

## Color-Keyed® Connectors

### Color-Keyed® Special Lugs for Special Problems – Angled, Shaped and Flared the Way You Need Them



Thomas & Betts can solve your difficult wire bending and terminating problems in confined power distribution panels, switchgear and motor control enclosures.

We have the design and production capability to deliver exactly the type lug you need, shaped the way you need.

- Straight, 45° and 90° angle
- Stacking or non-stacking
- Narrow tongue or standard
- Tin, silver and nickel

Thomas & Betts offers an extensive line of copper Color-Keyed® lugs for #8 AWG through 1000 kcmil flex and code cables. The lug tongues are modified in several different configurations to meet your exact needs: 45° and 90° bend angles, narrow tongues to fit into circuit breakers, offset tongues to stack two cables and special stud hole drilling. These special configurations let you:

1. run cable directly to the bus bar with no bending.
2. terminate into very narrow spaces.
3. utilize minimal bus bar space.

The specially designed lugs help you “clean up” your cabling in crowded enclosures.

The photographs show some examples of how and where the lugs can be used.

#### Customized Color-Keyed® Connectors for Copper Cables

- Standard and special tongue angles, stacking and non-stacking, bolt holes sizes and centers, protective platings.
- Specially modified one and two hole copper Color-Keyed® compression lugs, Series 54100, 54200, 54850BE and 54930BE for flex and code copper stranded cables. Material high conductivity wrought copper.
- Minimum order quantity: Standard package quantity by cable size. Consult your Regional Sales Office for price and delivery. All customized lugs are made to order and non-cancelable.



# Color-Keyed® Connectors

Order Form (to be scanned or photocopied)

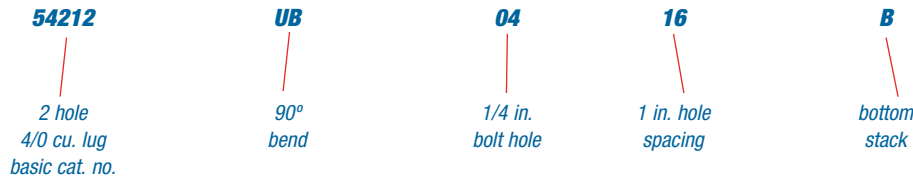
Catalogue No. \_\_\_\_\_ Qty. \_\_\_\_\_

## Design Controls and Requirements

All "MADE-UP" catalogue numbers start with a standard or basic catalogue number and are followed by the customer-required extra features: tongue shape, bolt hole size, distance between bolt holes, stacking, plating and inspection hole (peep hole). A code letter or a number has been assigned to each extra feature. See CODE TABLE.

Notes: 1) Lack of any of the extra features on the "MADE-UP" catalogue number means that the standard Cat. No. features are prevalent.  
 2) If either bolt hole size or distance between bolt holes needs to be changed from standard Cat. No., both code numbers will appear on the "MADE-UP" Cat. No. (See example below)

