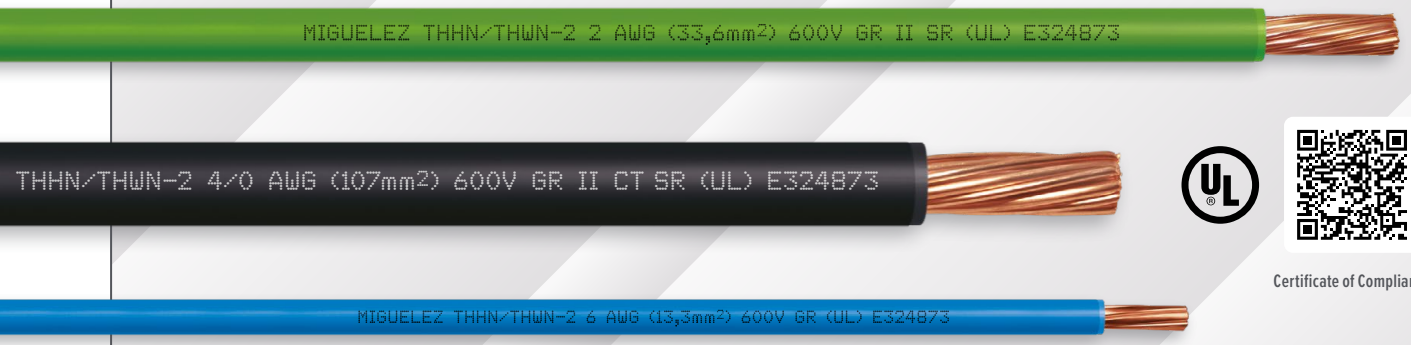
THHN/THWN-2

Miguélez CABLES

RELIABLE & CLOSE TO THE CUSTOMER

THHN/THWN-2



Certificate of Compliance

1. TECHNICAL CHARACTERISTICS

1.1. Technical designation

THHN/THWN-2
Thermoplastic **H**igh **H**eat/**W**ater-resistant **N**ylon-coated
-2 → Rated temperature: 90°C (in dry and wet locations).

1.2. Rated voltage: **600 V**.

1.3. Maximum conductor temperatures: **90°C** (in dry or wet locations).

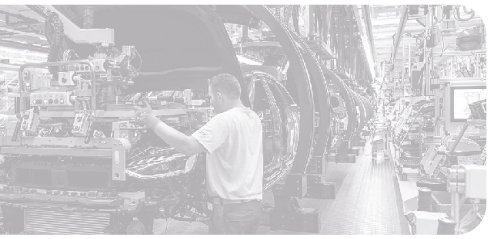
1.4. Voltage test

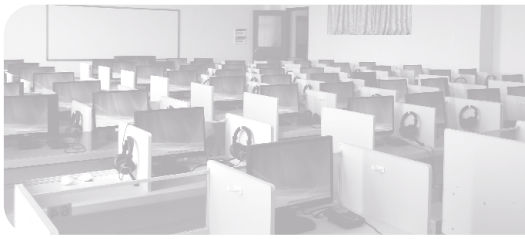
A.C. (Alternating current).

Conductor size, mm² (AWG or kcmil)	RMS dielectric test potential (kV)
2.08 – 33.6 (14 – 2)	2.0
42.4 – 107 (1 – 4/0)	2.5
127 – 253 (250 – 500)	3.0
279 – 507 (550 – 1000)	3.5

1.5. Performance characteristics. Standards

- **Flame retardant** according to the American standard UL 83.
- **Oil and gasoline resistant** according to the American standard UL 83 (**GR II**).
- Sizes 1/0 AWG and larger listed for "**CT**" Use (Cable-tray).
- Sizes 4 AWG and larger listed **SR** (Sunlight-Resistant).
- **Heat, abrasion and moisture resistant.**
- **RoHS** compliant.





2. DESCRIPTION

2.1. Construction

THHN/THWN-2 is manufactured according to UL 83 standard. UL listed with certificate No. E324873.

- **Conductor**

  Soft, annealed, solid or stranded copper conductor with characteristics and dimensions according to the requirements of American standard UL 83.

