

Data Sheet no. 1.74/2

# Blocking Impedances, Types LS...G for Metal-Clad, Gas-Insulated HVAC Test Systems

## 1. Application

Blocking impedances are indispensable components of metal-clad, gas-insulated HVAC test systems (see Catalog Sheet 1.70) for two reasons:

- They protect the test transformer or reactor against high transient voltages in case of the breakdown of the test object.
- They block the partial discharge PD measuring loop from noise signals conducted via the power supply and the HV generator. Together with neighbouring capacitances (e. g. HV bushing of the transformer or stray capacitances to the enclosure), the blocking impedance acts as a low-pass HV-filter.

The HIGHVOLT design considers both features of blocking impedances.

## 2. Design

The blocking impedances are built into the connection and junction elements (see Data Sheet 1.72) instead of the inner conductor. Their inductance is optimized with respect to noise signal suppression (which requires high inductance), breakdown protection without flashover of the impedance (which requires lower inductance) and thermal behaviour (resistance of the impedance), for details see Table 1.

The blocking impedance does not include the enclosure, for that see Data Sheet 1.72. For air-insulated blocking impedances see Data Sheet 1.35.

**Type designation:** LS a-b/c G  
a – voltage in kV  
b – current in A  
c – inductance in mH  
G – gas-insulated

**Example:** LS 510-1/36 G is a blocking impedance of 510 kV, 1 A and 36 mH, to be built into metal-clad, gas-insulated HVAC test systems.

Table 1: Parameters of blocking impedances, types LS...G

rated voltage (voltage range) kV	current A	inductance mH	dimensions		application for
			diameter mm	length mm	
325 (≤ 325)	1.5	65	190	575	WPG 45/230G WPG 30/325G
	2.5	65	190	640	
510 (325...510)	1.0	36	120	575	WP 400/400G WRV 1.5/460G WP 500/500G WPG 90/510G
	1.5	78	190	575	
680 (510...680)	1.5	100	190	600	WRV 1.5/540G WP 600/600G WRV 1.5/680G
800 (680...800)	1.0	100	190	600	WPG 250/750G WRV 1.9/750G WP 1000/800G
	1.5	78	190	600	
	2.5	65	190	600	
1000 (800...1000)	2.0	130	240	740	WRV 0.65/1000G WPG 375/1000G WPG 500/1000G

Attention: The blocking impedances are **without** enclosure, for those see Data Sheet 1.72!

For further information please contact:

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