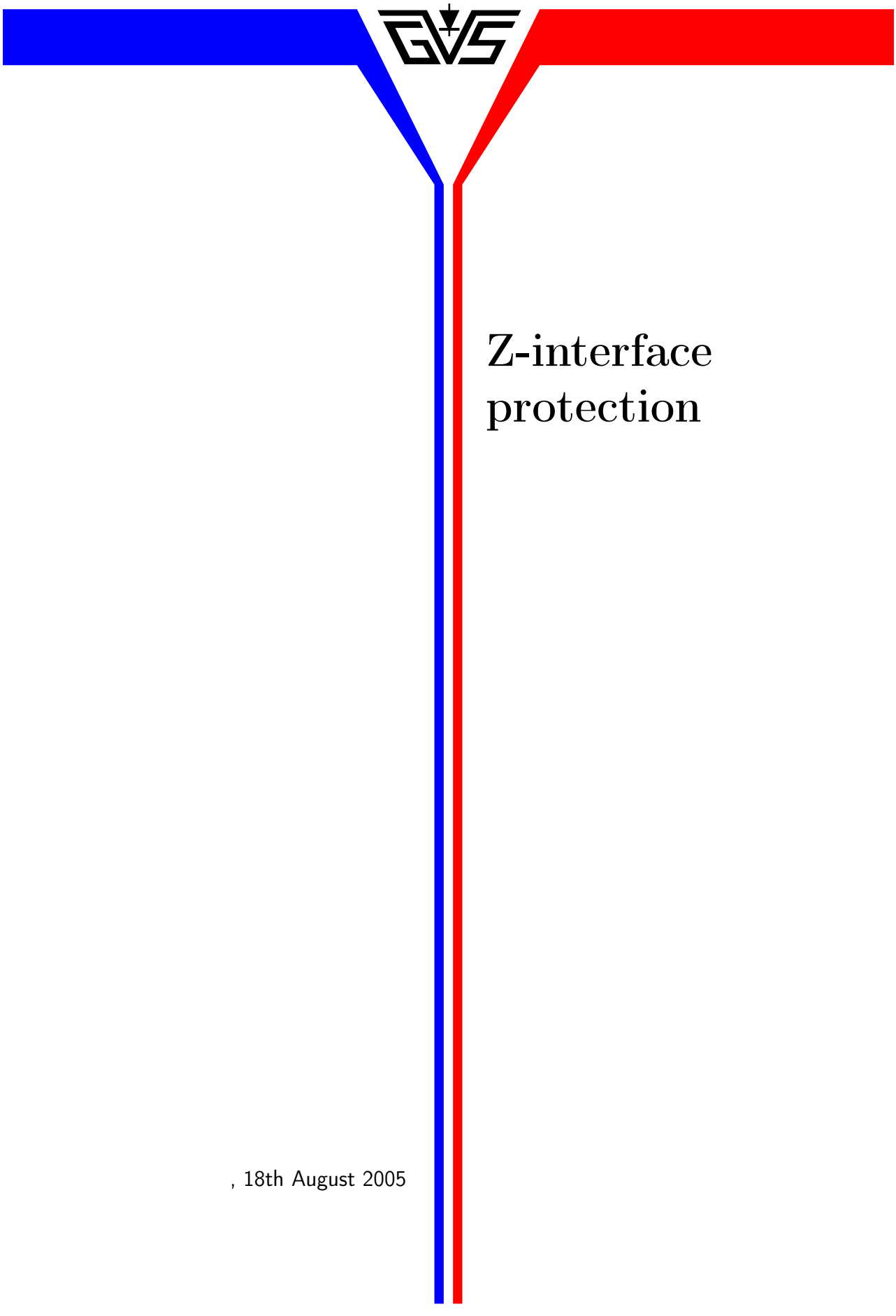

Z-interface protection

, 18th August 2005

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1 Z-interface protection

Z-interface protection should conform to Recommendation ITU-T K.20 for the exposed and unexposed equipment.

