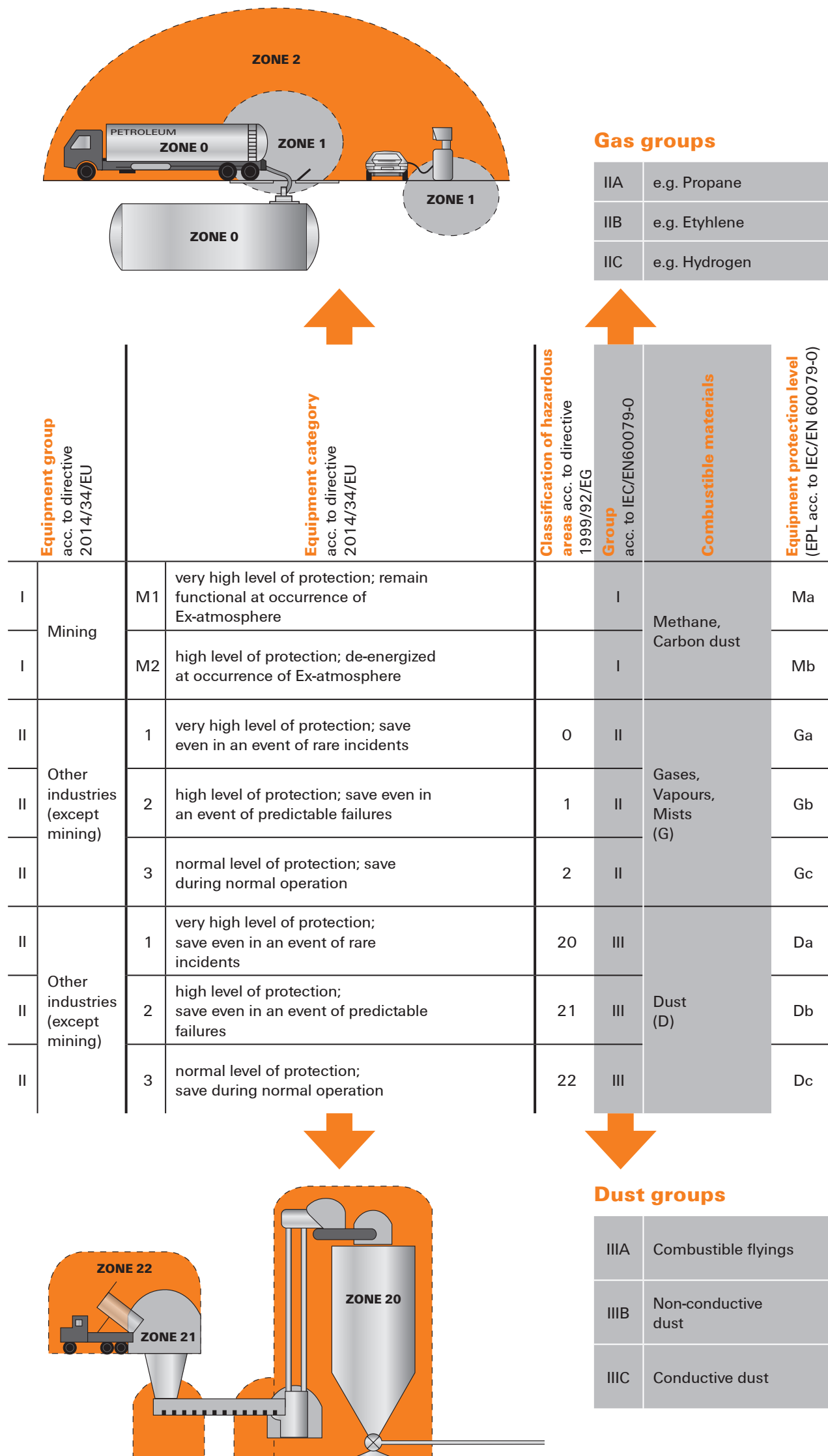


Hazardous areas guide

Area classification



Temperature class

Classification of the maximum surface temperatures into temperature classes for electrical equipment of group II

