

Your Global Automation Partner

**TURCK**

# Process Wiring Hazardous Area Cables and Assemblies for Division I, Zone 1



# A Global Leader in Industrial Automation

Turck's sensors, connectivity, and fieldbus technology products are built to be the best. As one of the most **prominent** sensor manufacturers **in the world**, we even back our sensors with a **lifetime warranty**. Turck works by bringing **rugged engineering** solutions to your industrial automation applications.

**85,000+**  
SOLUTIONS

**50+**  
YEARS OF INNOVATION

**2,000+**  
EXPERIENCED SALES REPRESENTATIVES

Pioneer in non-contact  
**sensing** technology

Developed innovative **connectivity**  
solutions in response to our customers' needs

Recognized the need for advanced **I/O solutions**  
in harsh duty environments

**SUPPORT &**  
DEDICATED SERVICE

**EXTENSIVE WARRANTY**

 **4,000+**  
APPLICATION EXPERTS

RESPOND and SOLVE over **1,200** inquiries  
per day



Strategically placed manufacturing facilities in the

**USA** with **28** GLOBAL  
SUBSIDIARIES

**GLOBAL BUT LOCAL...**

**60** representations worldwide

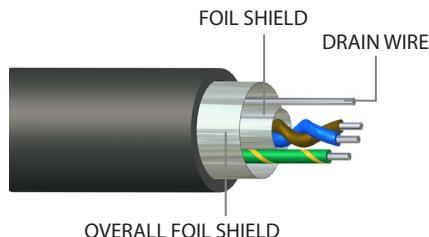
## Bulk Cable

Sold per meter, no minimum or maximum, allowing you to order the exact amount you need with quick delivery

### Single Pair + Ground

ID Number: RF52524

Part Number:  
BLK,EX60,1SPDX18+1X18,TCERHL,FF

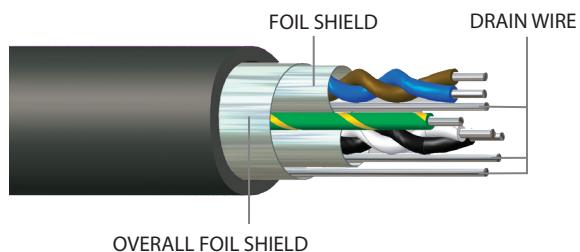


Brown	Shielded Twisted Pair
Blue	
Drain	
Green/Yellow Ground	
Overall Drain	

### Two Pairs + Ground

ID Number: RF52176

Part Number:  
BLK,EX60,2STPDX18+1X18,TCERHL,FF

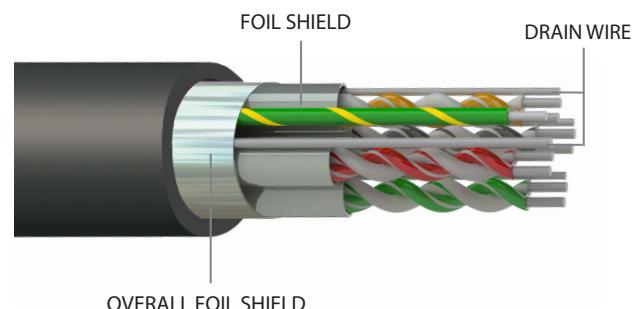


Brown	Shielded Twisted Pair
Blue	
Drain	
Black	Shielded Twisted Pair
White	
Drain	
Green/Yellow Ground	
Overall Drain	

### Four Pairs + Ground

ID Number: RF52525

Part Number:  
BLK,EX60,4SPX18+1X18,TCERHL,FF



White/Green	Shielded Twisted Pair
Green/White	
Drain	
Red/White	Shielded Twisted Pair
White/Red	
Drain	
Orange/White	Shielded Twisted Pair
White/Orange	
Drain	
White/Black	Shielded Twisted Pair
Black/White	
Drain	
Green/Yellow Ground	
Overall Drain	

\* Number of twists shown for reference only. Actual twists will vary.

