

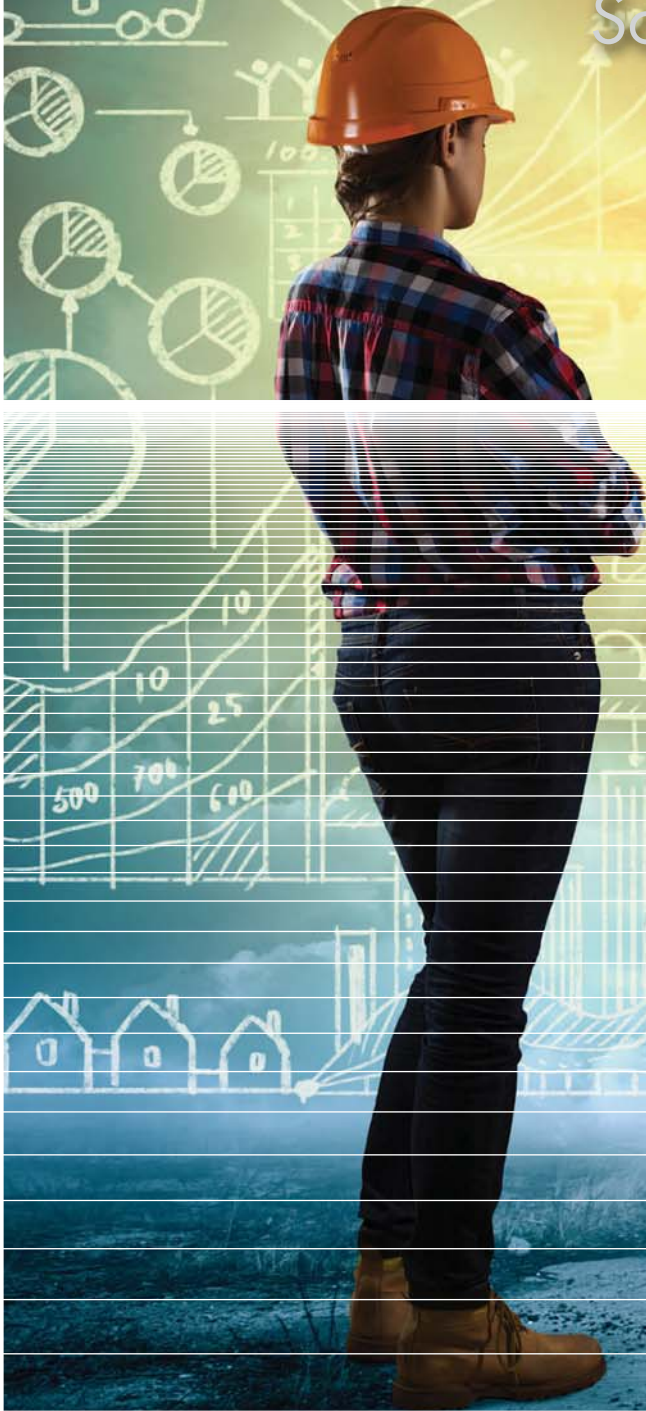
SLOVENSKO
ENGLISH

INŽENIRING

Rešitve, izvedbe in izdelki

ENGINEERING

Solutions, implementations
and products



INDUSTRIJA NAFTE IN PLINA
/ OIL AND GAS



KEMIČNA INDUSTRIJA
/ CHEMICAL INDUSTRY



ČISTILNE NAPRAVE
/ TREATMENT PLANTS



FARMACIJA
/ PHARMACY



RUDARSTVO
/ MINING



INŽENIRING

Rešitve, izvedbe in izdelki

Naše podjetje ima pomembno vlogo na področju protieksplzijske zaščite. Zaupajo nam pomembna podjetja na področju kemije, farmacije, nafte, plinov in rudarstva.

Naša dejavnost zajema:

- projektiranje,
- nadzor,
- vgradnjo in
- vzdrževanje.

Specialisti smo za okolja eksplozijske nevarnosti in spremljanje nevarnosti pred eksplozijo in požarom.

Naša področja delovanja so v:

- rudarstvu,
- industriji in
- javnih objektih.

S svojim znanjem vodenja projektov, izkušnjami in kompetencami omogočajo Tevelovi inženirji inovativen in strokoven pristop k izvedbi in varnosti objekta v skladu z našim sloganom:

NAŠA KVALITETA – VAŠA VARNOST



ELEKTRARNE
/ POWER PLANTS



ENGINEERING

Solutions, implementations and products

Our company has an important role in the field of explosion protection. We have earned the trust of important companies in the field of chemistry, pharmacy, oil, gas, and mining.