**CAT. NO. 54212UB0416BSP**



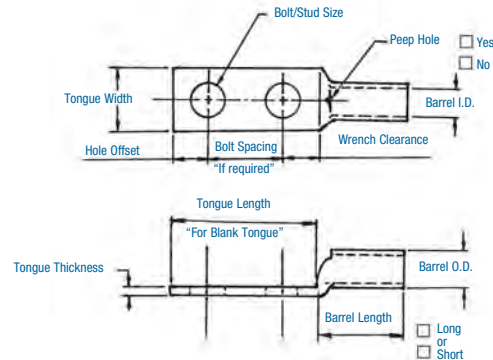
CODE TABLE

TONGUE SHAPE		BOLT HOLES		CODE	BOLT HOLE CENTERS		STACKING		FINISH (PLATING)		INSPECTION HOLE (LONG BARREL)		INSPECTION HOLE (SHORT BARREL)	
TYPE	CODE				CENTER TO CENTER	CODE	TYPE	CODE	TYPE 1	CODE	I.D.	CODE	I.D.	CODE
45°	UF	#8	0.173	02	1/2 in.	08	Top	T**	Silver Plate	SP	Peep Hole	PH	Blind End	BE
90°	UB	#10	0.204	03	5/8 in.	10	Bottom	B	Lead Plate	LP				
Blank	BT	1/4 in.	0.281	04	3/4 in.	12			Nickel Plate	NP				
(No Bolt Hole)		5/16 in.	0.344	05	1/8 in.	14			Plain Finish	PF				
		3/8 in.	0.406	06	1 in.	16			No Marking	NM				
		1/2 in.	0.531	08	1-1/8 in.	18								
		5/8 in.	0.656	10	1-1/4 in.	20								
		3/4 in.	0.812	12	1-3/8 in.	22								
		1/8 in.	0.937	14	1-1/2 in.	24								
		1 in.	1.062	16	1-5/8 in.	26								
					1-3/4 in.	28								
					*1-7/8 in.	30								
					*2 in.	32								

\* These Bolt centers not available for bolt holes larger than 13/16 in.

\*\* Not required for 45° & 90° Top Stacking.

Cable	Code	<input type="checkbox"/>
	Weld	<input type="checkbox"/>
<input type="checkbox"/> #8	<input type="checkbox"/> #6	<input type="checkbox"/> #4
<input type="checkbox"/> #2	<input type="checkbox"/> #1	<input type="checkbox"/> 1/0
<input type="checkbox"/> 2/0	<input type="checkbox"/> 3/0	<input type="checkbox"/> 4/0
<input type="checkbox"/> 250 kcmil & up (Code Only)		



C o m p r e s s i o n

**Tongue Specifications – See Chart “A” for Dimensions**

C o m p r e s s i o n

Stud Sizes		
<input type="checkbox"/> #8	<input type="checkbox"/> #10	<input type="checkbox"/> 1/4 in.
<input type="checkbox"/> 5/16 in.	<input type="checkbox"/> 3/8 in.	<input type="checkbox"/> 1/2 in.
<input type="checkbox"/> 5/8 in.	<input type="checkbox"/> 3/4 in.	<input type="checkbox"/> 7/8 in.
<input type="checkbox"/> 1 in.		

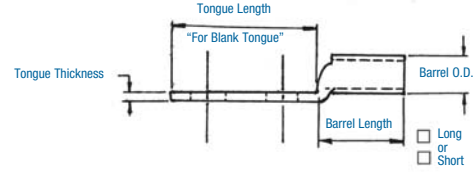
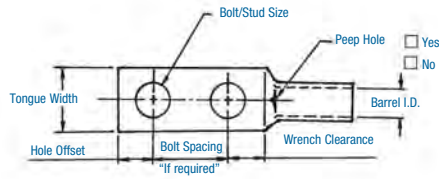


Chart A

NOMINAL BOLT HOLE	HOLE OFFSET	MIN. WRENCH CLEARANCE	TONGUE WIDTH Cable Size										
			#8 CODE #8 WELD	#6 CODE #6 WELD	#4 CODE	#2 CODE #4 WELD	#1 CODE #2 WELD	1/0 CODE #1 WELD	2/0 CODE 1/0 WELD	3/0 CODE 2/0 WELD	4/0 CODE 3/0 WELD	250 CODE	
#8	0.173	0.200	0.240	0.406	0.437	0.562	0.593	0.672	0.750	0.825	0.937	1.030	1.125
#10	0.204	0.218	0.250	0.406	0.437	0.562	0.593	0.672	0.750	0.825	0.937	1.030	1.125
1/4	0.281	0.250	0.312	0.469	0.500	0.562	0.593	0.672	0.750	0.825	0.937	1.030	1.125
5/16	0.344	0.375	0.406	0.562	0.562	0.562	0.675	0.672	0.750	0.825	0.937	1.030	1.125
3/8	0.406	0.375	0.440	0.578	0.578	0.594	0.675	0.672	0.750	0.825	0.937	1.030	1.125
1/2	0.531	0.500	0.562	-	-	-	0.750	0.750	0.750	0.825	0.937	1.030	1.125
5/8	0.656	0.812	0.875	-	-	-	-	-	-	-	0.937	1.030	1.125
3/4	0.812	0.750	0.770	-	-	-	-	-	-	-	-	-	-
*7/8	0.937	0.875	0.890	-	-	-	-	-	-	-	-	-	-
*1	1.062	0.937	1.000	-	-	-	-	-	-	-	-	-	-

\* These bolt holes are available in one hole lug only. Dimensions are in inches.

