E 24
							5	
							10	
GWS015D	GWS 15 Ni	SL	9 x 45	10	250	5R1 - 910R	10	
							5	
							5	
GWS0203	GWS 20	SL	-	20	300	3R6 - 30K	10	E 12, E 24
						SS		
GWS0204	GWS 20 E	SL	-	15	300	180R - 30K	3	
						SS		
GWS0208	GWS 20 Ni	SL	-	15	300	5R1 - 1K3	10	
						SS		
GWS0209	GWS 20 Ni	SL	-	15	300	5R1 - 1K3	10	E 12, E 24, DIN 41432
						SS		
GWS020D	GWS 20 Ni	SL	-	15	300	3R6 - 39K	10	
						SS		
GWS020E	GWS 20 Ni	SL	-	15	300	30R - 20K	3	
						SS		
GWS0253	GWS 25	SL	13 x 55	25	300	5R1 - 1K3	10	E 12, E 24
						SS		
GWS0254	GWS 25 E	SL	13 x 55	18	300	6R8 - 1K8	10	
						SS		
GWS0258	GWS 25 Ni	SL	13 x 55	18	300	5R1 - 1K3	10	
						SS		
GWS0259	GWS 25 Ni	SL	13 x 55	18	300	6R8 - 1K8	10	E 12, E 24
						SS		
GWS025D	GWS 25 Ni	SL	13 x 55	18	300	5R1 - 47K	10	
						SS		
GWS025E	GWS 25 Ni	SL	13 x 55	18	300	-	3	
						SS		
GWS0353	GWS 35	SL	-	30	400	6R8 - 1K6	10	E 12, E 24
						SS		
GWS0354	GWS 35 E	SL	-	22	400	8R2 - 2K4	10	
						SS		
GWS0358	GWS 35 Ni	SL	-	22	400	8R2 - 2K4	10	
						SS		
GWS0359	GWS 35 Ni	SL	-	22	400	8R2 - 2K4	10	E 12, E 24, DIN 41432
						SS		
GWS035D	GWS 35 Ni	SL	-	22	400	3R3 - 62K	10	
						SS		
GWS035E	GWS 35 Ni	SL	-	22	400	33R - 24K	3	
						SS		
GWS0503	GWS 50	SL	16 x 63	40	400	100R - 62K	2	
GWS0504		SS						
GWS0505		SB						
GWS0507		FST						



STANDARD ELECTRICAL SPECIFICATIONS										
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GWS0508	GWS 50 E	SL	16 x 63	30	400	8R2 - 2K0	10	E 12, E 24		
GWS0509		SS					5			
GWS050A		SB								
GWS050C		FST								
GWS050D	GWS 50 Ni	SL				10R - 3K0			10	
GWS050E		SS					5			
GWS050F		SB								
GWS050H		FST								
GWS0753	GWS 75	SL	16 x 100	65	800	7R5 - 130K		10	E 12, E 24, DIN 41432	
GWS0754		SS					5			
GWS0755		SB						15R - 39K		3
GWS0757		FST						30R - 130K		2
GWS0758	GWS 75 E	SL				45		18R - 3K9		10
GWS0759		SS					5			
GWS075A		SB								
GWS075C		FST								
GWS075D	GWS 75 Ni	SL	22R - 6K2	10						
GWS075E		SS		5						
GWS075F		SB								
GWS075H		FST								
GWS1004	GWS 100	SS	24 x 100		80	600	6R8 - 110K	10	E 12, E 24, DIN 41432	
GWS1006		SSB		5						
GWS1005		SB						20R - 51K		3
GWS1007		FST						75R - 110K		2
GWS1009	GWS 100 E	SS					60	13R - 5K1		10
GWS100B		SSB		5						
GWS100A		SB								
GWS100C		FST								
GWS100E	GWS 100 Ni	SS	24R - 6K8		10					
GWS100G		SSB		5						
GWS100F		SB								
GWS100H		FST								