## Extremelife™ TC-ER-HL Cable

Turck TC-ER-HL Extremelife™ cables are the flexible, next generation cables to replace expensive and difficult to install Metal Clad (Type MC) cables for Class I, Zone 1, Groups IIA, IIB and IIC hazardous locations. Applications include oil and gas, on and off shore critical equipment, and other hazardous locations. These cables meet the same crush and impact tests as Metal Clad HL cables but without the use of corrugated welded metal armor. These cables reduce both the time and cost of installation for added economic advantage.

TC-ER-HL Extremelife™ cables are UL 1277, UL 2225, and C(UL) CIC/TC listed. In addition, they are IEEE 1580-2010 and UL 1309 Marine Shipboard listed and American Bureau of Shipping (ABS) certified. These cables are robust and reliable, whether exposed to crush, impact, abrasion, cold, flame, oil, chemicals, or UV. They remain flexible enough to work with at even -40 °C and have UL and C(UL) -40 °C cold impact listings. They are FT4 and IEC 60332-3-22 flame retardant, UL Oil Resistant I and II, and UV resistant to both the UL 720 Hour Xenon Arc Test and the CSA 1000 hour weatherometer test. No other cable family on the market can claim all of these features in a cost-effective solution.

Attributes			
<b>Jacket Material</b>	EX60	<b>Flame Retardant</b>	UL 1685/CSA FT4 IEC 60332-3-22
<b>Temp Range</b>	-60 to +105 °C	<b>Water</b>	Very Good
<b>Cold Bend</b>	-60 °C	<b>Flexibility</b>	Good
<b>Cold Impact</b>	-40 °C	<b>Greases</b>	Excellent
<b>Crush and Impact</b>	Excellent	<b>Alcohol</b>	Excellent
<b>Cut and Abrasion</b>	Very Good	<b>Acids &lt;20%</b>	Good
<b>UV/Sunlight Resistant</b>	Excellent	<b>General Approvals</b>	UL TC-ERDB, ITC, PLTC, ERDB, CSA CIC/TCDB Marine Shipboard UL 1309, IEEE 1580-2010, ABS, 300 V, 600 V



Dirt



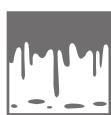
Water



Temp



Sun



Oil



Vibration



Impact

Meets the same stringent crush and impact tests as MCHL cable.

Crushing Test	Impact Test
Cable is laid on a 3/4" (19mm) steel rod between 2" (50mm) solid steel plates in a compression device. Each insulated conductor is connected in series with a buzzer or other low voltage indicator and its supply circuit, one leg of which is earth-grounded. The upper steel plate is lowered at a rate of .50" (10 mm)/minute until one or more of the indicators signals contact has occurred between one or more of the circuit conductors or between any conductor and the ground. The force is recorded. This is repeated at 10 intervals along 100" (2.55m) cable. The average of the 10 crushing trials must be > 1500 lbf (6670 N).	A solid rectangular block of steel 4 3/4 " x 3" x 5" is solidly secured. A solid steel rod 3/4" in diameter and 4 3/4" long is secure to the 1st steel rectangle. 11'(3.35m) of cable is struck at 10 measured intervals using a 2"x6" 10 lbs steel block weight. All insulated conductors are connected in series with a 3W 120V neon light. The 25lb impact weight is released from 1'(0.31m) above the cable. At least 8 of the 10 strikes must not light the lamp.

