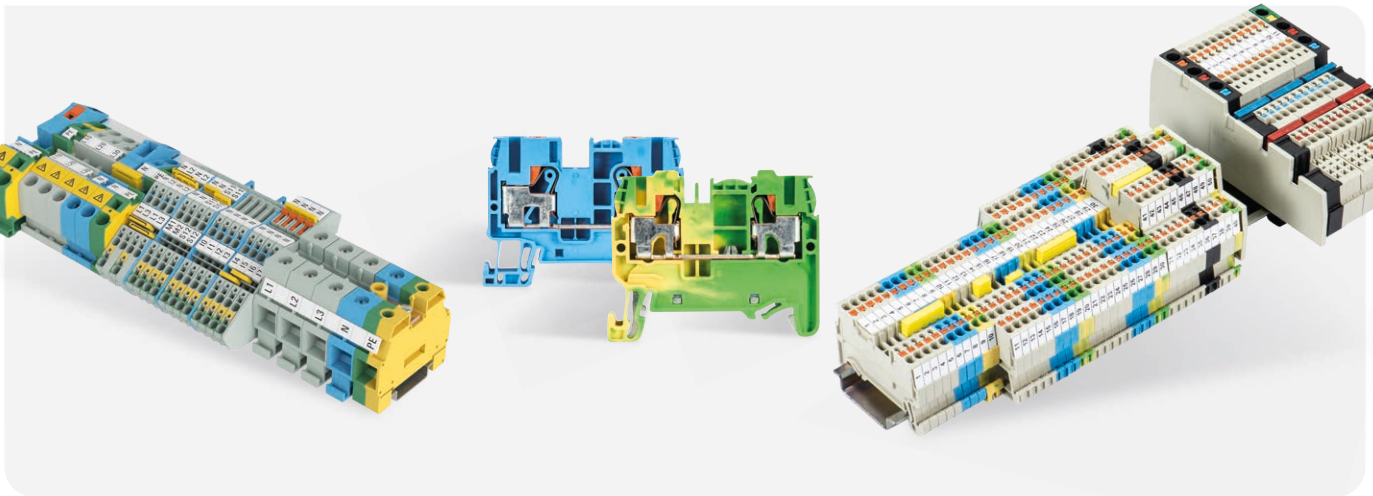


Information about

# EX APPLICATIONS

DIN rail terminal blocks for installations with explosion hazard  
(Ex terminals) Protection category Increased safety “e”



## EX TERMINALS

Ex terminals are DIN rail terminal blocks that have been tested and certified by a European Ex test institute according to

**EN IEC 60079-0 – Explosive atmospheres - Part 0: Equipment - General requirements**

**EN IEC 60079-7 – Explosive atmospheres - Part 7: Equipment protection by increased safety ,e‘**

The protection category Increased safety “e” applies to electrical equipment that resists sparks, electric arcing or hazardous surface temperatures during operation. DIN rail terminal blocks thus fall into temperature category T6 in which electrical equipment at an ambient temperature of 40 °C and proper use does not exceed the maximum temperature (surface temperature) of 85 °C.

However, for DIN rail terminal blocks as incomplete electrical equipment, only a partial certification is issued.

This certificate is the basis for the final acceptance and certification of the complete installation before it is commissioned by an expert.

The certificate (prototype test certificate) includes a description of the DIN rail terminal blocks, in which special requirements regarding the preparation of terminal strips are put into place, for example, installing partitions and end plates when terminal blocks are connected in series. This information is also provided in our catalog that in this case serves as an instruction manual.

## TEST CERTIFICATE

Certificates from notified bodies are available for feed-through terminal blocks of series WK(N).., WKF.., WKFN.., WT and ground blocks of series WK(N)..SL.., WKF..SL.., WKFN..SL.., WT..PE as well as revos Ex industrial multipole connectors.

The certificates indicate the relevant rated values and include the accessories listed in the description.

The areas of application are divided into:

**Group I: Electrical equipment for mine openings with firedamp hazard**

**Group II: Electrical equipment for hazardous areas except for mine openings with firedamp hazard (for example installations with explosion hazard for the chemical and petrochemical industry).**

According to a resolution of the DEK (Deutsche Elektrotechnische Kommission) terminal blocks are also accepted as electrical equipment for Group I (firedamp protection Ex e I) for which only the increased safety protection type ‘e’ for Group II (explosion protection Ex e II) has been certified and vice versa.

Ex protected DIN rail terminal blocks are identified with distinct safety protection and an additional marking according to ATEX directive 2014/34/ EU. The complete test certificate with a description is available on request or it can be downloaded from Wieland Electric Download Center.

