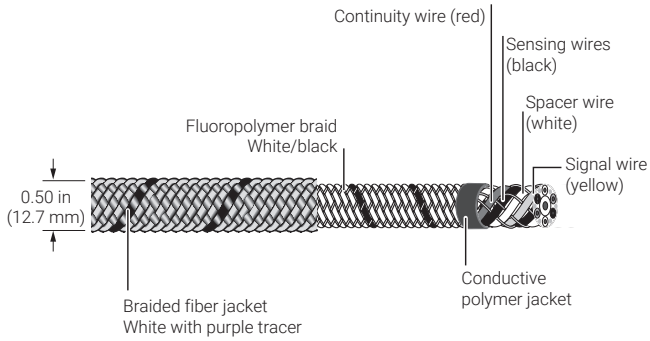
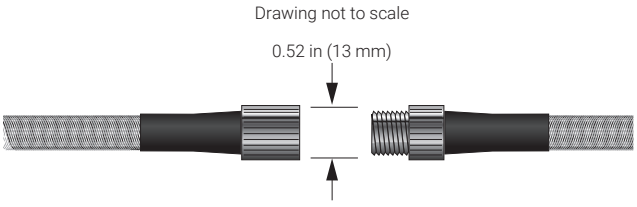
TT5001-HS

nVent RAYCHEM TraceTek

SOLVENT SENSING CABLE FOR UNDERGROUND LEAK DETECTION





Cable construction

PRODUCT OVERVIEW

nVent RAYCHEM TraceTek TT5001-HS sensing cable detects the presence of liquid organic solvents at any point along its length, yet it does not react to the presence of water. Installed with a TraceTek Sensor Interface Module and TraceTek Alarm Panel, the cable senses solvent liquid, triggers an alarm and pinpoints the location of the leak within one meter.

DESIGNED FOR UNDERGROUND LEAK DETECTION

TT5001-HS sensing cable is designed for use within slotted PVC conduit and is constructed with an outer layer of polyethylene fibers to provide extra pulling strength and low friction during the installation process. The sensor cable core is standard TT5001 with well documented response times, and years of successful applications. The cable can be purchased in bulk form, cut to length in the field and joined using connector kits, or it can be obtained in custom cut lengths with connectors attached in the factory. The cable is designed to pull through 42 mm or 1-½ in slotted schedule 80 PVC conduit with up to 240 m (800 ft) between pull boxes.

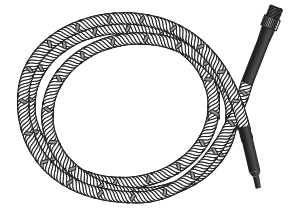
DISTINCTIVE APPEARANCE AND READY FOR PIPELINE PROJECTS

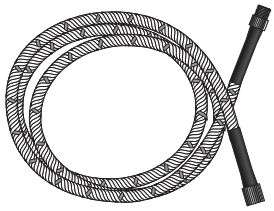
TT5001-HS sensing cable has a glossy white outer layer of rope fibers, marked with a distinctive purple tracer. The polyethylene rope outer layer is fabricated with a number of individual filaments that collectively increase the pulling force limit to greater than 100 kg (220 lb). At the same time, the outer rope layer dramatically reduces frictional drag between the cable and the PVC conduit, thereby facilitating long distances between pull boxes. In many cases four lengths of TT5001-HS will be joined to form a single TraceTek circuit of 1000 meters.Multiple circuits can be monitored from a single location, thus permitting pipeline applications from a few hundred meters to many kilometers.

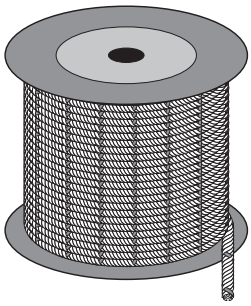
ADVANCED TECHNOLOGY

TraceTek uses radiation cross-linking and conductive-polymer technology to make TT5001-HS cables. The combination of water and chemically resistant inner wall coupled with the enhanced strength of the polyethylene outer rope layer yield a product well suited for underground leak detection. The cable is able to withstand both the rigors of installation and long years of service underground with exposure to ground water and various soil conditions. Mildly acidic or alkaline conditions, exposure to detergents and similar tough conditions are well tolerated.

ORDERING INFORMATION







TT5001-HS modular sensing cable with factory-installed connectors

Catalog number	Part number	Description
TT5001–HS–MC	P000001172	Sensing cable with connectors—custom order by meter

TT5001-HS bulk sensing cable (connector kits required)

Catalog number	Part number	Description
TT5001–HS	P000001171	Bulk sensing cable on reel Minimum length: 30 m (100 ft) Maximum length: 240 m (800 ft)

Connector kits (not shown)

Catalog number	Part number	Description
TT5000–HUV–CK–MC–M/F (Includes test tools)	P000001207	Components for five mated pairs of connectors

PRODUCT CHARACTERISTICS

Cable diameter	7 mm (0.28 in) nominal
Cable diameter with connector	13 mm (0.52 in) nominal
Cable diameter with fiber jacket	12.7 mm (0.50 in) nominal
Fluoropolymer braid	Color—white and black
Braided fiber jacket	Color—white with purple tracer
Cable weight	10.2 kg/100 m nominal (6.8 lb/100 ft nominal)
Operating temperature range	–20°C to 60°C (–4°F to 140°F)
Pull force limit	Not to exceed 100 kg (220 lb)
Bend radius	50 mm (2 in) minimum
Pressure	Loads greater than 9 kg (20 lb) per linear inch at 20°C (68°F) may immediately trigger an alarm
Nonresettable	Must be replaced after exposure to most solvents

CHEMICAL RESISTANCE

Cable functions normally after exposure in accordance with ASTM D 543 at 23°C (73°F) for seven days

Sulfuric acid	(10%)
Hydrochloric acid	(10%)
Nitric acid	(10%)
Sodium hydroxide	(10%)

WATER RESISTANCE

Sensing cable	Less than 10 µA leakage when immersed in salt water for 90 days
Connector system	Less than 10 µA leakage when immersed in water at 10 psig for 24 hours

RESPONSE TIME

Represented materials detected	Typical response time at 68°F (20°C)
Toluene	10 min
Dichloromethane (methylene chloride)	5 min
1, 1, 1-trichloroethylene (TCE)	8 min
Trichloroethane (TCA)	20 min
Methyl ethyl ketone (MEK)†	10 min†
Acetone†	10 min†
n-methyl pyrrolidone (NMP)†	60 min†
Isopropyl alcohol (anhydrous)	90 min

Notes:

- Response times are based on 2 in (50 mm) of cable immersed in liquid.
- Response times are affected by operating temperature. Consult factory for specific response times at other temperatures and in other liquids.

† Prolonged immersion in ketones will inhibit sensing-cable performance.

APPROVALS AND CERTIFICATIONS

TraceTek TT5001-HS sensing cables are approved for installation in ordinary and hazardous areas when used in conjunction with approved TraceTek monitoring equipment and zener safety barriers when appropriate.

All TraceTek sensing cables are designated as “simple apparatus” and included in the approval certification for TraceTek monitoring instruments.

Consult the specific data sheets and approval certificates for the TraceTek TTSIM-128, TTSIM-1, TTSIM-1A, TTSIM-2, TTC-1 and TT-FLASHER-BE for application limitations and specific area approvals and certifications.

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