## Extremelife™ TC-ER-HL Cable

-40 °C Cold Impact Test	-60 °C Cold Bend Test
<p>Ten 5" cable samples and a wooden anvil are conditioned in a calibrated cold chamber at -40 °C for four hours. The wooden anvil is then placed on a concrete floor. Each cable sample is removed from the chamber one at a time and a three pound weight is dropped on it from a height of 36". There can be no cracks or ruptures in the overall jacket or insulated conductor in 8/10 samples (Per UL 1277 TC, UL 1581 Section 593) UL 2225 HL Section 7.</p>	<p>Four cable samples are conditioned at -60 °C for four hours. Each sample is removed from the cold chamber, one at a time, and wrapped three times around a wooden mandrel that is 8x cable O.D. for unshielded cables and 12x cable O.D. for shielded cables. The winding is at an approximately uniform rate of five seconds per turn. The cable is then slid from the mandrel and placed on a horizontal surface and allowed to rest at least four hours to warm to room temperature. The sample is then inspected to be sure there are no cracks, splits, tears, or other openings in any part of the cable (Per UL 13 PLTC).</p>

### Features:

#### Design

- Lightweight and flexible, TC-ER-HL cable is easier to handle and safer for installers to terminate.
- The reduced cable cross section makes routing through smaller openings easier and takes up less room in cable trays. It also allows 65% reduction in bend radius compared to Type MC-HL, allowing for cleaner installations.
- Shielded pairs: Individual pairs + drain + overall foil shields reduce the potential for EMI.
- Individual ground conductor as required by UL.

#### Cost

- Significant reduction in cost over Metal Clad cables.

#### Stock

- Cable is sold per meter with no minimum or maximum, allowing you to order the exact amount you need with quick delivery.

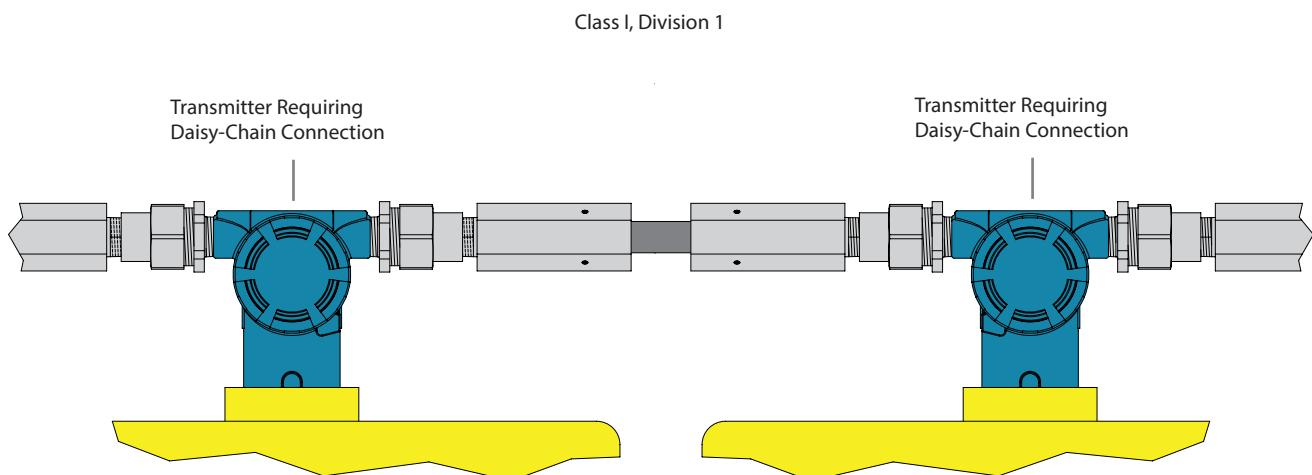
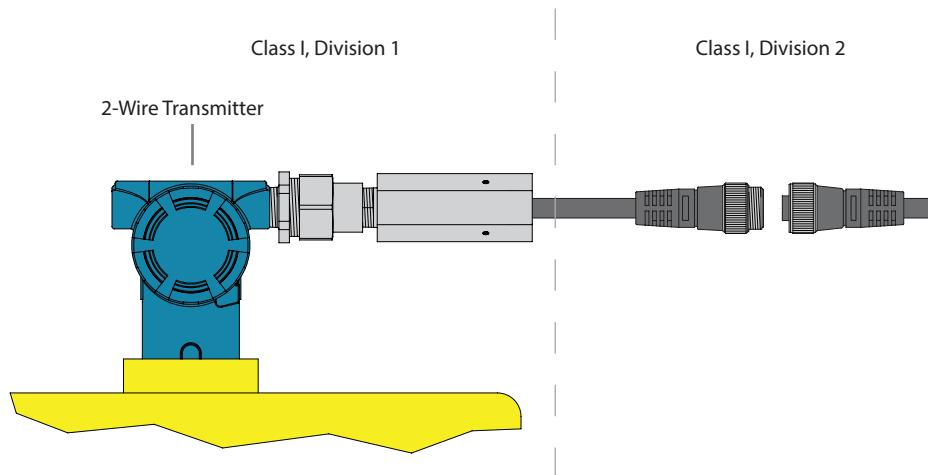
#### Options