Our activities include:

- design
- control
- installation
- maintenance

We are specialists for explosion hazard environments and for monitoring explosion and fire hazards.

Our fields of operation are:

- mining
- industry
- public buildings

With their own knowledge of project management, experience, and competencies, Tevel's engineers provide an innovative and professional approach to the implementation and security of facilities in accordance with our slogan:

OUR QUALITY – YOUR SAFETY



INDUSTRIJA HRANE IN PIJAČE
/ FOOD AND BEVERAGE

INDUSTRIJA / INDUSTRY

Rešitve na področju protieksplzijske zaščite po zakonodaji (ATEX in druge nacionalne zakonodaje po svetu)

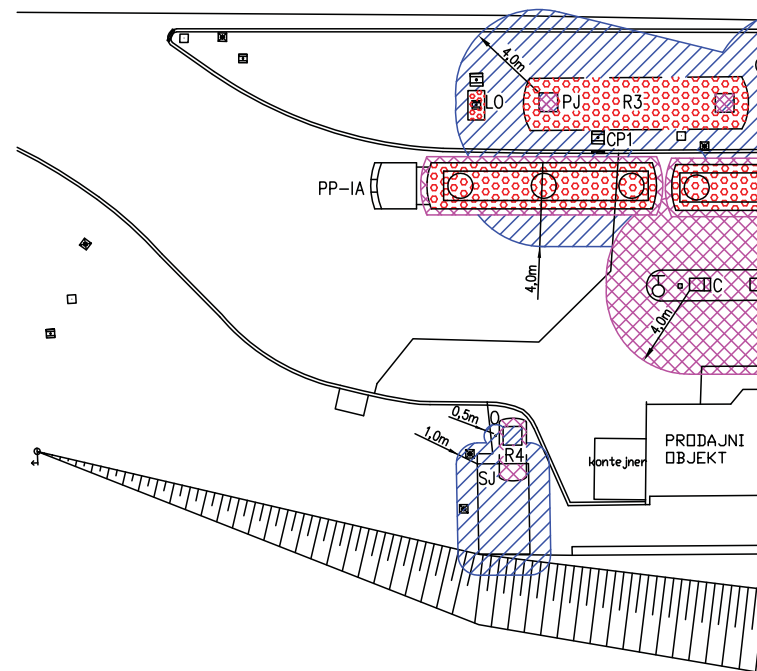
Rešitve na področju protieksplzijske zaščite zajemajo:

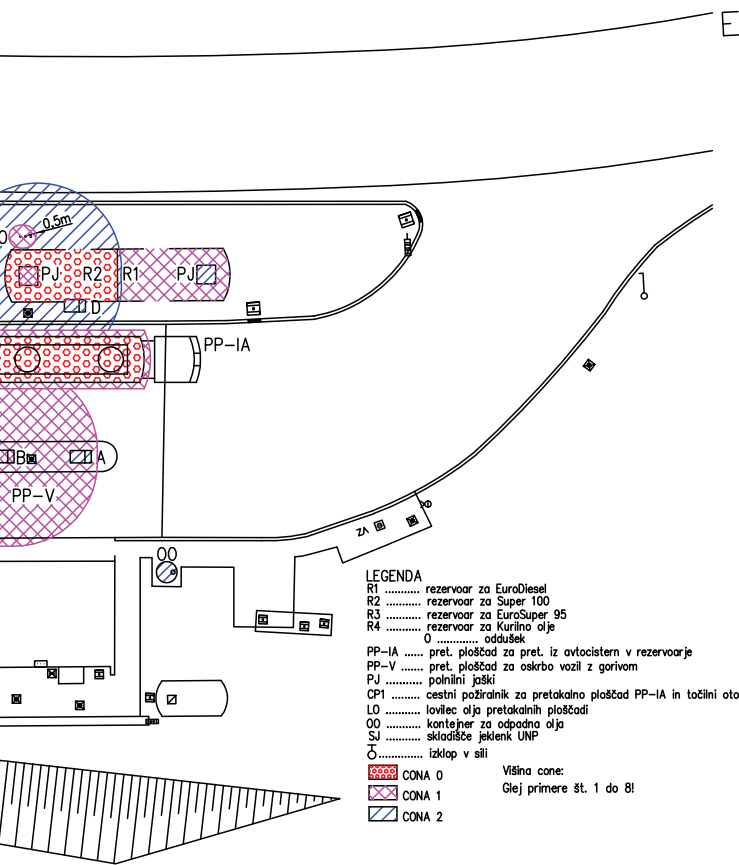
- izdelavo projektov in elaboratov in ocene tveganja,
- dobavo in izbiro ustreznih naprav v Ex zaščiti,
- vgradnjo opreme,
- pregled opreme,
- vzdrževanje opreme.