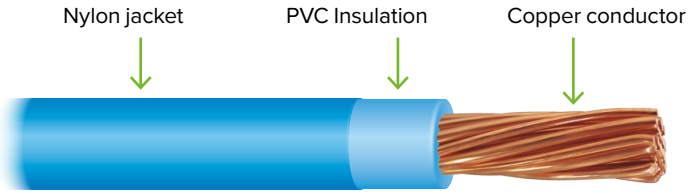
- **Insulation**

  Polyvinyl Chloride (PVC) according to the requirements of American Standard UL 83.

- **Jacket**

  Nylon jacket according to the requirements of American Standard UL 83.

2.2. Design



2.3. Marking

- **From 14 up to 6 AWG**

  MIGUÉLEZ THHN/THWN-2 **X** AWG (**Y** mm^2) 600V GR II (UL) E324873

- **From 4 up to 1 AWG**

  MIGUÉLEZ THHN/THWN-2 **X** AWG (**Y** mm^2) 600V GR II SR (UL) E324873

- **From 1/0 up to 4/0 AWG**

  MIGUÉLEZ THHN/THWN-2 **X** AWG (**Y** mm^2) 600V GR II CT SR (UL) E324873

- **From 250 up to 600 kcmil (MCM)**

  MIGUÉLEZ THHN/THWN-2 **X** kcmil (**Y** mm^2) 600V GR II CT SR (UL) E324873

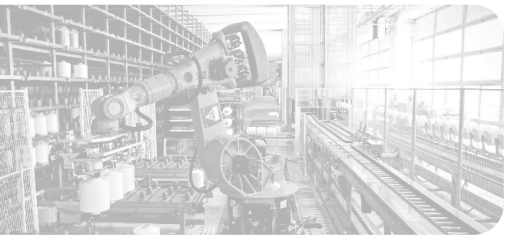
Where

X = Conductor size in AWG or kcmil

Y = Cross sectional area of conductor in mm^2

Example

MIGUELEZ THHN/THWN-2 1/0 AWG (53,5 mm^2) 600V GR II CT SR (UL) E324873



3. APPLICATIONS

3.1. Installation

Fixed installations.

3.2. User guide

THHN/THWN-2 conductor can be used as general-purpose wiring in industrial, residential or commercial buildings for installation in conduits (or cable trays → sizes ≥ 1/0 AWG) and as specified by the National Electrical Code. THHN/THWN-2 can be installed in dry and wet locations at 90°C.

3.3. Suitable methods of installation

THHN/THWN-2 is suitable for installation in metallic or plastic conduits.

– Sizes 1/0 AWG and larger listed for CT Use.

– Sizes 4 AWG and larger listed SR (Sunlight-Resistant).

The methods of installation established by the standards and regulations that affect each individual case must be respected.

The minimum bending radius required in the applicable standards and regulations must be respected.

A bending radius greater than or equal to 8 times the overall diameter of the cable is recommended.

4. DIMENSIONAL CHARACTERISTICS

Conductor					Average insulation thickness ≥		Minimum jacket thickness ≥		Nominal overall diameter		Approximate net weight	
Size	Cross sectional area	Number of strands	Conductor diameter									
AWG or kcmil	mm²		mm	mils	mm	mils	mm	mils	mm	mils	kg/km	lbs/1000ft
14	2.08	1	1.63	64	0.38	15	0.1	4	2.6	102	22	15
12	3.31	1	2.05	81	0.38	15	0.1	4	3.0	118	34	23
10	5.26	1	2.59	102	0.51	20	0.1	4	3.8	150	54	36
14	2.08	7	1.80	71	0.38	15	0.1	4	2.8	110	24	16
12	3.31	7	2.26	89	0.38	15	0.1	4	3.2	126	37	25
10	5.26	7	2.87	113	0.51	20	0.1	4	4.1	161	58	39
8	8.37	7	3.61	142	0.76	30	0.13	5	5.5	217	96	65
6	13.3	7	4.52	178	0.76	30	0.13	5	6.3	248	143	96
14	2.08	19	1.80	71	0.38	15	0.1	4	2.8	110	24	16
12	3.31	19	2.29	90	0.38	15	0.1	4	3.4	134	37	25
10	5.26	19	2.87	113	0.51	20	0.1	4	4.2	165	58	39
8	8.37	19	3.63	143	0.76	30	0.13	5	5.8	228	98	66
6	13.3	19	4.55	179	0.76	30	0.13	5	6.6	260	147	99
4	21.2	19	5.74	226	1.02	40	0.15	6	8.4	331	230	155
3	26.7	19	6.45	254	1.02	40	0.15	6	9.0	354	287	193
2	33.6	19	7.26	286	1.02	40	0.15	6	9.7	382	350	235
1	42.4	19	8.15	321	1.27	50	0.18	7	10.9	429	445	299
1/0	53.5	19	9.14	360	1.27	50	0.18	7	12.3	484	560	376
2/0	67.4	19	10.26	404	1.27	50	0.18	7	13.3	524	694	466
3/0	85	19	11.53	454	1.27	50	0.18	7	14.5	571	868	583
4/0	107	19	12.95	510	1.27	50	0.18	7	15.9	626	1070	719
250	127	37	14.60	575	1.52	60	0.2	8	17.9	705	1267	851
300	152	37	16.00	630	1.52	60	0.2	8	19.6	772	1510	1015
350	177	37	17.30	681	1.52	60	0.2	8	20.9	823	1770	1189
400	203	37	18.49	728	1.52	60	0.2	8	22.2	874	2022	1359
500	253	37	20.65	813	1.52	60	0.2	8	24.2	953	2480	1667
600	304	61	22.68	893	1.78	70	0.23	9	26.8	1055	2999	2015