Temperature class ATEX/IECEx	Temperature class NEC/UL (AEx)	Maximum surface temperature
T1	T1	450 °C 842 °F
T2	T2	300 °C 572 °F
	T2A	280 °C 536 °F
	T2B	260 °C 500 °F
	T2C	230 °C 446 °F
	T2D	215 °C 419 °F
T3	T3	200 °C 392 °F
	T3A	180 °C 356 °F
	T3B	165 °C 329 °F
	T3C	160 °C 320 °F
T4	T4	135 °C 275 °F
	T4A	120 °C 248 °F
T5	T5	100 °C 212 °F
T6	T6	85 °C 185 °F
IEC/DIN EN 60079-0	NEC500H	°C °F

Types of Protection

Types of protection for electrical equipment in explosive gas atmospheres

Type of protection	Symbol	Main application	Norm
increased safety	eb	junction boxes, control stations for installing Ex-components (with a different type of protection), squirrel-cage motors, light fittings	IEC 60079-7 EN 60079-7 ISA 60079-7
flameproof enclosures	db	switchgears, control stations, indicating equipment, control systems, motors, transformers, heating equipment, light fittings	IEC 60079-1 EN 60079-1 ISA 60079-1
pressurized enclosures	pxb pyb pzc	switchgear and control cabinets, analysers, large motors	IEC 60079-2 EN 60079-2 ISA 60079-2
intrinsic safety	ia ib ic	instrumentation technology, fieldbus technology, sensors, actuators [Ex ib] = associated electrical apparatus – installation in the safe area	IEC 60079-11 EN 60079-11 ISA 60079-11
		intrinsically safe systems	IEC 60079-25 EN 60079-25
		FISCO: fieldbus intrinsically-safe concept	IEC 60079-27 EN 60079-27 ISA 60079-27
oil immersion	ob	transformers, starting resistors	IEC 60079-6 EN 60079-6 ISA 60079-6
powder filling	qb	sensors, display units, electronic ballasts, transmitters	IEC 60079-5 EN 60079-5 ISA 60079-5
encapsulation	ma mb mc	switchgear with small capacity, control and signalling units, display units, sensors	IEC 60079-18 EN 60079-18 ISA 60079-18
type of protection "n"	nAc nCc nRc	all electrical equipment for Zone 2 nA = non-sparking device nC = sparking devices and components nL = energy limited apparatus nR = restricted breathing enclosures	IEC 60079-15 EN 60079-15 ISA 60079-15
optical radiation	op_a op_b op_c	op is = inherently safe optical radiation op pr = protected optical radiation op sh = optical radiation interlock	IEC 60079-28 EN 60079-28

Types of protection for electrical equipment in explosive dust atmospheres

Type of protection	Symbol	Main application	Norm
protection by enclosures	ta tb tc	switchgear, control stations, junction boxes, control boxes, motors, light fittings	IEC 60079-31 EN 60079-31 ISA 60079-31
pressurization	pb pc	switchgear and control cabinets, motors	IEC 60079-2 EN 60079-2 ISA 60079-2
intrinsic safety	ia ib ic	instrumentation technology, fieldbus technology, sensors, actuators [Ex ib] = associated electrical apparatus – installation in the safe area	IEC 60079-11 EN 60079-11 ISA 60079-11
encapsulation	ma mb mc	switchgear with small capacity, control and signalling units, display units, sensors	IEC 60079-18 EN 60079-18 ISA 60079-18

Certifications worldwide



Type label for enclosure assemblies

Certification conditions and logo

Weidmüller
Weidmüller Interface GmbH & Co. KG
Klingenbergstr. 16 – D 32758 Detmold

Type: Klippon TB MH 303020
P/N: 9876543219
S/N: XA-DE-A-0000
Year of Construction: 2018

IP 66

NEMA TYPE: 4x

Rated voltage: 600 [V]
Rated current: 21 [A]
Cable size: 4 [mm²]
T amb: - 20 °C ... + 55 °C

Class I Zone 1 AEx e IIC T4 Gb

W A R N I N G - DO NOT OPEN WHEN ENERGIZED

Weidmüller
Weidmüller Interface GmbH & Co. KG
Klingenbergstr. 16 – D 32758 Detmold

Approval number
Part designation
Part No.
Serial number
Year of Construction

IP ingress protection class

Rated voltage: 600 [V]
Rated current: 21 [A]
Cable size: 4 [mm²]
T amb: - 20 °C ... + 55 °C

IBExU14ATEX1050
II 2G Ex eb IIC T4 Gb

IECEx IBE 14.0013
Ex eb IIC T4 Gb

W A R N I N G - DO NOT OPEN WHEN ENERGIZED

Name and address of manufacturer

Approval number

Part designation

Part No.

