



Control & signal cable

IMSA 51-5 / 51-7

Traffic Loop Detector Wire with PE Tube Jacket

IMSA 51-5 (THHN) & 51-7 (XHHW-2) 600 V 14/12 AWG roadway loop wire in 6.35 mm PE tube



IMSA 51-5 & 51-7

600 V Wire-in-PE-Tube

14 AWG & 12 AWG Saw-Cut Loop

Application

IMSA 51-5 / 51-7 traffic loop detector wire (600 V, -40 to +90 °C) featuring a 14 or 12 AWG 19-strand bare copper conductor insulated with THHN PVC/Nylon (51-5) or XHHW-2 XLPE (51-7) sliding freely inside a 6.35 mm (0.250 in) polyethylene outer duct tube.

Typical uses: Asphalt & Concrete Roadway Saw-Cut Loops, DOT Highway Intersection Presence Detection, Highway Speed, Count & Classification Loops, Toll-Lane & Airport Ground Traffic Loops, Commercial Gate & Parking Garage Loops

Construction



Cross-section, not to scale

- 1 19-strand bare copper conductor
- 2 Primary wire insulation (51-5 / 51-7)
- 3 Annular slip clearance
- 4 6.35 mm (0.250 in) PE duct tube

Technical data

Typical values

Rated voltage	600 V RMS (UL 83 THHN / UL 44 XHHW-2)	Conductor DC resistance	8.28 Ω/km (14 AWG) · 5.21 Ω/km (12 AWG) at +20 °C
Insulation resistance	≥ 1,000 MΩ·km (51-7 XHHW-2 XLPE)	Continuous temperature rating	-40 °C to +90 °C wet or dry
Hot-pour sealant compatibility	IMSA 51-7 XLPE/HDPE resists hot sealant	Conductor stranding	19-strand concentric bare copper
Outer tube dimensions	6.35 mm (0.250 in) OD · 0.81 mm (0.032 in) wall	Min. corner bend radius	38 mm (1.5 in) chamfered saw-cut corner
Pavement shift & shear protection	Free-sliding inner conductor in PE tube	De-icing salt, oil & gasoline	Nylon/XLPE inner + PE outer tube
Standards	IMSA Specification 51-5 & IMSA 51-7		

Sizes

4 standard constructions

Tick the sizes you need and send this page to info@tebaoflex.com or WhatsApp +86 185 9591 3361.

Order designation	Cross-section / size	Conductor build	Wall ≈ mm	Outer Ø ≈ mm	Metal kg/km	Weight ≈ kg/km	Min. bend R fixed mm
Standard IMSA 51-5 / 51-7 configurations 4 sizes							
☐ IMSA 51-5 14AWG	14 AWG (2.08)	THHN / THWN-2 (PVC+Nylon)	0.98	6.35	18.5	42.0	51
☐ IMSA 51-5 12AWG	12 AWG (3.31)	THHN / THWN-2 (PVC+Nylon)	1.15	6.35	24.2	55.0	51
☐ IMSA 51-7 14AWG	14 AWG (2.08)	XHHW-2 (Cross-Linked PE)	1.21	6.35	18.9	43.0	51
☐ IMSA 51-7 12AWG	12 AWG (3.31)	XHHW-2 (Cross-Linked PE)	1.38	6.35	24.6	56.0	51

- Outer diameters and weights are nominal engineering values for IMSA 51-5 / 51-7 subject to standard manufacturing tolerances per IMSA Specification 51-5 (THHN in PE Tube) & 51-7 (XHHW-2 in HDPE Tube).

Electrical & rating data

4 sizes

Configuration	Max. DC R @ 20 °C Ω/km	Primary rating (A or nF/km)	Secondary rating	Dielectric test V AC rms
14 AWG (2.08)	8.28	18.0	15.3	2,000
12 AWG (3.31)	5.21	18.0	15.3	2,000
14 AWG (2.08)	8.28	18.0	15.3	2,000
12 AWG (3.31)	5.21	18.0	15.3	2,000

- Electrical resistance at +20 °C and dielectric withstand voltages verified per IMSA Specification 51-5 (THHN in PE Tube) & 51-7 (XHHW-2 in HDPE Tube).

Standards and approvals

- ✓ IMSA Specification 51-5 (THHN in PE Tube) & 51-7 (XHHW-2 in HDPE Tube)
- ✓ CE (2014/35/EU) & RoHS 3 (2015/863/EU) Compliant
- ✓ REACH SVHC Compliance Verified

Certifications



Management systems: ISO 9001, ISO 14001, ISO 45001

Request a quotation

Send the size, length and destination. An application engineer replies within 2 business hours.

WhatsApp / phone

+86 185 9591 3361

Email

info@tebaoflex.com

Web

tebaoflex.com/cables/imsa-51-5-51-7-traffic-loop-detector-wire-with-pe-tube-jacket



Typical values for this cable type, based on IMSA Specification 51-5 (THHN in PE Tube) & 51-7 (XHHW-2 in HDPE Tube). Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.