STANDARD ELECTRICAL SPECIFICATIONS										
GLOBAL MODEL	HISTORICAL MODEL	TERMINAL	SIZE DIN 41432	POWER RATING $P_{40^{\circ}\text{C}}$ W	LIMITING VOLTAGE V	RESISTANCE RANGE Ω	TOLERANCE \pm %	E-SERIES		
GWS2204	GWS 220	SS	24 x 165	160	1250	13R - 160K	10	E 12, E 24, DIN 41432		
GWS2206		SSB					5			
GWS2205		SB					3			
GWS2207		FST					2			
GWS2209	GWS 220 E	SS		120		30R - 10K	10	E 12, E 24		
GWS220B		SSB					5			
GWS220A		SB								
GWS220C		FST								
GWS220E	GWS 220 Ni	SS				51R - 16K			10	5
GWS220G		SSB								
GWS220F		SB								
GWS220H		FST								
GWS3004	GWS 300	SS		24 x 165		300	2500	24R - 300K	10	E 12, E 24, DIN 41432
GWS3006		SSB							5	
GWS3005		SB							3	
GWS3007		FST							2	
GWS3009	GWS 300 E	SS	200		56R - 20K	10		E 12, E 24		
GWS300B		SSB				5				
GWS300A		SB								
GWS300C		FST								
GWS300E	GWS 300 Ni	SS			100R - 30K				10	5
GWS300G		SSB								
GWS300F		SB								
GWS300H		FST								
GWS5004	GWS 500	SS	36 x 330		500	3000		39R - 270K	10	E 12, E 24, DIN 41432
GWS5006		SSB							5	
GWS5005		SB							3	
GWS5007		FST							2	
GWS5009	GWS 500 E	SS		300	100R - 36K		10	E 12, E 24		
GWS500B		SSB					5			
GWS500A		SB								
GWS500C		FST								



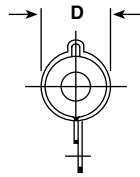
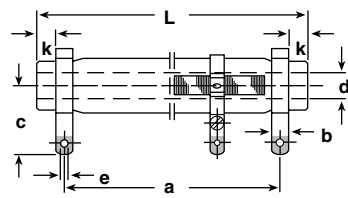
STANDARD ELECTRICAL SPECIFICATIONS									
GLOBAL MODEL	HISTORICAL MODEL	TERMINAL	SIZE DIN 41432	POWER RATING $P_{40^\circ C}$ W	LIMITING VOLTAGE V	RESISTANCE RANGE Ω	TOLERANCE $\pm \%$	E-SERIES	
GWSN844	GWS 30/100	SS		150	1600	9R1 - 100K	10	E 12, E 24, DIN 41432	
GWSN846		SSB				5			
GWSN845		SB				3			
GWSN847		FST				27R - 100K	2		
GWSN849	GWS 30/100 E	SS		110		2300	22R - 8K2	10	E 12, E 24
GWSN84B		SSB						5	
GWSN84A		SB						3	
GWSN84C		FST						27R - 160K	
GWSN914	GWS 30/133	SS		200	2300		13R - 160K	10	E 12, E 24, DIN 41432
GWSN916		SSB					5		
GWSN915		SB					3		
GWSN917		FST					27R - 160K	2	
GWSN919	GWS 30/133 E	SS	130	2300		36R - 13K	10	E 12, E 24	
GWSN91B		SSB					5		
GWSN91A		SB					3		
GWSN91C		FST					27R - 160K		2