Serial number

Year of Construction

IP ingress protection class

Ambient temperature

Approval number

Ex marking

Made in Germany



Order number: 2854330000/01/2019/SMB

Personal support can be found on our website: www.weidmueller.com/contact

Protection degree NEMA/UL

Definition of the protection degrees according to NEMA/UL

Type	Description
1	Enclosure predominately for indoor use. Protection against penetration by solid foreign bodies.
2	Enclosure predominately for indoor use. Protection against penetration by solid foreign bodies and water.
3	Enclosure predominately for indoor use. Protection against penetration by rainfall and dust as well as damage due to ice formation.
3R	Enclosure predominately for indoor use. Protection against rain and snow as damage due to ice-formation.
3S	Enclosure predominately for indoor use. Protection against rain, snow and foreign bodies. External mechanisms can be operated despite ice accumulation.
4	Enclosure for indoor or outdoor use. Protection against rain, foreign bodies, splashing water and hose water as well as damage due to ice-formation on the outside of the enclosure.
4X	Enclosure for indoor or outdoor use. Protection against corrosion, rain, foreign bodies, splashing water and hose water as well as damage due to ice-formation on the outside of the enclosure.
6	Enclosure for indoor or outdoor use. Protection against hose water as well as against penetration by water during immersion; protection damage due to ice formation on the outside of the enclosure.
12	Enclosure for indoor use. Protection against dust accumulation, foreign bodies and non-corrosive drops of liquids.
13	Enclosure for indoor use. Protection against dust build-up, splashing water, oil, and non-corrosive coolants.

Protection degree IEC/EN

IP class of protection to (IEC/EN 60529)

The class of protection is indicated by a code consisting of the two letters IP and two digits representing the class of protection according to IEC/EN 60529

Example:

IP66

2nd digit: protection from liquids
1st digit: protection from solid bod

Protection against ingress of external particle matter (1st digit)

Digit	Description
0	No protection
1	Protection against ingress of large solid bodies with diameter > 50 mm. (Protection to prevent dangerous parts being touched with the back of the hand.)
2	Protection against ingress of large solid bodies with diameter > 12.5 mm. (Protection to prevent dangerous parts being touched with the fingers.)
3	Protection against ingress of large solid bodies with diameter > 2.5 mm. (Protection to prevent dangerous parts being touched with a tool.)
4	Protection against ingress of large solid bodies with diameter > 1 mm. (Protection to prevent dangerous parts being touched with a piece of wire.)
5	Protection against harmful deposits of dust, which cannot enter in an amount sufficient to interfere with satisfactory operation.
6	Complete protection against ingress of dust.

Protection against penetration of liquids (2nd digit)

Digit	Description
0	No protection
1	Protection against drops of condensed water falling vertically.
2	Protection against drops of liquid falling at an angle of 15° with respect to the vertical.
3	Protection against drops of liquid falling at an angle of 60° with respect to the vertical.
4	Protection against liquids splashed from any direction.
5	Protection against water jets projected by a nozzle from any direction.
6	Protection against strong jets of water
7	Protection against immersion in water under defined conditions of pressure and time.
8	Protection against indefinite immersion in water under defined conditions of pressure (which must be agreed between manufacturer and user and must be more adverse than number 7).

9K Protected against close-range high pressure, high temperature spray downs. Smaller specimens rotate slowly on a turntable, from 4 specific angles. Larger specimens are mounted upright, no turntable required, and are tested freehand for at least 3 minutes at distance of 0.15–0.2 m. There are specific requirements for the nozzle used for the testing.

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