The dimensional and weight values are approximate and subject to normal manufacturing tolerances.

5. ELECTRICAL CHARACTERISTICS

Conductor			Maximum electrical resistance 20°C D.C	Maximum electrical resistance 30°C D.C	Maximum allowable ampacities Tª ambient 30°C		
Size	Cross sectional area	Number of strands			60°C	75°C	90°C
AWG or kcmil	mm²		Ω/km	Ω/kft	A	A	A
14	2.08	1	8.45	2.57	15	15	15
12	3.31	1	5.31	1.62	20	20	20
10	5.26	1	3.34	1.02	30	30	30
14	2.08	7	8.62	2.62	15	15	15
12	3.31	7	5.43	1.65	20	20	20
10	5.26	7	3.41	1.04	30	30	30
8	8.37	7	2.14	0.653	40	50	55
6	13.3	7	1.35	0.411	55	65	75
14	2.08	19	8.62	2.62	15	15	15
12	3.31	19	5.43	1.65	20	20	20
10	5.26	19	3.41	1.04	30	30	30
8	8.37	19	2.14	0.654	40	50	55
6	13.3	19	1.35	0.412	55	65	75
4	21.2	19	0.848	0.259	70	85	95
3	26.7	19	0.673	0.205	85	100	115
2	33.6	19	0.534	0.163	95	115	130
1	42.4	19	0.423	0.129	110	130	145
1/0	53.5	19	0.335	0.102	125	150	170
2/0	67.4	19	0.266	0.0811	145	175	195
3/0	85	19	0.211	0.0643	165	200	225
4/0	107	19	0.167	0.0510	195	230	260
250	127	37	0.142	0.0432	215	255	290
300	152	37	0.118	0.0360	240	285	320
350	177	37	0.101	0.0308	260	310	350
400	203	37	0.0885	0.0270	280	335	380
500	253	37	0.0709	0.0216	320	380	430
600	304	61	0.0590	0.0180	350	420	475

According to the article 240-3 (c) of the NEC for 14, 12 and 10 AWG conductor sizes, the overcurrent protection devices must be 15 A, 20 A and 30 A respectively. For the real calculation of the maximum circuit ampacity, please follow the requirements of the NEC and use, if necessary, the temperature and group correction factors of the NEC. The allowable ampacity which shows this table is limited to the conditions specified in the applicable NEC tables in Article 310.

6. COLORS

Black Red White Blue Green Brown Orange Pink Yellow Gray Purple

* Other colors on demand.

7. PACKAGING

Packaging	Sizes
Plastic Spool (500 ft)	14, 12, 10 AWG
Plastic Spool (152 m)	
Plywood Reel (2500 ft)	
Reel or drum (500 ft, 1000 ft, 2500 ft or 5000 ft)	From 8 AWG up to 4/0 AWG
Reel or drum (304 m, 762 m, 1000 m or 1524 m)	
Wooden drum & cut to length service	From 4 AWG up to 600 kcmil (MCM)

* Other packaging options are possible on demand.

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