GLOBAL PART NUMBER INFORMATION																							
New Global Part Numbering: GWS01531009KLX000 (preferred part number format)																							
<table border="1" style="width:100%; text-align:center;"> <tr> <td>G</td><td>W</td><td>S</td><td>0</td><td>1</td><td>5</td><td>3</td><td>1</td><td>0</td><td>0</td><td>9</td><td>K</td><td>L</td><td>X</td><td>0</td><td>0</td><td>0</td> </tr> </table>							G	W	S	0	1	5	3	1	0	0	9	K	L	X	0	0	0
G	W	S	0	1	5	3	1	0	0	9	K	L	X	0	0	0							
MODEL	TCR/MATERIAL	SPECIAL CHARACTER	VALUE	TOLERANCE	PACKAGING	SPECIAL																	
GWS	015 = 15 020 = 20 025 = 25 035 = 35 050 = 50 075 = 75 100 = 100 220 = 220 300 = 300 500 = 500 N84 = 30/100 N91 = 30/133	3 = SL 4 = SS 5 = SB 6 = SSB 7 = FST 8 = E SL 9 = E SS A = E SB B = E SSB C = E FST D = NI SL E = NI SS F = NI SB G = NI SSB H = NI FST I = SWI SL J = SWI SS K = SWI SB L = SWI SSB M = SWI FST Z = Value overflow (BV)	3 digit value 1 digit multiplier MULTIPLIER 8 = $\times 10^{-2}$ 9 = $\times 10^{-1}$ 0 = $\times 10^0$ 1 = $\times 10^1$ 2 = $\times 10^2$ 3 = $\times 10^3$	G = $\pm 2.0\%$ H = $\pm 3.0\%$ J = $\pm 5.0\%$ K = $\pm 10.0\%$	(See Packing table)	The 5 digit BV number will be encoded using a 36 character code. This code contains numbers 0...9 and letters A...Z (36 characters total) and allows to encode at least 46 655 five digit BV numbers. 000 = Standard																	
Historical Part Number Example: GWS 15 SL 10R 10% (will continue to be accepted)																							
GWS 15		SL	10R	10%																			
HISTORICAL MODEL		SPECIAL CHARACTER	VALUE	TOLERANCE																			

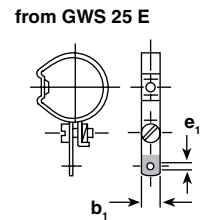
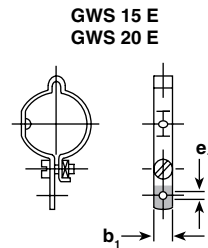
PACKAGING TABLE		
SAP	DESCRIPTION	TYPE
LX	Loose pack, without quantity	all
ZX	Special pack (with BV #), without quantity Note: LX = B29 on Dale legacy ZX = S51 on Dale legacy	all

DIMENSIONS

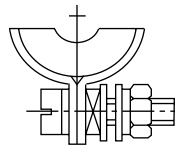
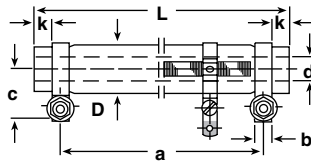
SL TERMINALS



