



EASTFUL

## ● Introduction

Eastful has developed an innovative solution based on traditional cables, known as Neural Network Cables, which integrate five advanced sensing capabilities: "temperature sensing," "fault detection," "breakage detection," "partial discharge monitoring," and "current sensing." This breakthrough solution is complemented by GIS (Geographic Information System) technology, enabling precise localization of abnormal cable positions on satellite maps. It represents a convergence of sensor technology, computer technology, Internet of Things (IoT) technology, and polymer material technology, creating a new generation of cable products.

## ● Application

**Infrastructure Monitoring:** Real-time monitoring and precise localization of cable abnormalities on satellite maps using GIS technology.

**Safety and Security:** Enhancing safety and security by detecting potential cable hazards, such as overheating or damage, in critical infrastructure like power grids, transportation networks, and telecommunications systems.

**Industrial Automation:** Integration into industrial automation systems for real-time monitoring of cable conditions in manufacturing plants, oil refineries, and other industrial facilities.

**Smart Cities:** Deployment in smart city initiatives for monitoring underground cable networks, enabling efficient maintenance and reducing service disruptions.

**Environmental Monitoring:** Monitoring cable conditions in environmentally sensitive areas, such as underwater cables in marine ecosystems or cables in extreme weather conditions, to prevent environmental damage.

**Emergency Response:** Providing vital information during emergency situations, such as natural disasters or accidents, by quickly identifying cable faults and facilitating rapid response and recovery efforts.

**Remote Monitoring:** Enabling remote monitoring of cable infrastructure in remote or inaccessible locations, improving operational efficiency and reducing the need for onsite inspections.

## ● Function

**Temperature Sensing:**

- Real-time monitoring and visualization of cable temperature.
- Early warning of temperature abnormalities and potential overload.
- Providing insights for power dispatching and extends cable service life.

**Fault Detection:**

- Real-time monitoring and location identification of cable faults.
- Minimizing downtime and repair costs caused by cable explosions or sabotage.

**Breakage Detection:**

- Real-time monitoring of the cable vibration to prevent damage from rough construction or theft.
- Integrated with security systems for enhanced protection.

**Partial Discharge Monitoring:**

- Real-time detection by utilizing high-frequency current.
- Preventing insulation breakdown by accurately monitoring partial discharge phenomena.

**Current Sensing:**

- Real-time monitoring of the cable current for power measurement and energy metering.
- Programmable with high accuracy, suitable for various automation applications.

## ● Performance

Rated voltage: 0.6/1kv, 8.7/10(15)KV, 26/35KV

Maximum working temperature: 90°C

Maximum conductor temperature at short circuit (max. duration 5s): 250°C

\*\*\*This is customized product and can be designed according to customers' request.

## ● Construction

Conductor: Single copper wire stranded

Insulation: Extruded XLPE

## ● Specification

-TIA/EIA-568: Telecommunications cabling standards.

-ISO/IEC 11801: International standard for structured cabling.

## ● Eastful Cable Lab



We have CNAS Accredited Facility to assure conformity assessment services with a focus on quality, expertise, and customer satisfaction.

CNAS has international mutual recognition among IAF, ILAC, APLAC and PAC.

## ● Accreditation

We meet the requirements of ISO9001, ISO14001, ISO45001 and ISO50001 and our cables have certificate of CCC, RoHS, CASC, UL, cUL, TÜV Rheinland and CCS.



## ● National Green Factory



Our facility has been awarded of National Green Factory by Ministry of Industry and Information Technology of China. We are committed to the development of high-end, intelligent and green manufacturing industry.

\*The overall energy consumption level of green factories is better than the energy efficiency benchmark level.

● Technical Parameters

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Low Voltage Neural Network Cables			
Nominal Cross Section Area of Conductor	Nominal Thickness of Insulation	Nominal Cross Section Area of Conductor	Nominal Thickness of Insulation
mm <sup>2</sup>	mm	mm <sup>2</sup>	mm
16	0.7	150	1.4
25/35	0.9	185	1.6
50	1	240	1.7
70/95	1.1	300	1.8
120	1.2	400	2

Medium Voltage Neural Network Cables		
Nominal Cros Section Area of Conductor	Nominal Thickness of Insulation at Rated voltage U <sub>0</sub> /U	Nominal Cros Section Area of Conductor
mm <sup>2</sup>	mm	mm
25/35	4.5	-
50~400	4.5	10.5