Z-interface terminal protection should meet requirements specified in the following tables:

Number	Test	Between	Test circuit	Maximum test voltage and duration	Number of tests	Acceptance criteria
1	Discharge	A and E with earthed B-wire	1a	$U_{c(max)}$ = 1 kV	10	A
		B and E with earthed A-wire	1a	$U_{c(max)}$ = 1 kV	10	A
		A+B and E	1b	$U_{c(max)}$ = 1 kV	10	A
2	Induction	A+B and E	2 $R_1 = R_2 =$ 600 Ω, S2 not applied	$U_{ac(max)}$ = 300 $V_{r.m.s.}$ 200 ms	5 for each position S_1	A
3	Contact	A+B and E	3	$U_{ac(max)}$ = 220 $V_{r.m.s.}$ 15 min	1 for each position S	B

Table 1: *Test specification conforming to K.20 for unexposed equipment*

No.	Test	Between	Test circuit	Max. test voltage and duration	Number of tests	Added primary protection	Acceptance criteria
1	Discharge	A and E with earthed B-wire	1a	$U_{c(max)}$ = 1 kV	10	No	A
		B and E with earthed A-wire	1a	$U_{c(max)}$ = 1 kV	10	No	A
		A+B and E	1b	$U_{c(max)}$ = 1 kV	10	No	A
2	Discharge	A and E with earthed B-wire	1a	$U_{c(max)}$ = 4 kV	10	No	A
		B and E with earthed A-wire	1a	$U_{c(max)}$ = 4 kV	10	No	A

No.	Test	Between	Test circuit	Max. test voltage and duration	Number of tests	Added primary protection	Acceptance criteria
		A+B and E	1b	$U_{c(max)} = 4$ kV	10	No	A
3a	Induction	A+B and E	2 $R_1 = R_2 =$ 600 Ω, S2 not applied	$U_{ac(max)} =$ 600 $V_{r.m.s.}$ 1000 ms	5 for each position S_1	Yes	A
3b	Induction	A+B and E	2 $R_1 = R_2 =$ 200 Ω, S2 not applied	$U_{ac(max)} =$ 600 $V_{r.m.s.}$ 1000 ms	1 for each position S	Yes	B

Table 2: *Test specification conforming to K.20 for exposed equipment*

The figures below demonstrate test circuits described in previous tables.

