

# Wire – THHN Type and MTW Type



THHN10GYL



THHN4BK



MTW16WH



MTW10WH

## Applications

Type **THHN** building wire is intended for general purpose applications as defined by the National Electrical Code (NEC). It is appropriate for new construction or rewiring for 600-volt applications. When used as type THHN, the conductor is suitable for use in wet or dry locations at temperatures not to exceed 90°C or not to exceed 75°C in oil or coolants. When used as type MTW, the conductor is suitable for use in dry locations at 90°C, or not to exceed 60°C in wet locations or where exposed to oils or coolants.

Type **MTW** conductors are primarily used in control cabinets, in machine tool applications and appliance wiring applications at temperatures -25°C to 90°C. They comply with the National Electrical Code (NEC) and NFPA Standard 79. Voltage rating for all applications is 600 volts.

THHN and MTW wire is sold in 500 foot spools; certain sizes are also available in 2500 foot reels.

*Please Note: Our prices on wire are closely tied to the market price for copper. This allows us to offer the best savings possible if conditions are favorable; however, it also means that our prices may increase if market conditions warrant.*

## Features

### Conductors

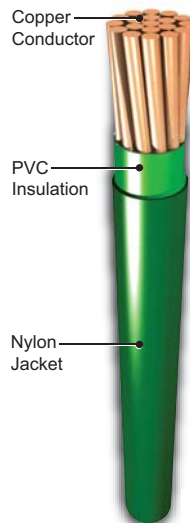
- THHN: stranded, uncoated copper conductors per ASTM-B3, ASTM-B787 and ASTM-B8
- MTW: bare, annealed copper per ASTM-B3, -B8 and -B787

### Insulation

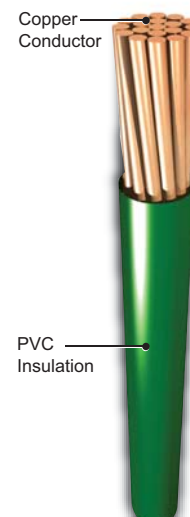
Color-coded, Polyvinyl Chloride (PVC) heat- and moisture-resistant, flame-retardant compound per UL 1063 and UL 83

### Jacket

THHN wire has a tough, polyamide, Nylon outer covering per UL 1063 and UL 83. Slick Nylon outer jacket for easy pulling



THHN Type



MTW Type

## Ratings

VW-1 rated 14 AWG - 1 AWG

1/0 AWG and larger is rated for CT (cable tray) use.

6 AWG and larger is rated for sunlight resistance in all colors. All sizes are rated "gasoline and oil resistant II."

# Wire – MTW Type

Type MTW Wire Specifications									
Size (AWG or kcmil)	Number of Strands	Cross-sectional Area (mm <sup>2</sup> )	Insulation Thickness (inches)	Overall Outside Diameter		Allowable Ampacities*†		Approximate Weight (lbs) 500'/2500'	Standard Packaging spool/reel
			PVC	(inches)	(mm)	60°C	75°C		
18	16	6.113	0.030	0.110	2.79	6	6	4.6/26.8	500' or 2500'. Some colors not offered in 2500' reel.
16	26	7.645	0.030	0.123	3.12	8	8	6.5/34.4	
14	19	8.814	0.030	0.132	3.35	15	15	9.0/46.8	
12	19	11.581	0.030	0.151	3.84	20	20	13.2/71.0	
10	19	21.319	0.030	0.205	5.21	30	30	20.9	500'

\*Note: Allowable ampacity shown above is per the 2005 National Electrical Code. †Note: MTW conductor ampacity based on Cooper conductors with 60°C and 75°C as specified by NFPA79. The above data is approximate and subject to normal manufacturing tolerances.

Type MTW Wire						
Part Number	Color	Gauge	Description	Spool/Reel Length	Approx. Weight	Price
MTW18BK	Black	18 AWG	Type MTW copper wire, 16 strands, 600 Volts	500'	4.6 lbs	<-->
MTW18WH	White					<-->
MTW18RD	Red					<-->
MTW18BL	Blue					<-->
MTW18GN	Green					<-->
MTW18YL	Yellow					<-->
MTW18OR	Orange					<-->
MTW18BN	Brown					<-->
MTW18PK	Pink					<-->
MTW18PL	Purple					<-->
MTW18GY	Gray					<-->
MTW18TN	Tan					<-->
MTW18BW	Blue/White					<-->
MTW16BK	Black					16 AWG
MTW16WH	White	<-->				
MTW16RD	Red	<-->				
MTW16BL	Blue	<-->				
MTW16GN	Green	<-->				
MTW16YL	Yellow	<-->				
MTW16OR	Orange	<-->				
MTW16BN	Brown	<-->				
MTW16PK	Pink	<-->				
MTW16PL	Purple	<-->				
MTW16GY	Gray	<-->				
MTW16TN	Tan	<-->				
MTW16BW	Blue/White	<-->				

# Wire – MTW Type

Company Information

Systems Overview

Programmable Controllers

Field I/O

Software

C-more & other HMI

Drives

Soft Starters

Motors & Gearbox

Steppers/ Servos

Motor Controls

Proximity Sensors

Photo Sensors

Limit Switches

Encoders

Current Sensors

Pressure Sensors

Temperature Sensors

Pushbuttons/ Lights

Process

Relays/ Timers

Comm.