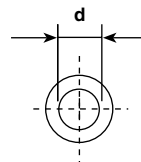
ADJUSTABLE LUGS



SS TERMINALS



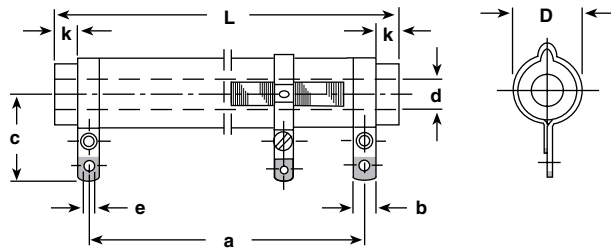
CORE SECTION



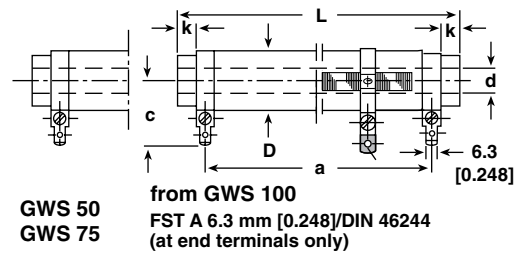
MODEL	DIMENSIONS in millimeters [inches]							
	GWS 15 GWS 15 E GWS 15 Ni		GWS 20 GWS 20 E GWS 20 Ni		GWS 25 GWS 25 E GWS 25 Ni		GWS 35 GWS 35 E GWS 35 Ni	
TERMINAL	SL		SL	SS	SL	SS	SL	SS
DIMENSION								
D	7.5 ± 0.5 [0.295 ± 0.020]		9.5 ± 0.5 [0.374 ± 0.020]		11.8 ± 0.8 [0.465 ± 0.031]		11.8 ± 0.8 [0.465 ± 0.031]	
L	45 ± 1.5 [1.772 ± 0.059]		50 ± 1.5 [1.969 ± 0.059]		55 ± 1.5 [2.165 ± 0.059]		62 ± 2 [2.441 ± 0.079]	
a ± 2 [a ± 0.079]	36 [1.417]		39 [1.535]	40 [1.575]	43 [1.693]	44 [1.732]	50 [1.969]	51 [2.008]
b	4 [0.157]		4 [0.157]	5 [0.197]	4 [0.157]	5 [0.197]	4 [0.157]	5 [0.197]
b ₁	4 [0.157]		4 [0.157]	4 [0.157]	5 [0.197]	5 [0.197]	5 [0.197]	5 [0.197]
c	15.5 [0.610]		18 [0.709]	10.5 [0.413]	19 [0.748]	11.5 [0.453]	19 [0.748]	11.5 [0.453]
d	2.6 [0.102]		3.5 [0.138]	3.5 [0.138]	5.5 [0.217]	5.5 [0.217]	5.5 [0.217]	5.5 [0.217]
e	1.5 [0.059]		2 [0.079]	M3 x 16	2 [0.079]	M3 x 16	2 [0.079]	M3 x 16
e ₁	2.8 [0.110]		2.8 [0.110]	2.8 [0.110]	2.8 [0.110]	2.8 [0.110]	2.8 [0.110]	2.8 [0.110]
k	2.5 [0.098]		3.5 [0.138]	2.5 [0.098]	4 [0.157]	3 [0.118]	4 [0.157]	3 [0.118]
WEIGHT (g)	6		8		13		15	

DIMENSIONS (continued)