Vsak projekt, ki ima v procesih gorljive pline, hlape pare ali gorljivi prah pomeni nevarnost za eksplozijo. Pri takšnih projektih je treba narediti elaborat eksplozijske nevarnosti z oceno tveganja. Dokument opredeljuje območja nevarnosti glede na obseg in stopnjo nevarnosti. To je osnova za izbiro opreme v smislu protieksplzijske zaščite.

Pomembno pri taki vrsti zaščite je pravilna vgradnja in redno vzdrževanje, saj lahko kljub pravilni izbiri opreme z vgradnjo in vzdrževanjem porušimo zaščito in s tem izzivamo nevarnost za ljudi in objekt.

Naše storitve temeljijo na dolgoletnih izkušnjah, rednem usposabljanju in mnogih referencah na takšnih objektih.





Explosion protection solutions in accordance with legislation (ATEX and other national legislation worldwide)

Explosion protection solutions include:

- elaboration of projects and studies and risk assessment
- delivery and selection of appropriate devices in Ex protection
- installation of equipment
- inspection of equipment
- maintenance of equipment

Every project that includes flammable gases, vapours, or combustible dust in its processes presents an explosion hazard. For such projects, a hazard explosion study with a risk assessment should be made. The document identifies areas of danger according to the extent and degree of danger. This is the basis for the selection of equipment in terms of explosion protection.

For this type of protection, it is important to ensure correct installation and regular maintenance, as it is possible to ruin the protection, causing danger to people and the facility despite the correct selection of equipment, installation, and maintenance

Our services are based on many years of experience, regular training, and many references in this field.



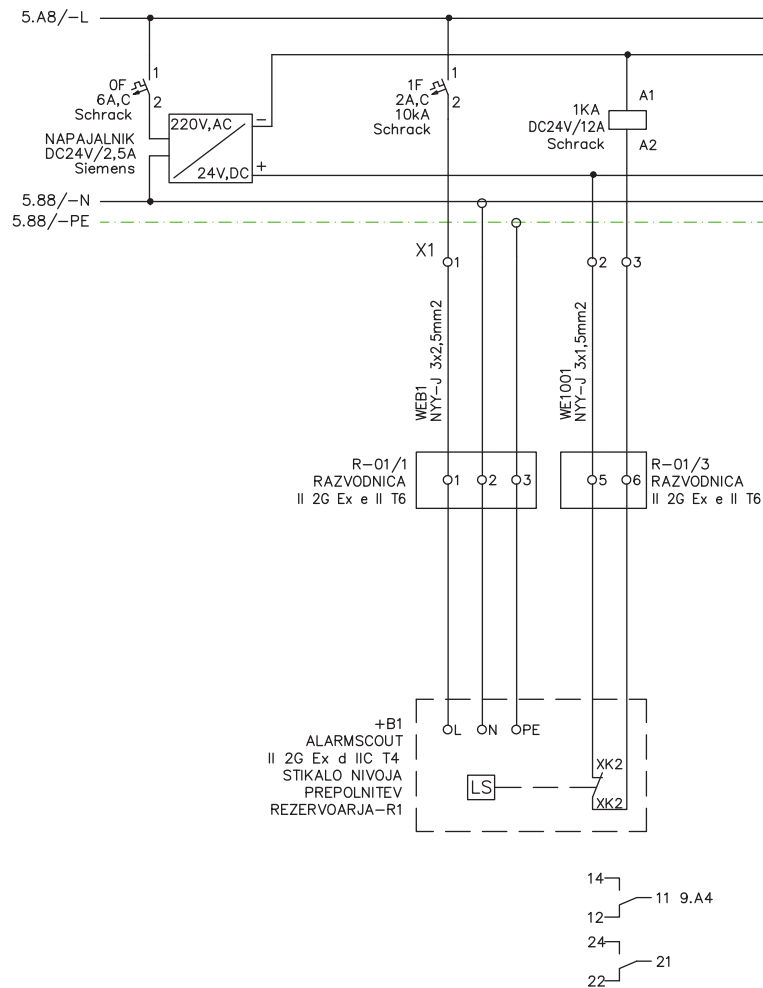
INDUSTRIJA / INDUSTRY

Rešitve na področju projektiranja in izvedbe elektro instalacij, razsvetljave in pogonske tehnike v protieksplzijski zaščiti

Ključna kriterija sta tehnološka ustreznost in zagotovljena varnost.

