450 LEAKY FEEDER CABLE
UHF-175

Varis' Smart Com 450/450IS Leaky Feeder Cable acts as an antenna to bring wireless voice, data, video and Ethernet into mines and tunnels.

Smart Com 450 is better suited to room and pillar or longwall mines than Smart Com 150 as the signal propagates 4x better. As a result, the cable provides 120 m coverage in a 4m opening.

Since UHF-175 Leaky Feeder Cable is MSHA approved it can be installed in Smart Com 450 and Smart Com 450IS systems interchangeably.

UHF-175 Leaky Feeder Cable

Product Specifications

	LEAKY FEEDER CABLE
Part Number	UHF-175
Construction	
Outer Conductor Material	Corrugated Copper Tube
Inner Conductor Material	Copper Clad Aluminum Wire
Diameter over Jacket	16.2 mm (0.64 in)
Diameter Outer Conductor	13.8 mm (0.54 in)
Diameter Inner Conductor	4.8 mm (0.19 in)
Jacket	JFN: halogen free, non corrosive, flame retardant, low smoke, polyolefin. Test methods for fire behavior of cable: IEC 60754-1/-2 smoke emission: halogen free, non corrosive IEC 61034 low smoke IEC 60332-1 flame retardant
Slot Design	Milled (Two-Row)
Physical	
Minimum Bend Radius	1 m (3.3 ft)
Max tensile force	1000 N (225 lbs)
Cable Weight	0.26 kg/m (0.17 lbs/ft)
Storage temperature	-70 to +85 °C (-94 to +185 °F)
Installation temperature	-25 to +60 °C (-13 to +140 °F)
Operation temperature	-40 to +85 °C (-40 to +185 °F)
Packaging	
Cable Length/Roll	175 m (574 ft), Custom Roll lengths also available
RF Characteristics	
Max. Operating Frequency	6 GHz
Impedance	50 ± 2 Ω
Capacitance	76 pF/m
Inductance	0.190 uH/m
Inner Conductor DC Resistance	1.57 Ω/km
Outer Conductor DC Resistance	2.23 Ω/km
Attenuation	21 dB/350 m @ 475 MHz 20 dB/350 m @ 455 MHz 12 dB/350 m @ 145 MHz 7 dB/350 m @ 20 MHz
Approvals	
Intrinsic Safety	MSHA
CE Certification	No

Installation

Use the following guidelines to ensure proper installation of Leaky Feeder Cable:

- Leaky Feeder cable must be installed wherever communications are required.
- Allow for 10% extra cable when laying out system to accommodate for drip loops and cable slack.
- Avoid parallel branches as they “talk into” each other and cause system problems.
- When installing Leaky Feeder cable horizontally secure every 5 m (16 ft) to screening, rock bolts or other support in tunnel.
- Allow the Leaky Feeder cable to sag away from supporting structure (Do not over tighten).
- Avoid tying cable tightly to metal beams or piping or inside cable tray.
- Ensure that a minimum of 1 m (3.3 ft) of cable is installed between components.
- Install no more than 350 m (1148 ft) of cable between amplifiers.
- Ensure minimum bend radius of 1 m (3.3 ft).
- Ensure minimum cable separation of 1 m (3.3 ft).

Drift Installation:

- When installing Leaky Feeder cable along the Drift, install cable along the top-center of the drift for maximum coverage or along top-side for maximum cable protection. It is recommended that the cable be installed along the top-side of the Drift. See Smart Com 450/450IS manual for more information.

Shaft Installation:

- When installing Leaky Feeder cable down the mine shaft, secure cable with Ty-Raps every 3 m (10 ft) to brattice or 1/8” SS messenger cable.
- Loop cable 20 m (66 ft) onto every level. Ensure minimum cable separation of 1 m (3.3 ft). See Smart Com 450/450IS manual for more information.

WARNINGS

⚠ The Smart Com 450IS Leaky Feeder Cable (UHF-175) comprises part of an approved IS system only when installed according to the requirements of Varis Mine Technology System Layout Drawing MSHA-UIS-10.

⚠ Any changes in the Intrinsically Safe circuitry or components may result in an unsafe condition.