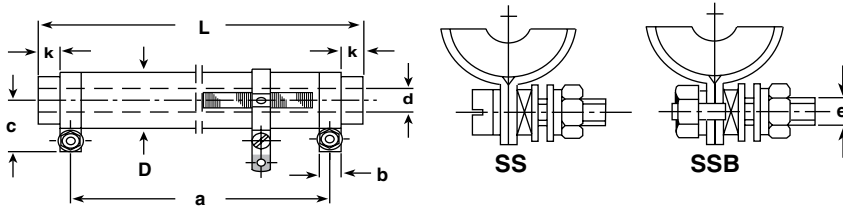
SL TERMINALS



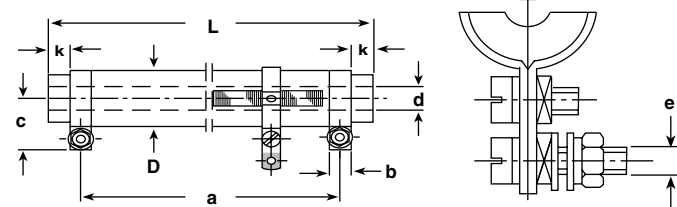
FST TERMINALS



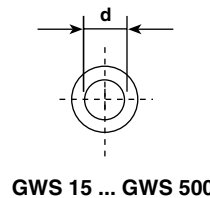
SS AND SSB TERMINALS



SB TERMINALS



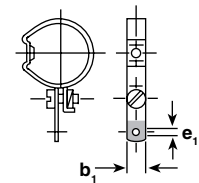
CORE SECTION



GWS 15 ... GWS 500

ADJUSTABLE LUGS

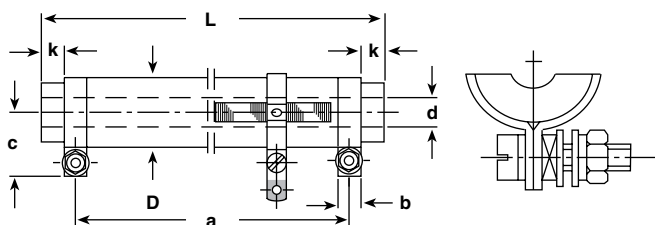
from GWS 25 E



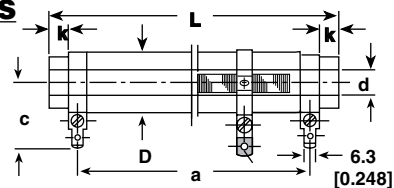
MODEL	DIMENSIONS in millimeters [inches]															
	GWS 50 GWS 50 E GWS 50 Ni				GWS 75 GWS 75 E GWS 75 Ni				GWS 100 GWS 100 E GWS 100 Ni				GWS 220 GWS 220 E GWS 220 Ni			
TERMINAL	SL	SS	SB	FST	SL	SS	SB	FST	SL	SSB	SB	FST	SS	SSB	SB	FST
DIMENSION																
D	14.8 ± 0.8 [0.583 ± 0.031]				14.8 ± 0.8 [0.583 ± 0.031]				22.3 ± 1.3				22.3 ± 1.3			
L	62 ± 2 [2.441 ± 0.079]				100 ± 2 [4.100 ± 0.080]				100 ± 2 [4.100 ± 0.080]				165 ± 2 [6.760 ± 0.080]			
a ± 2 [a ± 0.079]	50 [1.969]	51 [2.008]	51 [2.008]	48 [1.890]	86 [3.520]	87 [3.570]	87 [3.570]	84 [3.440]	72 [2.950]				136 [5.570]			
b	4 [0.157]	5 [0.197]	5 [0.197]	6.3 [0.248]	4 [0.157]	5 [0.197]	5 [0.197]	6.3 [0.248]	8 [0.330]	8 [0.330]	8 [0.330]	6.3 [0.620]	8 [0.330]	8 [0.330]	8 [0.330]	6.3 [0.620]
b ₁	5 [0.197]	5 [0.197]	5 [0.197]	5 [0.197]	5 [0.197]	5 [0.197]	5 [0.197]	5 [0.197]	5 [0.197]	5 [0.197]	5 [0.197]	5 [0.197]	5 [0.197]	5 [0.197]	5 [0.197]	5 [0.197]
c	20.5 [0.807]	13 [0.512]	23 [0.906]	23.5 [0.925]	20.5 [0.807]	13 [0.512]	23 [0.906]	23.5 [0.925]	18.5 [0.760]	18.5 [0.760]	29.5 [1.210]	27 [1.110]	18.5 [0.760]	18.5 [0.760]	29.5 [1.210]	27 [1.110]
d	5.5 [0.217]	5.5 [0.217]	5.5 [0.217]	5.5 [0.217]	5.5 [0.217]	5.5 [0.217]	5.5 [0.217]	5.5 [0.217]	10 [0.410]	10 [0.410]	10 [0.410]	10 [0.410]	10 [0.410]	10 [0.410]	10 [0.410]	10 [0.410]
e	2 [0.079]	M3 x 16		-	2 [0.079]	M3 x 16		-	M4 x 20			-	M4 x 20			-
e ₁	3.2 [0.126]	3.2 [0.126]	3.2 [0.126]	3.2 [0.126]	3.2 [0.126]	3.2 [0.126]	3.2 [0.126]	3.2 [0.126]	3.2 [0.126]	3.2 [0.126]	3.2 [0.126]	3.2 [0.126]	3.2 [0.126]	3.2 [0.126]	3.2 [0.126]	3.2 [0.126]
k	4 [0.157]	3 [0.118]	3 [0.118]	3 [0.118]	5 [0.197]	4 [0.157]	4 [0.157]	4 [0.157]	10 [0.410]	10 [0.410]	10 [0.410]	10 [0.410]	10.5 [0.430]	10.5 [0.430]	10.5 [0.430]	10.5 [0.430]
WEIGHT (g)	25				40				92				135			

DIMENSIONS (continued)