Chart B

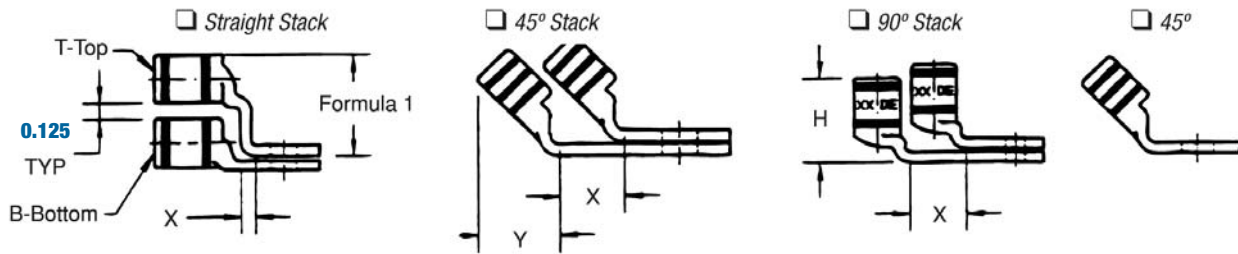
CABLE SIZE	TONGUE THICKNESS	STRAIGHT LUG BARREL LENGTH		BARREL		STACKED LUGS (see diagram on page 11)			DIM "Y"		DIM "H"	
		SHORT	LONG	O.D.	I.D.	DIM "X"			SHORT	LONG	SHORT	LONG
						STRAIGHT	45°	90°				
#8	0.080	0.635	0.935	0.260	0.180	0.158	0.478	0.394	0.595	0.808	0.779	1.079
#6	0.081	0.675	0.975	0.296	0.215	0.134	0.544	0.432	0.587	0.799	0.767	10.67
#4	0.099	0.685	0.985	0.365	0.266	0.175	0.622	0.502	0.637	0.849	0.838	1.138
#2	0.108	0.815	1.115	0.410	0.302	0.216	0.649	0.535	0.711	0.923	0.958	1.258
#1	0.106	0.825	1.275	0.467	0.361	0.212	0.731	0.592	0.710	1.028	0.956	1.406
1/0	0.125	0.975	1.325	0.520	0.396	0.250	0.789	0.646	0.794	1.042	1.075	1.425
2/0	0.125	0.965	1.315	0.571	0.446	0.250	0.859	0.696	0.829	1.077	1.125	1.475
3/0	0.125	1.085	1.435	0.632	0.507	0.250	0.946	0.757	0.900	1.148	1.225	1.575
4/0	0.137	1.255	1.705	0.701	0.564	0.274	1.031	0.826	1.015	1.333	1.387	1.837
250	0.137	1.375	1.925	0.766	0.629	0.274	1.123	0.891	1.085	1.474	1.487	2.037
300	0.153	1.900	2.675	0.850	0.660	0.459	1.226	0.975	1.180	1.726	1.924	2.679
350	0.177	2.090	2.896	0.926	0.720	0.531	1.333	1.103	1.267	1.830	2.096	2.896
400	0.173	2.460	2.980	0.960	0.757	0.519	1.370	1.085	1.551	1.913	2.484	2.984
500	0.218	2.670	3.610	1.100	0.852	0.654	1.514	1.225	1.629	2.266	2.669	3.619
600	0.244	2.900	3.490	1.200	0.926	0.732	1.630	1.325	1.762	2.147	2.897	3.497
700	0.228	2.784	-	1.255	0.997	0.684	1.662	1.375	1.780	-	3.011	-
750	0.270	3.050	3.925	1.330	1.030	0.810	1.745	1.455	1.827	2.434	3.050	3.925
800	0.266	3.213	-	1.375	1.079	0.800	1.728	1.625	1.952	2.787	3.213	4.554
900	0.313	3.450	4.550	1.500	1.145	0.940	1.900	1.650	2.065	-	1.387	-
1,000	0.297	3.356	4.500	1.550	1.203	0.890	2.070	1.675	2.031	2.787	1.487	4.506

