

INSTALLATION MANUAL

Voltage Sensors

Voltage sensors

VAPxx-S

VSPxx-S

VCPxx-S

Non-conventional - instrument voltage transformer



VSPxx-S



VAPxx-S



VCPxx-S



DANGER – High voltage!

ALWAYS follow the instructions and regulations from:

- Switch gear manufacturer for installing components!
- T-connector manufacturer for installing the voltage cone type sensor!
- Local electric safety regulations!

Before starting to install be sure that:

Disconnect mains!

Prevent reconnection!

Test for absence of harmful voltages!

Ground and short circuits!

Cover or close nearby live parts!

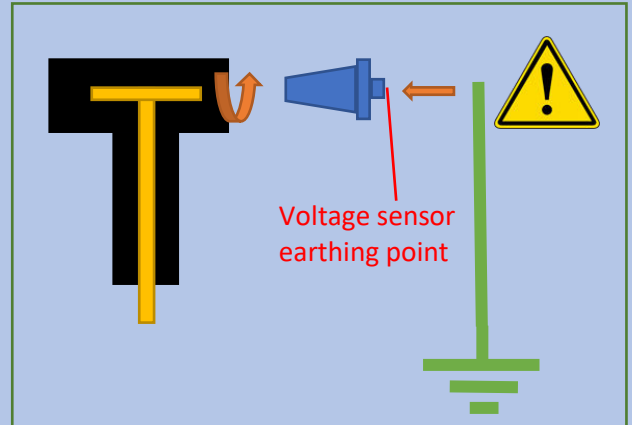


DANGER

- Do not forget to connect the “N” (Hexagon connection) to the ground!
- Do not use a Type C voltage sensor in a asymmetrical short T-connector

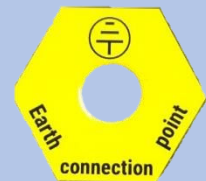
INSTALLATION INSTRUCTION

- ✓ Before starting any action, read all manuals/rules from switch gear-/T-connector manufacturer and be aware of all local electrical regulation rules
- ✓ (for Retrofit) Remove the black cap from the epoxy blind plug from the T-connector
- ✓ (for Retrofit) Unscrew the blind plug
- ✓ Clean the T-connector, especially the conic shape on the inner side
- ✓ Use a grease, which is required by the T-connector manufacturer and lubricate carefully the complete cone of the voltage sensor
- ✓ Use a “de-airing” tool (if prescribed by T-connector manufacturer) during the screwing step
- ✓ Screw the voltage sensor into the T-connector and tighten it with 50Nm (wrench width: 24mm)
→ Use a torque wrench to prevent torques, higher than 50Nm!
- ✓ Connect M8 on the aluminium hexagon nut to the earth potential of the switchgear, with a cable minimum cross section of 6mm². Maximum torque 20Nm!
- ✓ Connect the 3-pole M8 connector with the enclosed cable extension



Reminder

Don't forget to remove the “yellow marking” from the hexagonal nut, which is attached on every voltage sensor



List of suitable T-connectors, surge arrestors, adaptors and coupling connectors

	Connections	VSPxx-S (Type C-cone)	VAPxx-S (shortened cone)	VCPxx-S (Bipa-cone)
Nexans	T-connector	(K)400TB/G, (K)440TB/G	(K)430TB	(K)480TB
	Transformer adapter	KAA4	-	
	Surge arrestor	400PB-5SA, 400PB-10SA	300SA (max. 10-24N)	
	Coupling connector	-	(K)300PBM	
Südkabel	T-connector	SEHDT 13, SEHDT 23	SET 12, SET 24, SAT 12, SAT 24	
	Surge arrestor	MUT33 ¹	MUT 23, MUT 23.1	
	Coupling connector	-	SEHDK 23.1	
Cellpack	T-connector	CTS-S 630 A 24kV	CTS 630 A 24kV	
	Surge arrestor	-	CTKSA	
	Coupling connector	-	CTKS 630A 24kV	

¹ Only applicable to Um max. 24kV

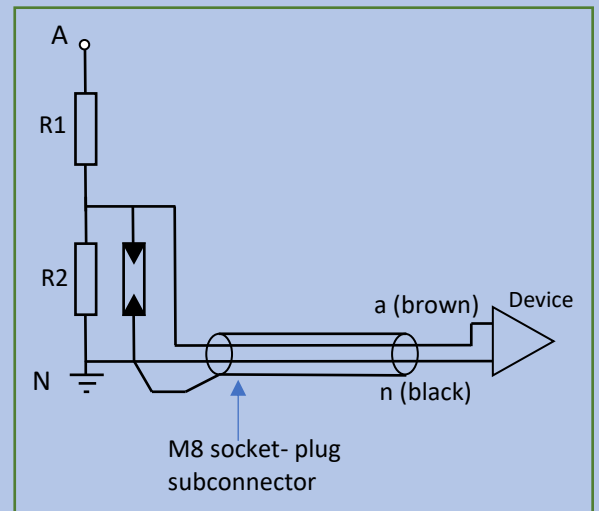
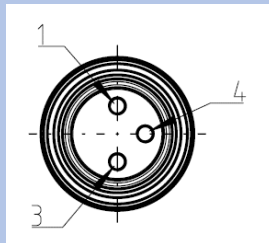
Tyco/ Raychem	T-connector		RSTI-58xx	
	Surge arrester		RSTI-58SA	
	Coupling connector		RSTI-CC-58xx	
nkt	T-connector	Sensoradapter	CB24-xxx	
	Surge arrester		CSA Mxx	
	Coupling connector		CC24-xxx	

Secondary connection

The voltage sensor is equipped with an interconnection, consisting of a M8-round-connector with IP67 protection.

M8-Subconnector

- 1... Connection a, brown wire
- 3... Connection n, black wire
- 4... Shield connection point



Measurement device connection

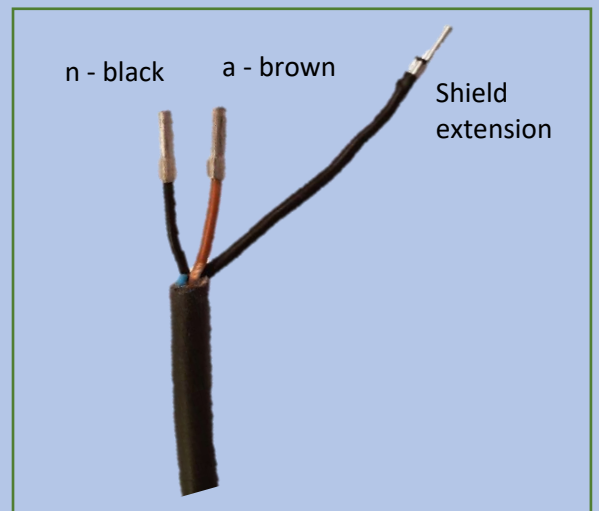
The instruction manual of the device must be considered.

Notice: Extending the screened cable by 1m (typical capacitance 100pF/m), the phase shift will change by -3'

Cutting or extending the secondary cable is not recommended, but if necessary limited to 20m

Additional Notice:

By changing the length of the cable, the frequency behaviour for high frequency sensors is negatively influenced.



Connection methods

Follow the instructions and recommendations of the IED (intelligent electronic device).