

Data Sheet 8.21/7

Exciter Transformer for GIS Testing with Variable Frequency, Type PEOS ¹⁾

Description

One application of these exciter transformers is the on-site testing of GIS objects with series resonant test systems with variable frequency by using one gas-insulated resonant reactor (Data Sheet 8.13) or up to four modular reactors (Data Sheet 8.11). Another application of these exciter transformers is the test of complete GIS substations or short cables with high-power modular reactors (Data Sheet 8.15)

The transformers are realized in a hermetically sealed conventional tank-type design with oil-paper insulation and natural oil cooling. The transformers are especially designed for the application in on-site tests including frequent transportation. In the standard design they are filled with standard transformer oil. As an option, the transformers can also be delivered with the biodegradable insulation fluid MIDEL[®] 7131.

Table 1: Operating conditions

Temperature range	°C	-5 ... 40
Relative humidity	%	≤ 90
Height above sea level	m	≤ 1000

Table 2: Standard climatic conditions for bushing

Temperature	°C	20
Absolute pressure	hPa	1013
Absolute humidity	g/m ³	11

¹⁾ The type designation was changed with Data Sheet version no. 8.21/4 from ETO to PEOS.

Design

Depending on the power and application there are 3 design groups, which are characterized by:

Design group A:

- Exciter winding in two parts for series or parallel connection to achieve better voltage adaption
- The high voltage is led out through a coaxial MV equipment bushing (Euromold)
- For the connection of the control and feeding unit, type RSE, a special multicontact connector is built in a box.

Design group B:

- Voltage adaption by series or parallel connection of exciter winding (multicontact connector) or by different taps of exciter winding (connection on bushings) both inside a connection box
- The high voltage is led out through bushings, which are protected against touching by a metallic cover

Design group C:

- Exciter winding in two parts for series or parallel connection to achieve better voltage adaption
- The high voltage is led out through a coaxial MV connector (Pfisterer)
- For the connection of the control and feeding unit, type RSE, a special multicontact connector is built in a box

A connection cable with corresponding plugs at both ends is meant for the connection to the resonant reactor. For the connection of the control and feeding unit, type RSE, a special multicontact connector is built in a box. Each transformer has a grounded shield between the primary and secondary winding to reduce the capacitive coupling.

Table 3: Main parameters

Type (former type)	Input voltage	Rated power	Output voltage	Output current	Frequency range	Duty cycle
	V	kVA	kV	A	Hz	
PEOS 39/7.8 (ETO 4.9/7.8-50)	550	39	7.8 / 3.9	4.9 / 4.9	50 ... 300	1 h ON - 1 h OFF, 2 cycles per day
PEOS 39/9.9	550	39	9.9 / 9.13 / 4.95 / 4.56	3.9 / 4.2 / 3.9 / 4.2	50 ... 300	1 h ON - 1 h OFF, 2 cycles per day
PEOS 39/11 (ETO 3.6/11-50)	550	39	10.7 / 8 / 5.35 / 4	3.6 / 3.6 / 3.6 / 3.6	50 ... 300	1 h ON - 1 h OFF, 2 cycles per day
PEOS 70/12	550	70	12 / 6	6 / 6	50 ... 300	1 h ON - 1 h OFF, 4 cycles per day
PEOS 100/13	550	100	13 / 8 / 3.5	5 / 5 / 5	30 ... 300	1 h ON - 1 h OFF, 3 cycles per day
PEOS 50/16	550	50	16 / 8	3 / 3	50 ... 300	1 h ON - 1 h OFF, 3 cycles per day
PEOS 170/17	550	170	17 / 8.5 / 4	10 / 10 / 10	50 ... 300	1 h ON - 1 h OFF, 3 cycles per day
PEOS 27/18 (ETO 1.5/21-50)	550	27	18 / 9	1.5 / 1.5	50 ... 300	1 h ON - 1 h OFF, 2 cycles per day
PEOS 20/30	550	20	30 / 15	0.7 / 0.7	50 ... 300	1 h ON - 1 h OFF, 6 cycles per day
PEOS 70/32	550	70	32 / 16	2.2 / 2.2	50 ... 300	1 h ON - 1 h OFF, 6 cycles per day

Table 4: Dimensions and weight (approx.)