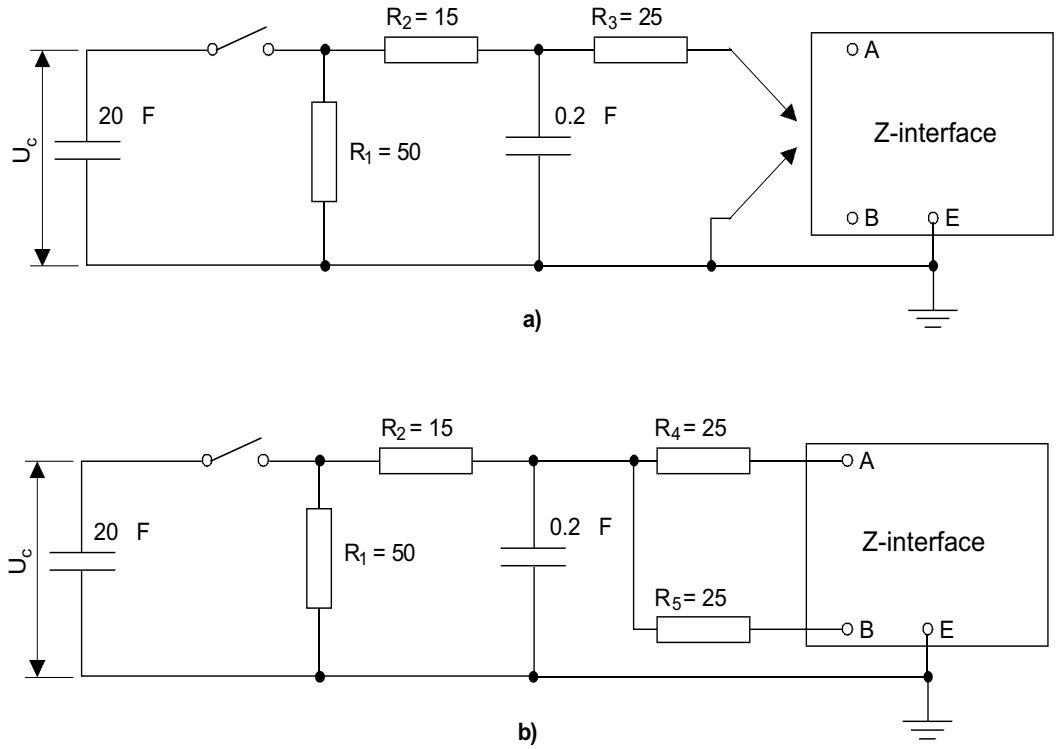

Figure 1: *Test circuit 1*

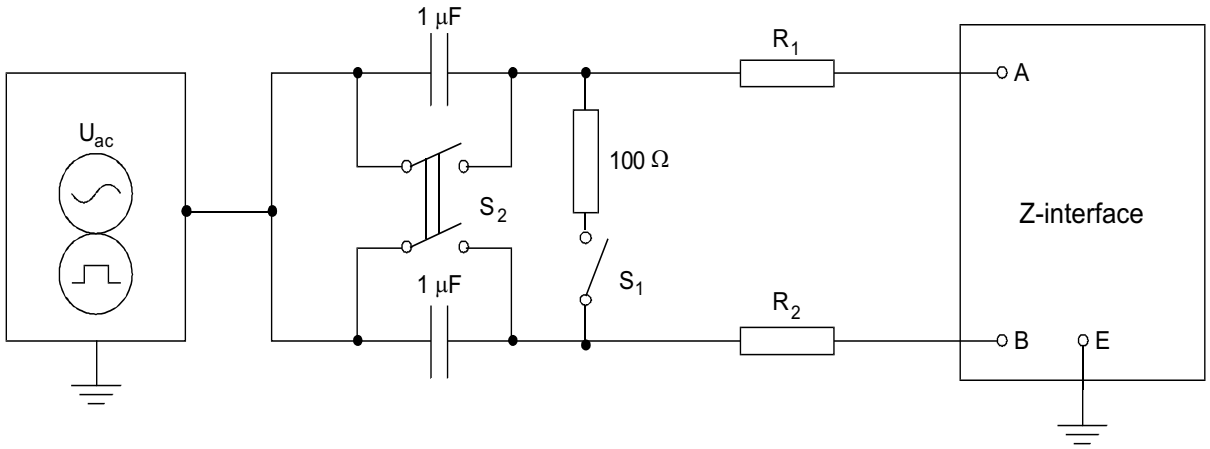

Figure 2: *Test circuit 2*

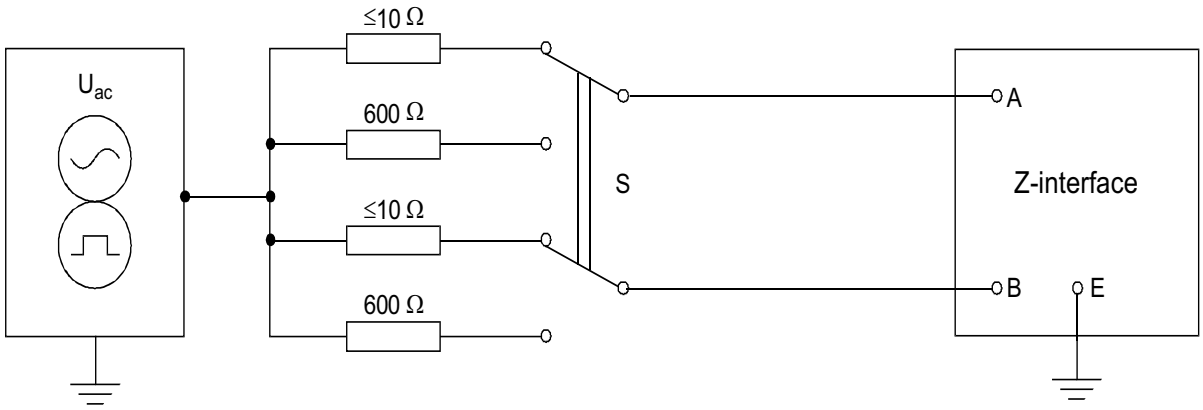

Figure 3: *Test circuit 3*

Criterium A requires that the equipment should endure the testing with no damage while the values of all relevant Z-interface parameters after completed testing should be within specified tolerances. No requirements are specified as to the equipment regular operation during the testing. Exceptionally, the fuses belonging to Z-interface or its protection interface may be replaced after completed testing.

Criterium B does not allow the occurrence of an open flame as a result of the testing. Any damage or durable disfunction occurred during the testing should be limited to a small number of Z-interfaces.

Gas-discharge tubes provide the primary protection.