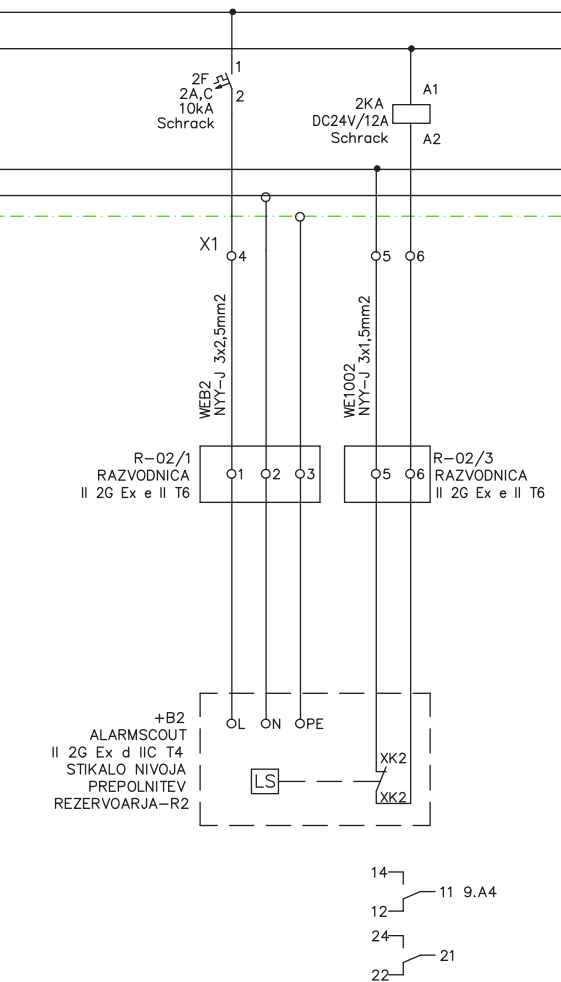
Izbrati je treba elemente glede na območja nevarnosti, katere opredeljujemo cone nevarnosti in fizikalno kemijske lastnosti nevarnih snovi. Prav tako morajo biti vgrajeni zaščitni elementi v skladu z zakonodajo o protieksplzijski zaščiti.

Kategorij naprav in vrst zaščit je veliko. Naše znanje in izkušnje na tem področju so ključnega pomena, da se vgradi ustrezna in hkrati tudi cenovno optimalna oprema. Racionalizacija in optimizacija investicijskih postopkov je ena najpomembnejših nalog dobrega inženiringa.



Ex kontrolna enota
/ Ex control unit





Solutions in the field of design and implementation of electrical installations, lighting and propulsion techniques in explosion protection

Key criteria are technological relevance and assured security. Elements should be selected according to the danger areas, which define the danger zones and physical and chemical properties of hazardous substances. Protective elements must also be installed in accordance with explosion protection legislation.

There are many categories of devices and types of protection. Our knowledge and experience in this area is crucial in order to build appropriate and, at the same time, affordable optimal equipment. Rationalisation and optimisation of investment procedures is one of the most important tasks of good engineering.

Ex vgradna fluorescenčna svetilka
/ Ex fluorescent light fitting



INDUSTRIJA / INDUSTRY

Rešitve na področju projektiranja in izvedbe zaščite pred nevarnostjo eksplozivnih in strupenih plinov, hlapov par

Gospodarski razvoj in razvoj novih tehnologij je vnesel v človeško okolje veliko nevarnosti. V današnjem času se kot energent uporabljata zemeljski ali naftni plin, v procesu proizvodnje pa imamo opravka s snovmi, ki so gorljive ali strupene.

Za zaščito pred nevarnostjo se uporabljajo sistemi za zaznavanje nevarnih plinov ali hlapov. Namenjeni so zaščititi ljudi in prostorov, v katerih se lahko pojavita dve vrsti nevarnosti – eksplozivne ali strupene koncentracije.

