

## Safety Pressure Limiter DB-1000/2

### General

The electronic safety pressure limiter DB 1000/2 is the combination of a pressure limiter (PZH) and an safety pressure limiter (PZHH) together in a common case and work independently of each other.

The application is to prevent a transgression of the maximum operating pressure in refrigeration plants, air-conditioning systems, heat pumps, pressure boilers and steam generators in accordance with BGR 500, chapter 2.35 (operator) and EN 378 (manufacturer).

Pressure limiter (PZH) and safety pressure limiter (PZHH) supervise the respectively oriented pressure threshold. At transgression the respective output relay is switched inactively and a signal LED flashes. The reset of the PZH is carried out by means of a button at the case. The PZHH can be reseted only after removal of the lid by means of a button.

### Features

- ✎ Safety pressure limiter in accordance with EN 378 with self-test functions
- ✎ internal errors cause the immediate switching off of the outputs and being shown by a LED-flash code
- ✎ USB socket for the connection with PC or notebook computer
- ✎ Parameter setting, reading of the appeared pressure maximum and other functions are possible with the help of an enclosed PC program
- ✎ independent analogous pressure output of 4...20 mA (4 mA at 0 bar, 20 mA at nominal pressure)

### Pressure area

The pressure cells of the PZH and the PZHH will be choosed depending on use purpose. The nominal pressure (up to 700 bar) is indicated in the model number.

Example: DB 1000/2 -- 50: Nominal pressure 50 bar

### Pressure measuring cells

High-grade steel diaphragm, resistant to all refrigerants to EN 378-1 (appendix E) permitted overload up to double nominal pressure, the bursting pressure is the 2,5 times nominal pressure

### Photo DB1000/2 - 50



### Media and operating conditions

- ✎ Operating temperature: - 40.... + 80 °C (for the device)
- ✎ Temperature in media: -40...+125 °C (under using of heat insulation between sensor and media)
- ✎ Shock proofed
- ✎ Vibration speed max. 4,5 (10) mm/s (category B Class III in according ISO 2372 ) at 50 Hz
- ✎ Protection class: IP 65 (when the lid is closed)

Resistance against all refrigerants to EN 378-1 (appendix E)

The safety pressure limiter is suitable for using with all refrigerants of the media group 1 und 2 in accordance with the Pressure Equipment Directive (PED) 97/23/EG, for example

Mg1: NH3 (R717)

Mg2: R22, R134a, R507, R23, R744 (CO2), R404a, R407a, R407c

**Certified according "EG-Baumusterprüfung"**

**(Type Examination) (Guideline 97/23/EG),**

**Certificate-Number 01 202 931-B-09-0011 by TÜV Rheinland**

Patent pending under number 11714735 at Patent Office Munich

## Electronic

Supply voltage 24V DC +/- 20%  
Current consumption max. 90 mA

Pressure measuring grid 5ms  
Pressure limit PZH and PZHH adjustable between 5% and 90% of nominal pressure  
Precision of switch point: 0,5% of nominal pressure  
Switch delay adjustable between 0,0...1,0 s

### Load capacity of the safety relays

#### At DC 24V

DC1: non or low inductive loads (L/R < 1ms)                      max. 9,0A  
DC13: DC-electromagnet (contactor)                                      max. 1,8A

#### At AC 230V

AC1: non or low inductive loads (cos phi > 0,95)                      max. 6,3A  
AC3: Squirrel cage motors                                                      max. 2,5A  
AC15: electromagnetic load (contactor >72VA)                              max. 1,4A

## Packaging / Dimension

### Case

Encapsulated aluminium case  
dimension l x w x h: 122 x 120 x 81 mm

### Pin assignment S1

Pin 1 and 2      Relay contact PZH  
Pin 3 and 4      Relay contact PZHH  
The relay contacts are connected in series by the manufacturer

### Pin assignment S2

Pin 1              Ground  
Pin 2              +24V DC  
Pin 4              analogue pressure output 4-20 mA  
                         with load resistor against GND  
                         (Pin 1) 200...800 Ohm

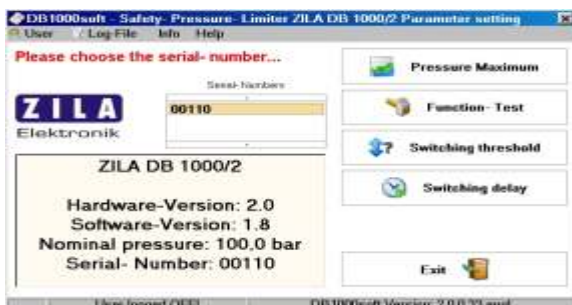


Distance P1-P2 (centre to centre) =45,7 mm

Media connectors PZH and PZHH G ¼ inch

**Caution: When screwing on the pressure line the maximum torque may not be exceeded of 10 Nm!**

## PC-Program DB-1000soft



- Reading of the previous pressure maxima with time stamp
- Function test (triggering PZH and PZHH without raise of the pressure)
- Password protected input of the switch level
- Password protected input of the switching delay time
- Extensive protocol functions

## EC type examination to guideline 97/23/EC

The DB1000/2 have been checked and certified by the "TÜV Rheinland" according to the following norms:  
DIN EN12263: 1999; DIN's EN60730 1:2005; DIN EN 607-30-2-6:2004 (outline); DIN EN12952 11:2007;  
DIN EN12953 9:2007; guideline 97/23/EC (pressure equipment guideline).  
(Certificate .-no: 01 202 931-B 09-0011).

Conformity explanation: The DB10002 is concurrently in accordance with above-mentioned examinations to the machine guideline 2006/42/EC.

Specification subject to change