EMP Protection Units

Analog Communication and Control Lines

Series/Type: **B84320Z0010H033/B84320Z0010H035**

Date: January 2004

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General

The EMP protection unit is sequenced, i.e. to use simultaneously the benefits of inert-gas-filled surge arresters (extremely high surge capability) and of varistors (fast response). They are isolated by a series inductor.

The arrester is housed in a plug-in socket, so it can be removed and tested without detaching the lines.

Note on voltage figures:

The maximum voltage on the filter output depends primarily on the rise time until the arrester responds. For this reason the maximum voltage on the filter output is stated in the following table as a function of the rising edge dv/dt of the pulse.

Technical data

Ordering code	B84320Z0010H033		B84320Z0010H035		
Rated voltage V_R	60	V	140	V	
Rated frequency f_R	0 ... 10	kHz	0 ... 10	kHz	Pass bandwidth at Z_L
Rated current I_R	1	A	1	A	T_A = 40 °C
Number of lines	10		10		Pairs
Line impedance Z_L	600	Ω	600	Ω	
Max. DC resistance R_{max}	<2	Ω	<2	Ω	Per line
Permissible ambient temperature T_A	−25/+40	°C	−25/+40	°C	
Climatic category (EN 60068-1)	25/085/56		25/085/56		−25 °C/+85 °C/56 days damp heat test
Approx. weight	300	g	300	g	
Nominal DC spark-over voltage V_{sdcN}	<800	V	<800	V	
Nominal surge current (8/20 µs)	5 10	kA kA	5 10	kA kA	Line/line Pair/case
Suppression condition	$I < I_R$		$I < I_R$		

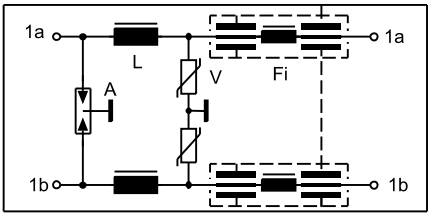
Maximum voltage on filter output:

At rising edge	Unsymmetrical	Unsymmetrical	Symmetrical
dv/dt = 0.1 kV/µs	$\hat{v} \leq 190$ V	$\hat{v} \leq 200$ V	$\hat{v} \leq 17$ V
dv/dt = 1 kV/µs	$\hat{v} \leq 260$ V	$\hat{v} \leq 180$ V	$\hat{v} \leq 15$ V
dv/dt = 1 kV/ns[1)]	$\hat{v} \leq 16$ V	$\hat{v} \leq 20$ V	$\hat{v} \leq 8$ V

1) Typical test pulse: rise time 10 ns, time to half value 1500 ns, charge voltage min. 50 kV, source impedance 90 Ω

Circuit diagram

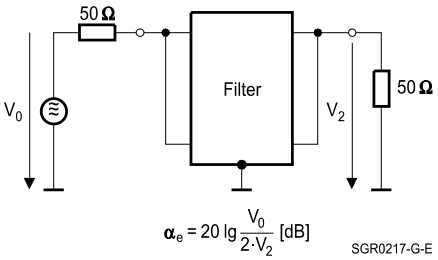
(only one of 10 pairs shown)



SGR0216-8-E

Insertion loss α_e per pair (typical values at Z = 50 Ω)

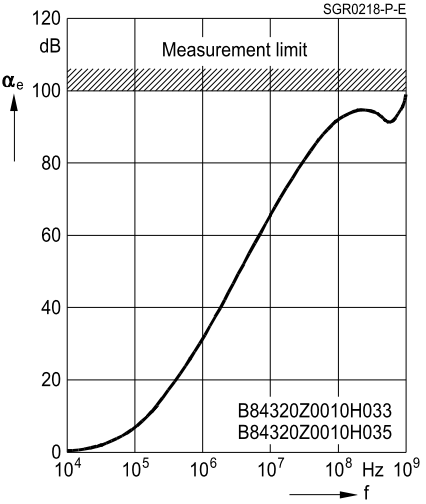
Measurement circuit



SGR0217-G-E

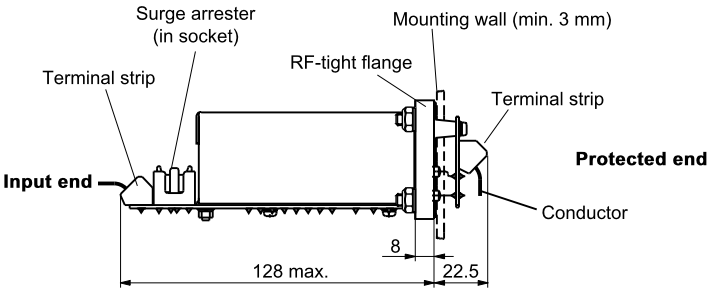
Asymmetrical measurement circuit
to MIL-STD-220A

SGR0218-P-E



Dimensional drawing

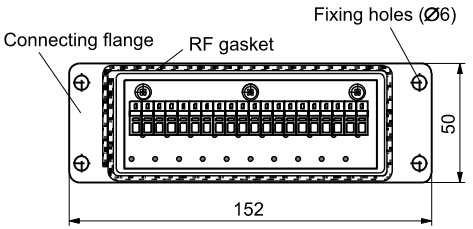
Side view



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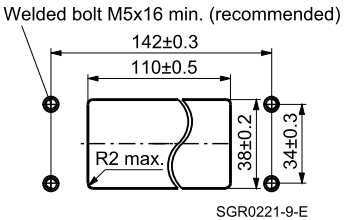
Terminal strip:
Terminals with cage strain system, suitable for conductors 0.08 ... 2.5 mm^2

Front view of protected end



SGR0220-1-E

Installation section and attachment



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