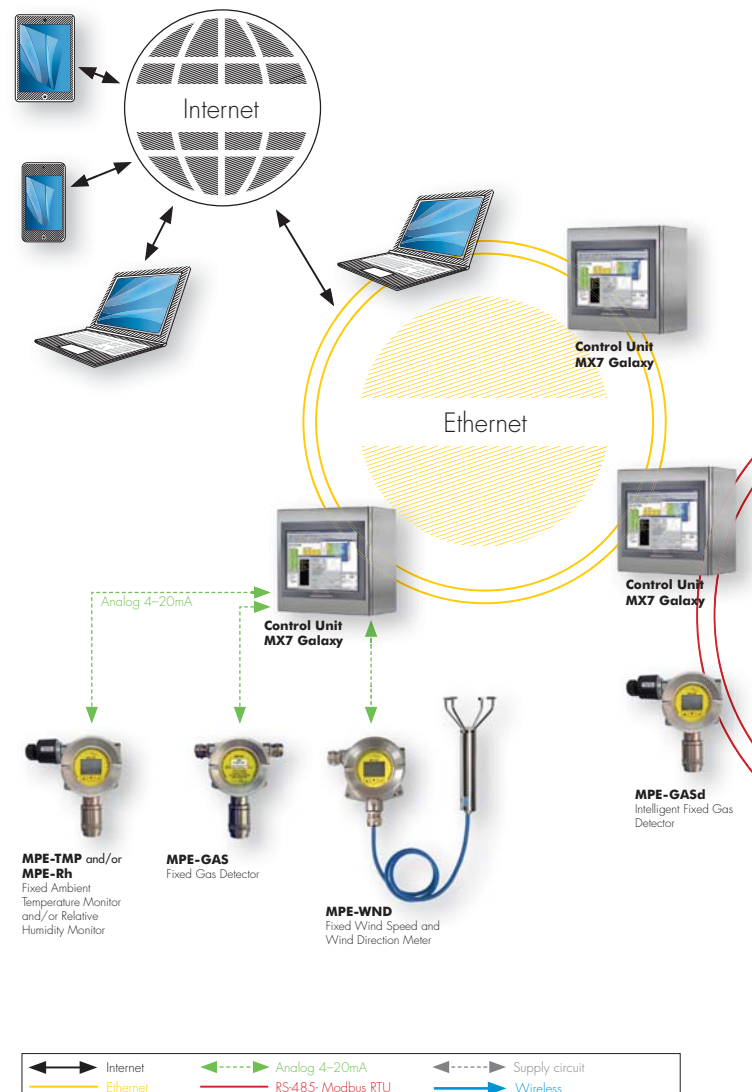
Sistem detekcije plina je namenjen neprekinjeni kontroli prisotnosti nevarnih plinov ali hlapov. Z namenom preprečitve dosega previsoke koncentracije v prostoru inteligentni sistem detekcije plinov opozori z zvočnim in svetlobnim opozorilom, obvestilo o povišani koncentraciji prenese na dežurno mesto, izključi vse naprave, ki so vzrok za povečano koncentracijo, vklopi prezračevalni sistem in podobno.

Pri postavitvi je pomembna prava izbira senzorjev in vgradnja mesta. Upoštevati moramo kemijsko fizikalne lastnosti snovi in arhitekturo prostorov ter zračenja.

Vgradnje sistemov se izvajajo v:

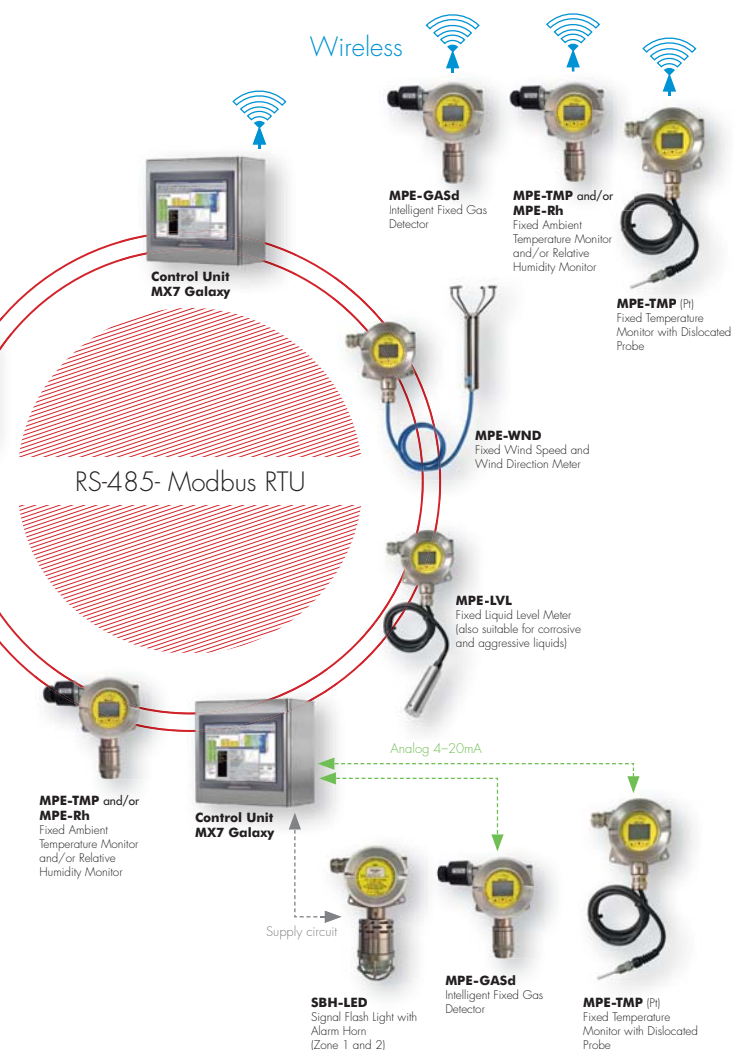
- kuhinjah,
- kotlovnica,
- podzemnih garažnih hišah,
- industriji v procesu proizvodnje, manipulacije in skladiščih.