Type (former type)	Design group	Length (L) (approx.)	Width (W) (approx.)	Height (H) (approx.)	Weight (approx.)
		mm	mm	mm	kg
PEOS 39/7.8 (ETO 4.9/7.8-50)	A	870	510	550	380
PEOS 39/9.9	A	870	510	550	380
PEOS 39/11 (ETO 3.6/11-50)	A	870	510	550	380
PEOS 70/12	B	960	850	1300	700
PEOS 100/13	B	1300	925	1600	1220
PEOS 50/16	C	950	850	1250	640
PEOS 170/17	B	1300	925	1600	1260
PEOS 27/18 (ETO 1.5/21-50)	A	870	510	550	320
PEOS 20/30	C	950	850	1150	620
PEOS 70/32	B	1175	850	1600	730

Modification of the technical data on request!

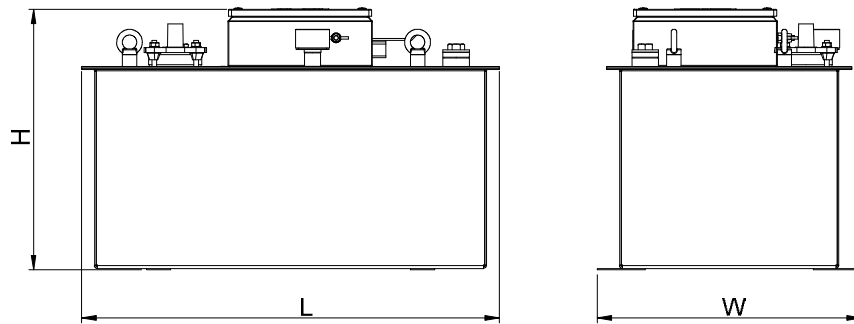


Figure 1: Design group A

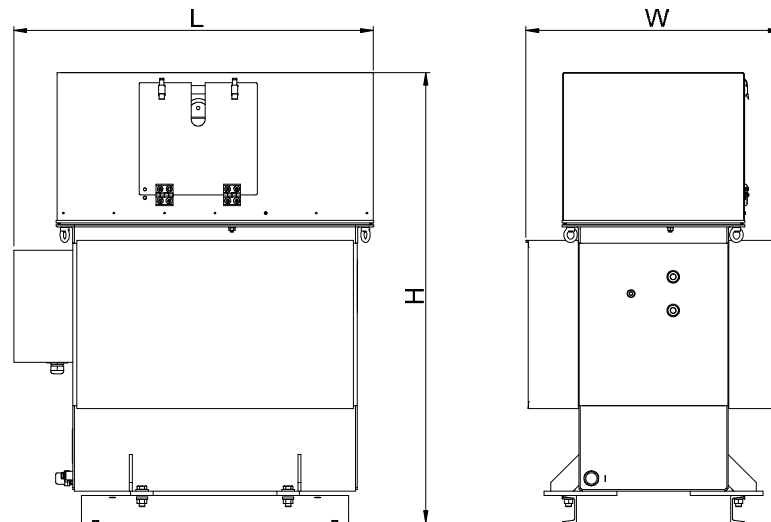


Figure 2: Design group B

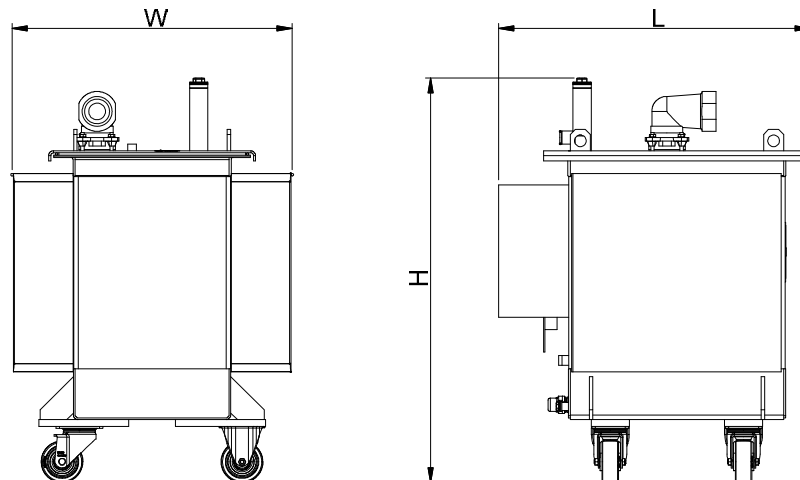


Figure 3: Design group C

Type designation

PEOS a/b

a = rated power in kVA

b = rated output voltage in kV