

Terminal Block Technical Documentns (Misc.)

Current-Carrying Capacity When Using Heat-Resistant Wires (HIV Wires)

The current-carrying capacity when using heat-resistant wires (HIV wires) is as shown below.
* Based on the terminal block standard JIS C 8201-7-1, the listed current-carrying values correspond to a temperature rise of 40 K or less (each standard specifies a limit of 45 K or below).

The List of Current-Carrying Capacities of Terminal Blocks when using Heat-resitant Wires (HIV Wires)

Product Name		Wire Size (mm²)	Current Ratings (A)	Current-Carrying Capacities when using Heat-resistant Wires (A)
TX7	TXM7	1.25	15	18
TX10SM3	TXM10SM3	1.25	15	18
TX10S	TXM10S	2	20	25
TX10	TXM10	2	20	25
TX20	TXM20	5.5	40	45
TX30	TXM30	8	50	54
TX50	TXM50	14	80	82
TX60	TXM60	22	90	100
TX100	TXM100	38	130	159
TX150	TXM150	60	175	230
TX200	TXM200	100	240	315
TX300	TXM300	150	310	425
TX400	TXM400	200 (150×2)	400 (500)	505 (785)
TX600N	TXM600N	325	600	700
TXU7	TXUM7	1.25	15	18
TXU10SM3	TXUM10SM3	1.25	15	18
TXU10S	TXUM10S	2	20	25
TXU10	TXUM10	2	20	25
TXU20	TXUM20	5.5	40	45
TXU30	TXUM30	8	50	54
TXU50	TXUM50	14	80	82
TXU60	TXUM60	22	90	100
TXU100	TXUM100	38	130	159
TFP15	TFPM15	1.25	15	19
TFP20	TFPM20	2	20	26
TFP40	TFPM40	5.5	40	48
TFP80	TFPM80	14	80	80
TQB60D		22	90	120
TQB100D		60	175	250
TQB200D		150	310	350
TQB400D		200	440	500

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Conversion Chart of Wires (AWG ⇄ mm²)

The following table shows the conversion between AWG (American Wire Gauge) and wire diameter and cross-sectional area (mm²).
AWG is a standard for conductor sizes commonly used in the United States.
In this system, a solid wire with a diameter of 0.0050 inches corresponds to 36 AWG, and a wire with a diameter of 0.4600 inches corresponds to 4/0 AWG.
The sizes between these are arranged in a geometric progression.
As the AWG number increases, the wire becomes thinner.
Sizes larger than 0 AWG are expressed as 2/0, 3/0, 4/0, and so on, where 3/0 means "000."

AWG	Φ	mm²	AWG	Φ	mm²	AWG	Φ	mm²
28	0.3211	0.08097	17	1.15	1.037	6	4.115	13.3
27	0.3606	0.1021	16	1.291	1.309	5	4.621	16.77
26	0.4049	0.1288	15	1.45	1.65	4	5.189	21.15
25	0.4547	0.1623	14	1.628	2.081	3	5.827	26.66
24	0.5106	0.2047	13	1.828	2.624	2	6.544	33.63
23	0.5733	0.2581	12	2.053	3.309	1	7.348	42.41
22	0.6439	0.3256	11	2.305	4.172	0	8.252	53.49
21	0.7229	0.4105	10	2.588	5.262	2/0	9.266	67.42
20	0.8118	0.5174	9	2.906	6.632	3/0	10.404	85.03
19	0.9116	0.6529	8	3.264	8.368	4/0	11.684	107.2
18	1.024	0.8226	7	3.665	10.55			

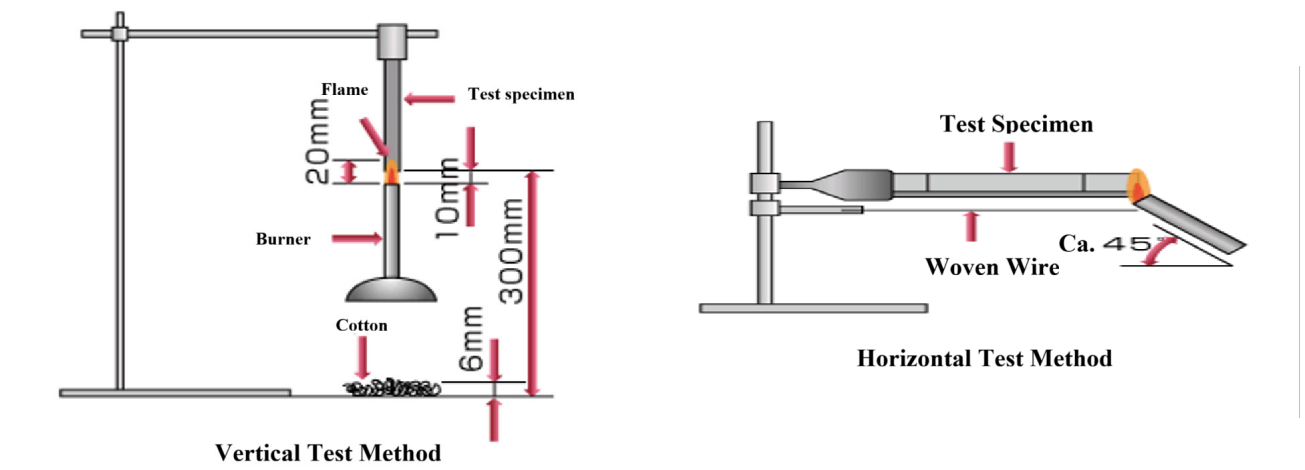
Conversion Chart of Wires (ISO wires ⇄ UL wires)

The blow chart is an excerpt of "IEC60947-7-1 Table 1"

Meter Size ISO mm ²	Comapison between AWG/kcmil and Meter Size Cross-Section Area		Meter Size ISO mm ²	Comapison between AWG/kcmil and Meter Size Cross-Section Area		Meter Size ISO mm ²	Comapison between AWG/kcmil and Meter Size Cross-Section Area	
	Size AWG/kcmil	Ea mm ²		Size AWG/kcmil	Ea mm ²		Size AWG/kcmil	Ea mm ²
0.2	24	0.205	6	10	5.3	—	0000	107.2
0.34	22	0.324	10	8	8.4	120	250 kcmil	127
0.5	20	0.519	16	6	13.3	150	300 kcmil	152
0.75	18	0.82	25	4	21.2	185	350 kcmil	177
1	—	—	35	2	33.6	240	500 kcmil	253
1.5	16	1.3	50	0	53.5	300	600 kcmil	304
2.5	14	2.1	70	00	67.4			
4	12	3.3	95	000	85			

UL Flame-retardant Specifications

In our industrial terminal blocks, flame-retardant properties of the used resin are indicated by the grades specified by UL standards.
The explanation of the test methods and each flame-retardant grade are as shown below.



UL flame-retardant Grade	Decision Criteria of Flame-retardand Test	Time of Burn Allowed	Test Method
UL94HB	Slow burning on a horizontal part	-	Horizontal Burning Test
UL94V-2	Burning stops within 30 seconds on a part allowing for drops of vertical flammable plastic	Within 30 sec. (Polyamide) (Average: Within 25 sec.)	Vertical Burning Test
UL94V-1	Burning stops within 30 seconds on a vertical part allowing for drops of plastic that are not inflame		
UL94V-0	Burning stops within 10 seconds on a vertical part allowing for drops of plastic that are not inflame	Within 10 sec (PPS) (Average: Within 5 sec.)	Vertical Burning Test

Note: Total Flame Application shall be 10 sec. by 2 times per a specimen, and for 5 specimens.