Zagotavljanje zanesljive detekcije zagotovimo s strokovnim in rednim vzdrževanjem ter preizkušanjem sistemov.





GALAXY CONTROL SYSTEMS



Solutions in design and implementation of protection against the danger of explosive and toxic gases and vapours

The economic development and development of new technologies has brought a great deal of danger to the human environment. Today, natural or oil gas is used as an energy source, resulting in the need to handle flammable or toxic substances in the process of production.

For hazard protection, hazardous gas or vapour detection systems are used to protect people and places where two kinds of danger can occur – explosive or toxic concentrations. The gas detection system is designed to continuously monitor the presence of hazardous gases or vapours. In order to prevent excessive concentrations in the room, the **Intelligent Gas Detection System** uses an audible and light alert to issue a warning, sends a notification of the elevated concentration to the duty station, switches off all devices causing increased concentrations, and switches on the ventilation system and similar devices.

The right choice of sensors and installation sites are important upon placement. Chemical and physical properties of the substance and the architecture of the rooms and the ventilation must be taken into account.

Installation of systems is carried out in:

- kitchens
- boiler rooms
- underground garage houses
- industrial production, manipulation, and storage operations

Reliable detection is ensured by professional and regular maintenance and system testing.

INDUSTRIJA / INDUSTRY

Rešitve na področju projektiranja in izvedbe avtomatizacije in spremljanja procesov

Racionalizacija in optimizacija investicijskih postopkov je ena najpomembnejših nalog dobrega inženiringa. Zato Tevel sodeluje z naročniki v vseh fazah projektov, kar omogoča hitrejši razvoj in realizacijo ter obvladovanje projektov.

Naša prioriteta so objekti, ki imajo v procesih, manipulaciji ali skladiščenju gorljive pline, hlape pare ali gorljivi prah, ki pomenijo nevarnost za eksplozijo.

Vgradnje sistemov se izvajajo v:

- industriji nafte in plina,
- farmaciji,
- kemični industriji,
- energetiki,
- čistilnih napravah.

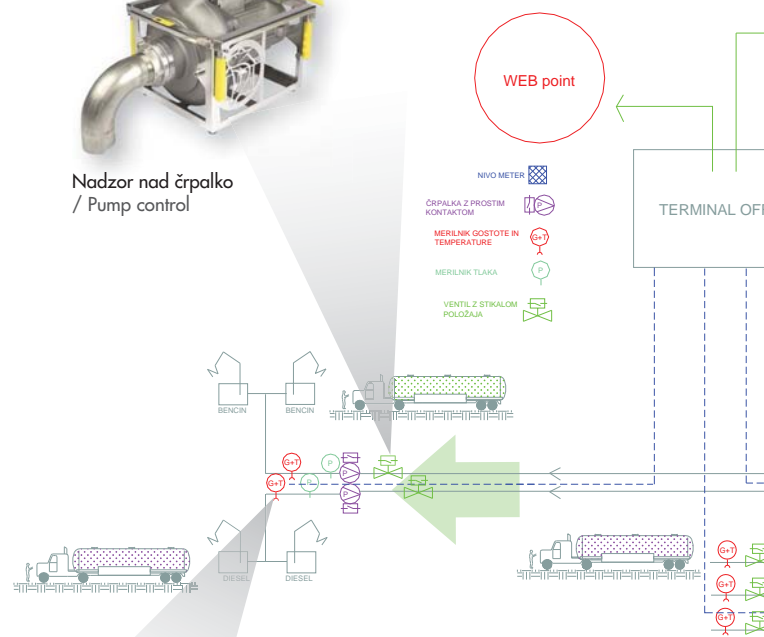
Ključna kriterija sta tehnološka ustreznost in zagotovljena varnost.