- Single analog, analog & digital combination, valve & transmitter applications.
- FOUNDATION™ Fieldbus.
- Customization with low minimums and 5 week turn around available.

#### Installation

- TC-ER-HL Extremelife™ cable is to be installed in accordance with NEC 336.10(7) and 505.15(b)(1)(i) and as permitted in 501.10(A)(2).

## Typical Field Applications



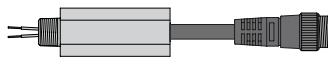
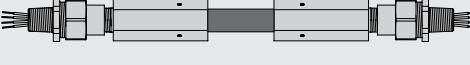
**Note:** Connections with Class I, Division 2 locations require the use of a Lockfast guard.

Please reference the [Process Wiring Application Guide \(B5111\)](#) for installation recommendations.

\* = length in meters

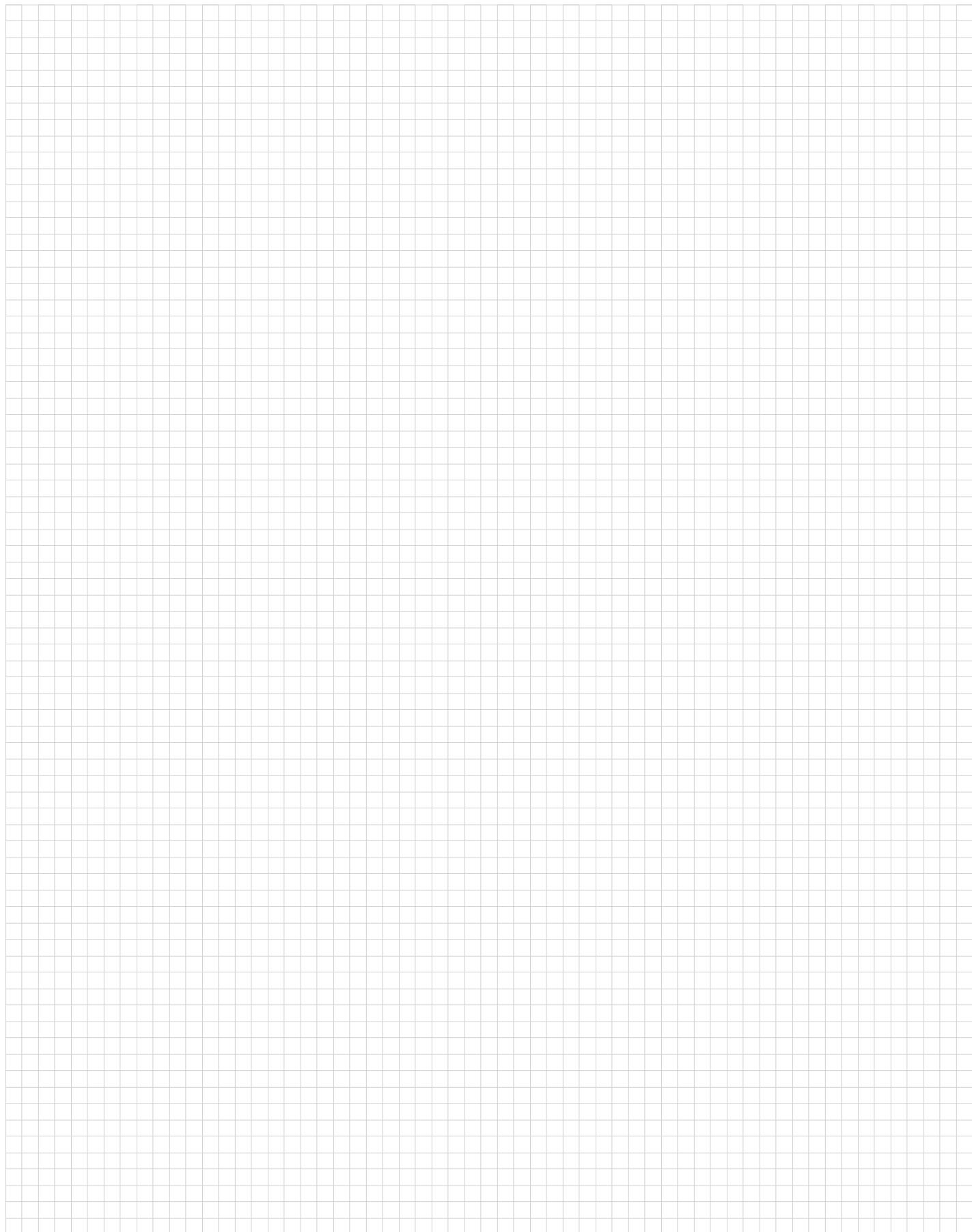
## Solutions for process equipment

Midstream applications require reliable and rugged automation solutions to keep your production processes up and running. Turck has solutions to answer the demanding needs of midstream applications