SS TERMINALS

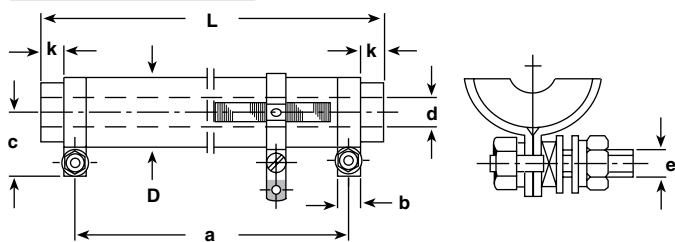


FST TERMINALS

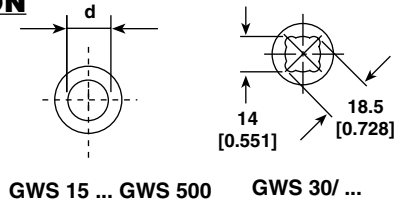


FST A 6.3 mm [0.248]/DIN 46244 (at end terminals only)

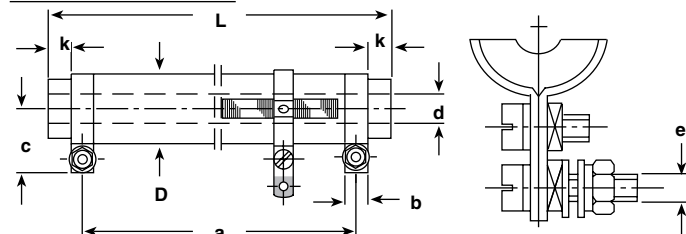
SSB TERMINALS



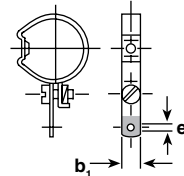
CORE SECTION