Izbrati je treba elemente glede na območja nevarnosti, katere opredeljujejo cone nevarnosti in fizikalno kemijske lastnosti nevarnih snovi. Prav tako morajo biti vgrajeni zaščitni elementi v skladu z zakonodajo o protieksplzijski zaščiti.

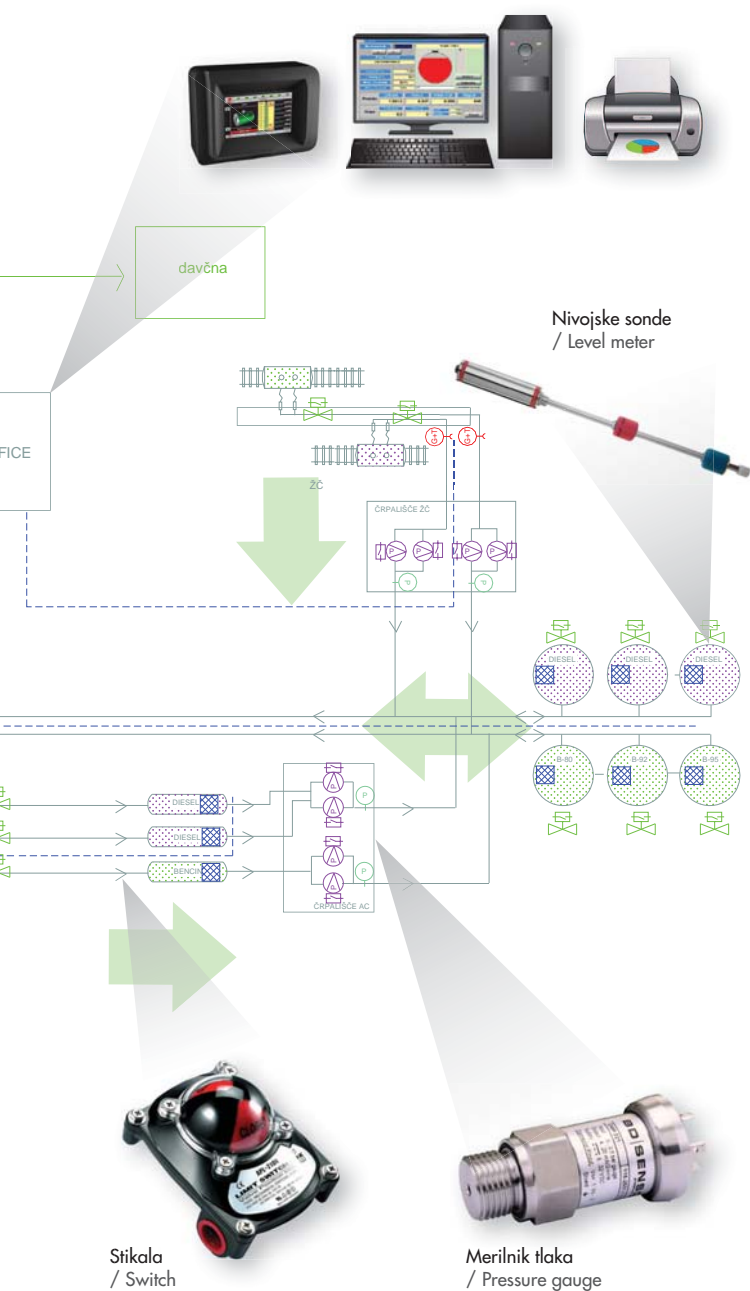
Izvajamo vse faze projektov, od izdelave projektne dokumentacije, gradnje, dobave in montaže opreme, zagona, testiranja in poskusnega obratovanja do šolanja naročnikovega osebja in spremljanja objekta v garancijski in po-garancijski dobi.



Nadzor nad črpalko
/ Pump control



Merilec gostote, viskoznosti, dielektričnosti in temperature
/ Density, viscosity, dielectric and temperature measurement



Solutions in design and implementation of automation and process monitoring

Rationalisation and optimisation of investment procedures is one of the most important tasks of good engineering. Therefore, Level cooperates with customers in all project stages, ensuring faster development, realisation, and management of the project.

Our priorities are facilities with combustible gases, vapours, or combustible dust in their processes that pose a risk of explosion.

Installation of systems is carried out in:

- oil and gas industry
- pharmacy
- chemical industry
- energetics
- treatment plants

Key criteria are technological relevance and assured security. Elements should be selected according to the danger areas, which define the danger zones and the physical and chemical properties of hazardous substances. Protective elements must also be installed in accordance with explosion protection legislation.

