

## Application Note: Testing with IP 6.2 according to IEC 61000-4-5:2005 (Edition 2)

The IP6.2 was designed for the IEC 61000-4-5:1995 (Edition 1). In 2005 the Edition 2 was published by the IEC. This edition 2 has some differences to edition 1 for testing control- and data lines. This must be kept in mind when testing with the IP 6.2 according to edition 2.

For the symmetrical operated lines tested with the 1.2/50us - 8/20us or the 10/700us - 5/320us impulse shape, according to figure 14 of edition 2 the following is required:

- matching resistors  $R_{m2}$
- coupling with gas arrester or breakdown avalanche diode

The matching resistors are included in the IP 6.2 and coupling with gas arrester is also possible. The gas arrester in parallel with 100nF is not necessary any more. There are no breakdown avalanche diodes inside the IP 6.2.

For the asymmetrical operated lines are requested in edition 2:

1. 40 Ohm in series with 0.5uF (figure 11)
2. 40 Ohm in series with gas arrester (figure 12)
3. 40 Ohm in series with a breakdown avalanche diode (figure 13)

With the IP 6.2 couplings 1 and 2 are possible. The gas arrester in parallel with the 100nF is not necessary any more. Note that there is a printing error in the current issue of edition 2. There must be no capacitor in parallel to the gas arrester. There are no avalanche breakdown diodes inside the IP 6.2.

When coupling with avalanche breakdown diodes is an issue it is possible to use external avalanche breakdown diodes. The diodes can be connected between the IP6.2 direct output and the EUT.

### Conclusion

The IP 6.2 can be used for testing according to IEC 61000-4-5 Edition 2, and if necessary, external avalanche breakdown diodes can be used.

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