## PROTECTION CATEGORY “INTRINSIC SAFETY EX I”


The DIN rail terminal blocks can be used in Group II (Category 2) and Group 1 (Category M2) equipment, as the standard requirements are identical in this case.


It has been generally accepted that feed-through terminals in intrinsic circuits are clearly marked with the blue coloring of the insulated housing. For intrinsic circuits, feed-through terminals can be used in the standard version and if required are available with blue insulating housing.

## SAFETY INFORMATION

- The information regarding cross sectional area and connection types pertains to unprepared wires without ferrules! Ferrules are not necessary for secure connection. Whenever ferrules are used, make sure that the tools specified by the manufacturer are used exclusively.
- The voltage ratings apply to the terminals in their intended application. When different products are mounted adjacent to each other, the proper isolation distances must be adhered to.
- If the ground blocks are not used in block assemblies, but are mounted to the rail as single terminal blocks, end clamps have to be used.

## ATEX REGULATION

- For the use of DIN rail terminal blocks in Ex areas, the regulations of EN 60079-0 apply; whereas for increased safety Exe the regulations of EN 60079-7 must be followed. For an approximation of the laws of the EU member states, directive 2014/34/EU was created, which is generally known as ATEX 100a and which is the basis for harmonization in this field. ATEX stands for “atmosphere explosive” while 100a refers to the corresponding article of the EC contract.
- Directive ATEX 100a applies for protection against dust and gas explosions in all industrial Ex areas and in mining. The testing and certifying institutes named in directive ATEX 100a must follow accreditation procedures which are the same throughout Europe.
- In accordance with EN 60070-0/60079-7 and ATEX 100a, these certifying institutes write out EC certificates for prototype tests. These prototype test certificates for components together with the corresponding quality system certification of the supplier are required to obtain the so-called ATEX approval.
- In combination with the  mark, the markings of the Wieland terminal blocks have the following meaning:

	Identification
II	Device group
2	Category
G D	Areas
KEMA	Name of testing institute
ATEX...	Certificate, year of testing, number



## MOUNTING AND OPERATING INSTRUCTIONS TERMINALS AND ACCESSORIES FOR EX E APPLICATIONS

- If feed-through blocks are mounted directly adjacent to other feed-through blocks of a different size, or directly adjacent to ground blocks, the open side of the block group of the same type must be covered by an end plate or partition.
- If adjacent DIN rail terminal blocks are jumpered or if jumpered DIN rail terminal blocks are positioned next to unjumpered DIN rail terminal blocks, a partition plate must be inserted between the individual terminal block groups or at the beginning and end of a laterally or longitudinally connected terminal block (group) in order to meet the specified isolation distances. Notched out and jumpering cross connectors can only be used for terminal types WT2.5; WT4 and WT6. It is essential to observe the product descriptions and the „Special conditions of use“ of the ATEX or IEC Ex certificate and the „EX-INFORMATION“ A2020.000.
- If the terminal blocks are combined with other certified series and sizes and when their accessories are used, the required creepage distances and clearances must be adhered to.
- The feed through terminal blocks and protective conductor terminal blocks are suitable for enclosures for use in explosive gas atmospheres or for use in the presence of combustible dust. For explosive gas atmospheres these enclosures must satisfy the requirements of EN 60079-0 and EN 60079-7. For combustible dust these enclosures must satisfy the requirements of 60079-0 and EN 60079-31.
- If the DIN rail terminal blocks are installed in a housing with protection type “e” (increased safety) according to EN 60079-7, the clearances and creepage distances stated in Table 2 must be adhered to..
- The indicated values for the current carrying capability refer to a maximum ambient temperature of 40 °C. When the terminal blocks are loaded with the maximum rated current the temperature rise will be max. 45 K.
- Operating temperature range:
  - 40° C - +80° C, series WK(N)/M..., WKF..., WT
  - 20° C - +80° C, series WKFN
- If cables are used whose cross-section is smaller than the nominal cable cross-section, the corresponding lower current must be specified in the EC prototype test certificate for the complete device.
- Due to the heat generated during operation at the specified current and at ambient temperatures of ≤ 40 °C, the DIN rail terminal blocks can be installed in equipment (mainly distribution and connection boxes) suitable for temperature class T6. If DIN rail terminal blocks are installed in equipment with a temperature class ranging from T1 to T5, it must be ensured that the maximum temperature of the insulating parts does not exceed the maximum value in the operating temperature range.
- When using Ex terminals, the product descriptions, installation instructions and the „Special conditions of use“ of the Ex certificates (EU type examination certificate) must be observed.

## TEMPERATURE CLASSES

Temperature class	T1	T2	T3	T4	T5	T6
Maximum surface temperature at equipment in °C	450	300	200	135	120	85



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