Note: Stacking lugs are available for one bolt only. Consult your Regional Sales Office: Straight: 700 kcmil & up, 45°: 400 kcmil & up, 90°: 500 kcmil & up.

Dimensions are in inches.

## Color-Keyed® Connectors

### Tongue Specifications – See Chart “A” for Dimensions



Formula 1 = (0.125 + 2 (OD) + 0.037 - Tongue Thickness)

Chart C

TONGUE WIDTH 0.030 / CODE CABLE SIZE											
BOLT HOLE SIZE	300 KCMIL 4/0 WELD	350 KCMIL	400 KCMIL	500 KCMIL 400 WELD	600 KCMIL 500 WELD	1325/24	700 KCMIL	750 KCMIL	800 KCMIL	900 KCMIL	1000 KCMIL
#8	-	-	-	-	-	-	-	-	-	-	-
#10	-	-	-	-	-	-	-	-	-	-	-
1/4	1.250	1.355	1.410	1.605	1.745	1.805	1.840	1.935	2.010	2.180	2.265
5/16	1.250	1.355	1.410	1.605	1.745	1.805	1.840	1.935	2.010	2.180	2.265
3/8	1.250	1.355	1.410	1.605	1.745	1.805	1.840	1.935	2.010	2.180	2.265
1/2	1.250	1.355	1.410	1.605	1.745	1.805	1.840	1.935	2.010	2.180	2.265
5/8	1.250	1.355	1.410	1.605	1.745	1.805	1.840	1.935	2.010	2.180	2.265
3/4	1.250	1.355	1.410	1.605	1.745	1.805	1.840	1.935	2.010	2.180	2.265
*7/8	-	-	-	1.605	1.745	1.805	1.840	1.935	2.010	2.180	2.265
*1	-	-	-	-	1.745	1.805	1.840	1.935	2.010	2.180	2.265

\* These bolt holes are available in one hole lug only.

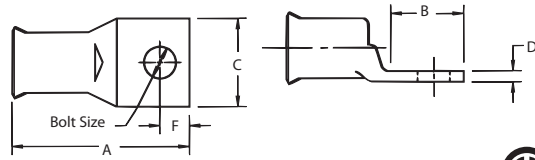
Dimensions are in inches.



