

# Isolating amplifier unipolar/bipolar SINEAX TV 808, SIRAX TV 808

- for electrically insulating, amplifying and converting DC signals

## Type of protection



[EEx ia] IIC

## Certificate

Mechanical design	
Housing S17, SINEAX	PTB 97 ATEX 2191
Plug-in module, SIRAX	PTB 97 ATEX 2191

## Measuring input

for connection to intrinsically safe circuits with the following  
max. value:  $U = 30\text{ V}$

$U_o = 6\text{ V}$                        $L_i = 20\ \mu\text{H}$   
 $I_o = 63\ \mu\text{A}$                      $C_i = 20\ \text{nF}$   
 Linear characteristic

### Verification of the Intrinsic Safety acc. to EN 60 079-14

With the measurement of DC currents resp. DC voltages two intrinsically safe circuits are connected. The **certified** tables on page 22 give the values for  $L_o$  and  $C_o$  for typical applications. The tables are calculated by PTB and serve to be used as the verification of the intrinsic safety.

	Output	Power supply
Rated data	12 V / 20 mA	24-60 V resp. 85-230 V AC / 110 V DC
$U_m$	253 V	253 V AC resp. 125 V DC



SINEAX TV 808-1 in housing S17



SIRAX TV 808-6 as plug-in module

# Verification of Intrinsic Safety

**Table 1**

Values of  $L_o$  and  $C_o$  for measuring DC currents or voltages in intrinsically safe circuits which **linearly** limit current.

$U_i$	$I_i$	Explosion group			
		IIC		IIB	
		$L_o$	$C_o$	$L_o$	$C_o$
13 V	29 mA	40 mH	258 nF	150 mH	1580 nF
19 V	29 mA	40 mH	110 nF	150 mH	840 nF
24 V	29 mA	40 mH	66 nF	150 mH	560 nF
30 V	29 mA	40 mH	42 nF	150 mH	370 nF
13 V	59 mA	10 mH	258 nF	40 mH	1580 nF
19 V	59 mA	10 mH	110 nF	40 mH	840 nF
24 V	59 mA	10 mH	66 nF	40 mH	560 nF
30 V	59 mA	10 mH	42 nF	40 mH	370 nF
13 V	79 mA	6 mH	258 nF	22 mH	1580 nF
19 V	79 mA	6 mH	110 nF	22 mH	840 nF
24 V	79 mA	6 mH	66 nF	22 mH	560 nF
30 V	79 mA	6 mH	42 nF	22 mH	370 nF
13 V	100 mA	3 mH	258 nF	12 mH	1580 nF
19 V	100 mA	3 mH	110 nF	12 mH	840 nF
24 V	100 mA	3 mH	66 nF	12 mH	560 nF
30 V	100 mA	3 mH	42 nF	12 mH	370 nF

**Table 2**

Values of  $L_o$  and  $C_o$  for measuring DC currents or voltages in intrinsically safe circuits which **linearly** limit the current.

$U_i$	$I_i$	Both $L_o$ and $C_o$			
		Explosion group			
		IIC		IIB	
		$L_o$	$C_o$	$L_o$	$C_o$
13 V	29 mA	2 mH	150 nF	10 mH	652 nF
19 V	29 mA	5 mH	71 nF	10 mH	367 nF
24 V	29 mA	5 mH	44 nF	10 mH	250 nF
30 V	29 mA	6 mH	12 nF	25 mH	167 nF
13 V	59 mA	2 mH	150 nF	9 mH	652 nF
19 V	59 mA	2 mH	71 nF	10 mH	367 nF
24 V	59 mA	2 mH	35 nF	10 mH	250 nF
30 V	59 mA	2 mH	3 nF	10 mH	154 nF
13 V	79 mA	2 mH	150 nF	9 mH	652 nF
19 V	79 mA	2 mH	71 nF	10 mH	367 nF
24 V	79 mA	2 mH	28 nF	10 mH	250 nF
30 V	79 mA	-	-	10 mH	132 nF
13 V	100 mA	2 mH	150 nF	5 mH	652 nF
19 V	100 mA	2 mH	71 nF	10 mH	367 nF
24 V	100 mA	1 mH	22 nF	3 mH	250 nF
30 V	100 mA	-	-	7 mH	107 nF

**Table 3**

Values of  $L_o$  and  $C_o$  for measuring DC currents or voltages in intrinsically safe circuits with **electronic** current limitation.

$U_i$	$I_i$	Type of protection			
		EEx ib IIC		EEx ib IIB	
		$L_o$	$C_o$	$L_o$	$C_o$
13 V	29 mA	5 mH	147 nF	10 mH	635 nF
19 V	29 mA	9 mH	68 nF	25 mH	367 nF
24 V	29 mA	1.8 mH	31 nF	25 mH	221 nF
30 V	29 mA	not permitted	not permitted	10 mH	137 nF
13 V	59 mA	3 mH	148 nF	10 mH	635 nF
19 V	59 mA	0.33 mH	35 nF	15 mH	225 nF
24 V	59 mA	not permitted	not permitted	5 mH	179 nF
13 V	79 mA	1.5 mH	146 nF	10 mH	459 nF
19 V	79 mA	not permitted	not permitted	6 mH	240 nF
24 V	79 mA	not permitted	not permitted	0.49 mH	59 nF
13 V	100 mA	0.7 mH	143 nF	6 mH	442 nF
19 V	100 mA	not permitted	not permitted	1.8 mH	312 nF

All tables have been calculated by PTB.

The tables 1 and 3 are an integral part of the certificate.