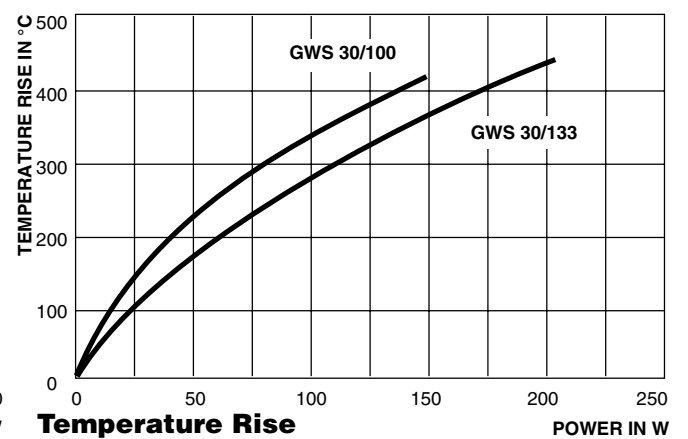
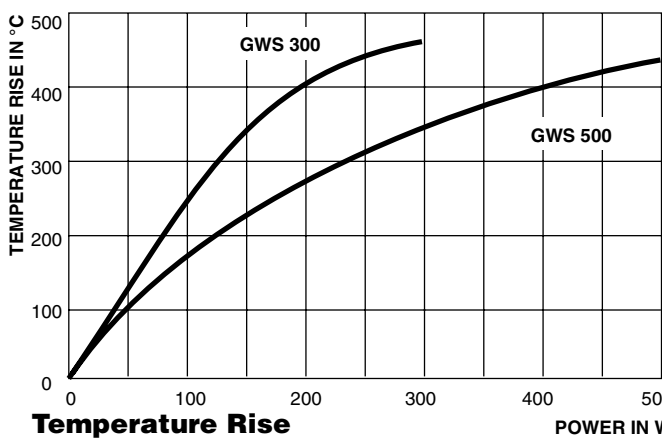
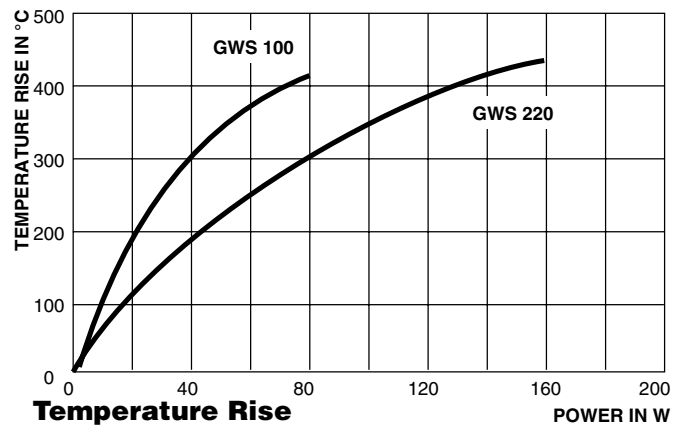
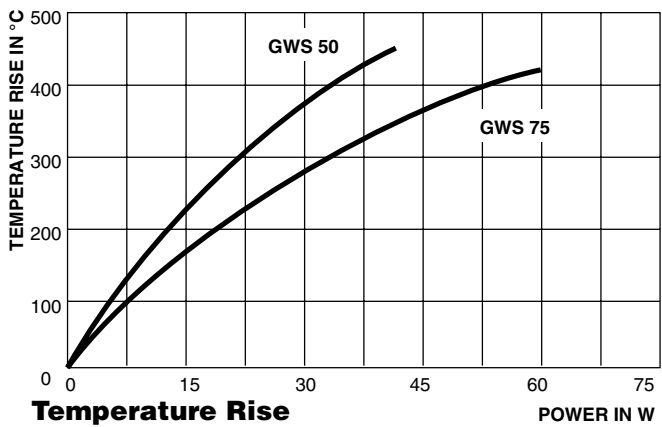
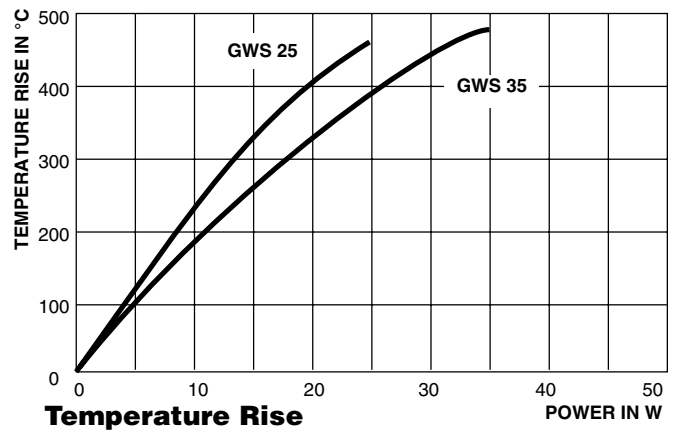
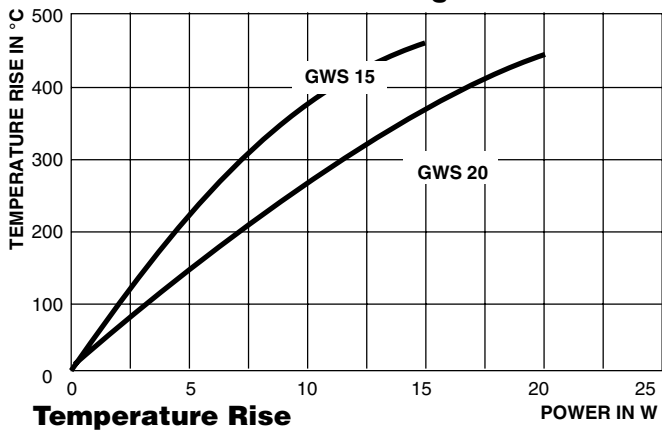
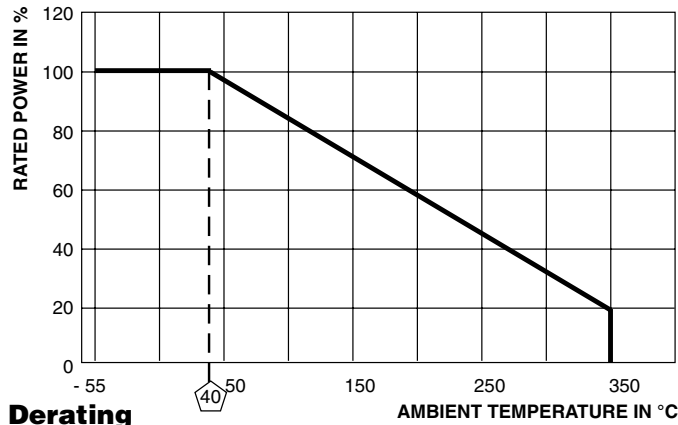
SB TERMINALS