where your goods are in constant motion; solutions that can withstand shock and vibration, provide environmental protection, and allow for reliable network and I/O communication.

Assembly reference (note: conductor count may vary from picture)	1 Pair + Ground	2 Pair + Ground	2 Pair + Ground + Drain	4 Pair + Ground + Drain
	P-RSV 40-EXG-2524-*/14.5/NPT	P-RSV 562-EXG-2574-*/14.5/NPT	P-RSV 66-EXG-2574-*/14.5/NPT	P-RSV101 EXG-2525-*/14.5/NPT
	P-RSV 40-EXG-2524-*/14.5/NPT/UNION	P-RSV 562-EXG-2574-*/14.5/NPT/UNION	P-RSV 66-EXG-2574-*/14.5/NPT/UNION	P-RSV101 EXG-2525-*/14.5/NPT/UNION
	P-EXG 2A1-2524*/14.5/NPT	P-EXG 2A4-2574*/14.5/NPT	P-EXG 2A3-2574*/14.5/NPT	P-EXG 2A2-2525*/14.5/NPT
	P-EXG 2A1-2524*/14.5/NPT/UNION	P-EXG 2A4-2574*/14.5/NPT/UNION	P-EXG 2A3-2574*/14.5/NPT/UNION	P-EXG 2A2-2525*/14.5/NPT/UNION

**Note:** First asterisk is the length of the jacketed cable in meters. Second asterisk is the wire lead length in meters.