Terminal Blocks & Wiring

Power

Circuit Protection

Enclosures

Tools

Pneumatics

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Part # Index

Type MTW Wire						
Part Number	Color	Gauge	Description	Spool/Reel Length	Approx. Weight	Price
<b>MTW14BK</b>	Black	14 AWG	Type MTW copper wire, 19 strands, 600 Volts	500'	9.0 lbs	<--->
<b>MTW14WH</b>	White					<--->
<b>MTW14RD</b>	Red					<--->
<b>MTW14BL</b>	Blue					<--->
<b>MTW14GN</b>	Green					<--->
<b>MTW14YL</b>	Yellow					<--->
<b>MTW14OR</b>	Orange					<--->
<b>MTW14BN</b>	Brown					<--->
<b>MTW14PK</b>	Pink					<--->
<b>MTW14PL</b>	Purple					<--->
<b>MTW14GY</b>	Gray					<--->
<b>MTW14TN</b>	Tan					<--->
<b>MTW14BW</b>	Blue/White					<--->
<b>MTW12BK</b>	Black					12 AWG
<b>MTW12WH</b>	White	<--->				
<b>MTW12RD</b>	Red	<--->				
<b>MTW12BL</b>	Blue	<--->				
<b>MTW12GN</b>	Green	<--->				
<b>MTW12YL</b>	Yellow	<--->				
<b>MTW12OR</b>	Orange	<--->				
<b>MTW12BN</b>	Brown	<--->				
<b>MTW12GY</b>	Gray	<--->				
<b>MTW12BW</b>	Blue/White	<--->				
<b>MTW10BK</b>	Black	10 AWG	Type MTW copper wire, 19 strands, 600 Volts	500'	20.9 lbs	<--->
<b>MTW10WH</b>	White					<--->
<b>MTW10GN</b>	Green					<--->
<b>MTW10YL</b>	Yellow					<--->
<b>MTW10OR</b>	Orange					<--->
<b>MTW10BN</b>	Brown					<--->

# Wire – MTW Type

Type MTW Wire					
Part Number	Color	Description	Spool/Reel Length	Approx. Weight	Price
MTW18BK25	Black	Type MTW copper wire, 18 AWG, 16 strands, 600 Volts		26.8 lbs	<--->
MTW18WH25	White				<--->
MTW18RD25	Red				<--->
MTW18BL25	Blue				<--->
MTW18GN25	Green				<--->
MTW18YL25	Yellow				<--->
MTW18OR25	Orange				<--->
MTW18BN25	Brown				<--->
MTW18PK25	Pink				<--->
MTW18PL25	Purple				<--->
MTW18GY25	Gray				<--->
MTW18TN25	Tan				<--->
MTW18BW25	Blue/White stripe				<--->
MTW16BK25	Black				Type MTW copper wire, 16 AWG, 26 strands, 600 Volts
MTW16WH25	White	<--->			
MTW16RD25	Red	<--->			
MTW16BL25	Blue	<--->			
MTW16GN25	Green	<--->			
MTW16YL25	Yellow	<--->			
MTW16OR25	Orange	<--->			
MTW16BN25	Brown	<--->			
MTW16PK25	Pink	<--->			
MTW16PL25	Purple	<--->			
MTW16GY25	Gray	<--->			
MTW16TN25	Tan	<--->			
MTW16BW25	Blue/White stripe	<--->			
MTW14BK25	Black	Type MTW copper wire, 14 AWG, 19 strands, 600 Volts		46.8 lbs	
MTW14WH25	White				<--->
MTW14RD25	Red				<--->
MTW14BL25	Blue				<--->
MTW14GN25	Green				<--->
MTW14YL25	Yellow				<--->
MTW14OR25	Orange				<--->
MTW14BN25	Brown				<--->
MTW14PK25	Pink				<--->
MTW14PL25	Purple				<--->
MTW14GY25	Gray				<--->
MTW14TN25	Tan				<--->
MTW14BW25	Blue/White stripe				<--->
MTW12BK25	Black				Type MTW copper wire, 12 AWG, 19 strands, 600 Volts
MTW12WH25	White	<--->			
MTW12RD25	Red	<--->			
MTW12BL25	Blue	<--->			
MTW12GN25	Green	<--->			
MTW12YL25	Yellow	<--->			
MTW12OR25	Orange	<--->			
MTW12BN25	Brown	<--->			
MTW12BW25	Blue/White stripe	<--->			

# Wire – Gauge Conversion Tables

<b>American Wire Gauge Conversion Chart*</b>			
This cross reference shows equivalent nominal values. Actual cross sections may vary.			
AWG	mm <sup>2</sup>	AWG	mm <sup>2</sup>
30	0.05	6	16
28	0.08	4	25
26	0.14	2	35
24	0.25	1	50
22	0.34	1/0	55
21	0.38	2/0	70
20	0.50	3/0	95
18	0.75	4/0	120
17	1.00	300MCM	150
16	1.50	350MCM	185
14	2.50	500MCM	240
12	4	600MCM	300
10	6	750MCM	400
8	10	1000MCM	500

**\*Note: Table shows commercially used equivalent values.**

You will find product MSDS information and a complete glossary of wire terminology on our Web site at <http://support.automationdirect.com/products/wire.html>