ADJUSTABLE LUGS from GWS 25 E



MODEL	DIMENSIONS in millimeters [inches]															
	GWS 300 GWS 300 E GWS 300 Ni				GWS 500 GWS 500 E				GWS 30/100 GWS 30/100 E				GWS 30/133 GWS 30/133 E			
TERMINAL	SS	SSB	SB	FST	SS	SSB	SB	FST	SS	SSB	SB	FST	SS	SSB	SB	FST
DIMENSION																
D	22.3 ± 1.3 [0.878 ± 0.051]				32.5 ± 1.5 [1.330 ± 0.060]				32.5 ± 1.5 [1.330 ± 0.060]				32.5 ± 1.5 [1.330 ± 0.060]			
L	265 ± 4 [2.433 ± 0.157]				330 ± 5 [13.52 ± 0.200]				100 ± 2.5 [4.100 ± 0.100]				133 ± 3 [5.450 ± 0.120]			
a ± 2 [a ± 0.079]	235 [9.252]				280 [11.48]				85 [3.480]				118 [4.840]			
b	8 [0.315]	8 [0.315]	8 [0.315]	6.3 [0.248]	8 [0.315]	8 [0.315]	8 [0.315]	6.3 [0.248]	8 [0.315]	8 [0.315]	8 [0.315]	6.3 [0.248]	8 [0.315]	8 [0.315]	8 [0.315]	6.3 [0.248]
b ₁	5 [0.197]	5 [0.197]	5 [0.197]	5 [0.197]	8 [0.315]	8 [0.315]	8 [0.315]	8 [0.315]	8 [0.315]	8 [0.315]	8 [0.315]	8 [0.315]	8 [0.315]	8 [0.315]	8 [0.315]	8 [0.315]
c	18.5 [0.728]	18.5 [0.728]	29.5 [1.161]	27 [1.063]	23.5 [0.960]	23.5 [0.960]	35 [1.430]	31.5 [1.290]	23.5 [0.960]	23.5 [0.960]	35 [1.430]	31.5 [1.290]	23.5 [0.960]	23.5 [0.960]	35 [1.430]	31.5 [1.290]
d	10 [0.394]	10 [0.394]	10 [0.394]	10 [0.394]	18.5 [0.760]	18.5 [0.760]	18.5 [0.760]	18.5 [0.760]	14 [0.570]	14 [0.570]	14 [0.570]	14 [0.570]	14 [0.570]	14 [0.570]	14 [0.570]	14 [0.570]
e	M4 x 20				M4 x 20				M4 x 20				M4 x 20			
e ₁	3.2 [0.126]	3.2 [0.126]	3.2 [0.126]	3.2 [0.126]	4.2 [0.170]	4.2 [0.170]	4.2 [0.170]	4.2 [0.170]	4.2 [0.170]	4.2 [0.170]	4.2 [0.170]	4.2 [0.170]	4.2 [0.170]	4.2 [0.170]	4.2 [0.170]	4.2 [0.170]
k	11 [0.433]	11 [0.433]	11 [0.433]	11 [0.433]	21 [0.860]	21 [0.860]	21 [0.860]	21 [0.860]	3.5 [0.138]	3.5 [0.138]	3.5 [0.138]	3.5 [0.138]	3.5 [0.138]	3.5 [0.138]	3.5 [0.138]	3.5 [0.138]
WEIGHT (g)	238				425				183				265			





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