**Connectors for Copper Conductors**

Compression

**Bell Ended Lugs – Standard Barrel Certified to 600V and Recommended up to 35 kV‡**



CAT. NO.	Cable Code	WIRE SIZE*		Classes					Bolt Size (in.)	Dimensions in. (mm)					Die Code	Die Color
		Navy	Flex	G	H	I	K	M		A	B	C	D	F		
54104BS	8	23	37/24	8	8	–	8	8	#10	1.06 (40.6)	0.46 (11.7)	0.40 (10.2)	0.07 (1.8)	0.21 (5.3)	21	Red
54105BS	6	30	61/24	5	5	5	5	5	1/4	1.18 (30.0)	0.56 (14.2)	0.43 (10.9)	0.10 (2.5)	0.25 (6.4)	24	Blue
54106BS	4	40-50	91/24	5	5	5	5	5	1/4	1.28 (32.5)	0.56 (14.2)	0.56 (14.2)	0.10 (2.5)	0.25 (6.4)	29	Grey
54139BS	3 and 4	40-50	91/24	4	4	4	4	4	5/16	1.43 (36.3)	0.78 (19.8)	0.59 (19.8)	0.07 (1.8)	0.34 (8.6)	29	Grey
54142BS	2	60	125/24	3	3	3	3	3	5/16	1.53 (38.9)	0.71 (18.0)	0.65 (16.5)	0.07 (1.8)	0.34 (8.6)	33	Brown
54147BS	1	75	150, 175/24	2	2	2	2	2	5/16	1.91 (48.5)	0.71 (18.0)	0.67 (17.0)	0.12 (3.0)	0.38 (9.7)	37	Green
54153BS	1/0	100	225/24	1	1	1	1	1	5/16	1.63 (41.4)	0.71 (18.0)	0.75 (19.1)	0.14 (3.6)	0.38 (9.7)	42	Pink
54110BS	2/0	125	275/24	1/0	1/0	1/0	1/0	1/0	3/8	1.88 (47.8)	0.81 (20.6)	0.81 (20.6)	0.14 (3.6)	0.38 (9.7)	45	Black
54165BS	3/0	150	325/24	2/0	2/0	2/0	2/0	2/0	1/2	2.21 (56.1)	1.06 (40.6)	0.93 (23.6)	0.14 (3.6)	0.50 (12.7)	50	Orange
54170BS	4/0	200	450/24	3/0	3/0	3/0	3/0	3/0	1/2	2.31 (58.7)	1.06 (40.6)	1.03 (33.0)	0.15 (3.8)	0.50 (12.7)	54	Purple
58165BS	250	–	550/24	4/0	4/0	4/0	4/0	4/0	1/2	2.46 (62.5)	1.12 (28.4)	1.25 (31.8)	0.18 (4.6)	0.50 (12.7)	62	Yellow
54114BS	300	300	650/24	250	250	250	250	–	1/2	2.46 (62.5)	1.12 (28.4)	1.25 (31.8)	0.18 (4.6)	0.50 (12.7)	66	White
5411440BS	300	300	650/24	250	250	250	250	–	1/2	2.38 (60.5)	1.12 (28.4)	1.25 (31.8)	0.18 (4.6)	0.50 (12.7)	66	White
54115260BS	350	350	650/24	–	–	250	250	250	1/2	2.63 (66.8)	1.18 (30.0)	1.38 (35.1)	0.20 (5.1)	0.56 (14.2)	66	White
54185BS	400	400	775/24	300	300	300	300	300	5/8	3.43 (87.1)	1.68 (42.7)	1.40 (35.6)	0.21 (5.3)	0.81 (20.6)	76	Blue
58177BS	500	–	925/24	400	400	400	400	400	5/8	3.00 (76.2)	1.31 (33.3)	1.63 (41.4)	0.25 (6.4)	0.81 (20.6)	80	N/A
58180BS	600	–	1100/24	–	–	450	450	450	5/8	3.63 (92.2)	1.68 (42.7)	1.78 (45.2)	0.26 (6.6)	0.81 (20.6)	94	Green
54122BS	700	–	1325/24	500	500	500	500	500	5/8	3.63 (92.2)	1.68 (42.7)	1.78 (45.2)	0.28 (7.1)	0.81 (20.6)	99	Pink
54123BS	750	–	–	600	–	–	–	550	5/8	3.63 (92.2)	1.68 (42.7)	1.93 (49.0)	0.31 (7.9)	0.81 (20.6)	106	Black
54124BS	800	800	–	–	–	–	600	–	5/8	3.81 (96.8)	1.68 (42.7)	2.00 (50.8)	0.31 (7.9)	0.63 (16.0)	107	Orange
54126BS	900	–	1925/24	–	–	750	–	–	5/8	4.12 (104.6)	1.81 (46.0)	2.18 (55.4)	0.37 (9.4)	0.88 (22.4)	115	Yellow

Tooling: pp. 116–145 Die Selector Chart: pp.146–153

Stranding will differ per class

‡ For installations from 16 kV up to 35 kV, consult shielded cable manufacturers for stress relief and insulation requirements.