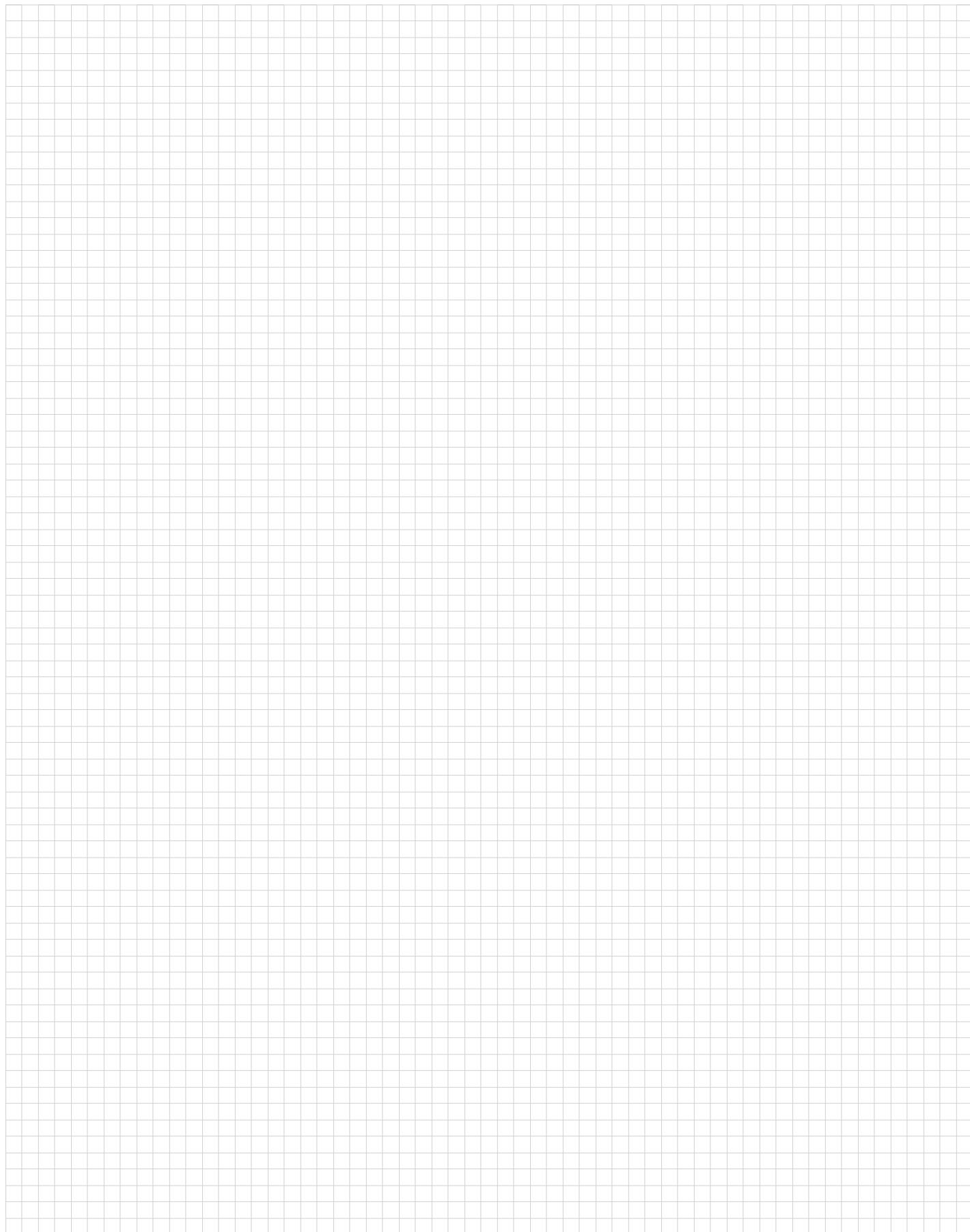
## Notes

A large grid of empty graph paper, consisting of 20 horizontal rows and 20 vertical columns, intended for handwritten notes.

## Notes

A large grid of empty lines for notes, consisting of 20 horizontal rows and 25 vertical columns of small squares.

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A large grid of empty graph paper, consisting of 20 horizontal rows and 20 vertical columns, intended for handwritten notes.

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Literature and media questions or concerns?  
Contact Turck USA Marketing – [tusa.marketing@turck.com](mailto:tusa.marketing@turck.com)

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