We carry out all phases of the projects, from preparation of project documentation, construction, delivery, and installation of equipment, start-up, testing, and trial operation, to training of the client's staff and monitoring of the facility throughout the warranty and guarantee period.

INDUSTRIJA HRANE IN PIJAČE / FOOD AND BEVERAGE

Detekcija plinov v tehnoloških procesih v pivovarnah

V pivovarskih tehnoloških procesih je treba detektirati naslednje vrste plinov:

- **Detekcija ogljikovega dioksida CO₂**
Ogljikov dioksid je poznan kot strupen plin, ki je težji od zraka, pojavlja pa se v procesu proizvodnje in pri polnjenju piva. V zaprtih objektih je potrebna kontrola na vsakem delovnem mestu in kompletni proizvodni liniji, meritev se spremlja v vrednostih % vol. Dovoljena koncentracija na delovnem mestu je lahko 0,5 % vol. v času trajanja 8 ur.
- **Detekcija amonijaka NH₃**
Amonijak je poznan kot strupen in tudi eksploziven plin, ki je lažji od zraka, pojavlja pa se pri procesu hlajenja. V zaprtih objektih je potrebna kontrola na vsakem delovnem mestu in kompletni proizvodni liniji, meritev se spremlja v vrednostih ppm. Dovoljena koncentracija na delovnem mestu je lahko 20 ppm v času trajanja 8 ur.
- **Detekcija klora Cl₂**
Klor je poznan kot strupen plin, ki je težji od zraka, pojavlja pa se v procesu dezinfekcije embalaže. V zaprtih objektih je potrebna kontrola na vsakem delovnem mestu in kompletni proizvodni liniji, meritev se spremlja v vrednostih ppm. Dovoljena koncentracija na delovnem mestu je lahko 0,5 ppm v času trajanja 8 ur.
- **Detekcija metana CH₄**
Metan – naravni plin je poznan kot eksploziven plin, ki je lažji od zraka, lahko se pojavi pri okvarah na grelnem sistemu. V zaprtih objektih je potrebna kontrola v vseh prostorih proizvodnega procesa, meritev pa se spremlja v vrednostih % DGE.

Detekcija plinov mora biti izdelana in montirana v skladu z veljavnimi standardi za pivovarne, vezane za detekcijo plinov in zaščito delavcev na delovnem mestu.



Alarmna centrala

Z displejem za kontrolo trenutnih in zgodovinskih vrednosti, analognimi in digitalnimi vhodi, relejnimi in napetostnimi izhodi, baterijskim 48 h rezervnim napajanjem z avtotestom
/ **The Alarm Switchboard**
With a display to keep track of current and historical values with analogue and digital inputs, relay and voltage outputs, and 48h battery backup with auto-test



Svetlobni in zvočni signal

Za signalizacijo sledečih stanj senzorja: napaka, alarm I. stopnje in alarm II. stopnje
/ **Light and Sound Signal**
To signal the following sensor status: error, alarm level 1, and alarm level 2



Solutions in the field of Gas detection in technological processes of breweries

The following detection systems should be installed in the technological processes of breweries:

- **Carbon dioxide CO₂ detection**

Carbon dioxide is known as a poisonous gas. It is heavier than natural air, and it occurs in the process of brewing and filling of beer. In indoor facilities, it should be controlled at every workplace and plant. The measurement is carried out in % vol. The permissible concentration at the workplace is 0.5% vol. in a time period of 8 hours.

- **Ammonia NH₃ detection**

Ammonia is known as a toxic and explosive gas. It is lighter than natural air, and it occurs in cooling systems. In indoor facilities, it should be controlled at every workplace and plant. The measurement is carried out in ppm. The permissible concentration at the workplace is 20ppm in a time period of 8 hours.

- **Chlorine Cl₂ detection**

Chlorine is known as a toxic gas, and it is heavier than natural air. It occurs in packaging disinfection systems. In indoor facilities, it should be controlled at every workplace and plant. The measurement is carried out in ppm. The permissible concentration at the workplace is 0.5ppm in a time period of 8 hours.

- **Methane CH₄ detection**

Methane -natural gas known as an explosive gas, lighter than natural air. It occurs in the heating system errors. In indoor facilities, it should be controlled at every plant. The measurement is carried out in % DGE.



Detektorji

Različnih plinov (npr. CO₂, NH₃, Cl₂, CH₄) v IP ali Ex zaščiti

/ Detectors

Different gas detectors (for example CO₂, NH₃, Cl₂, CH₄) in the IP or Ex protection

Gas detection should be installed and mounted in accordance with the existing gas detection standards in breweries and occupational safety standards of workers.

RUDARSTVO / MINING

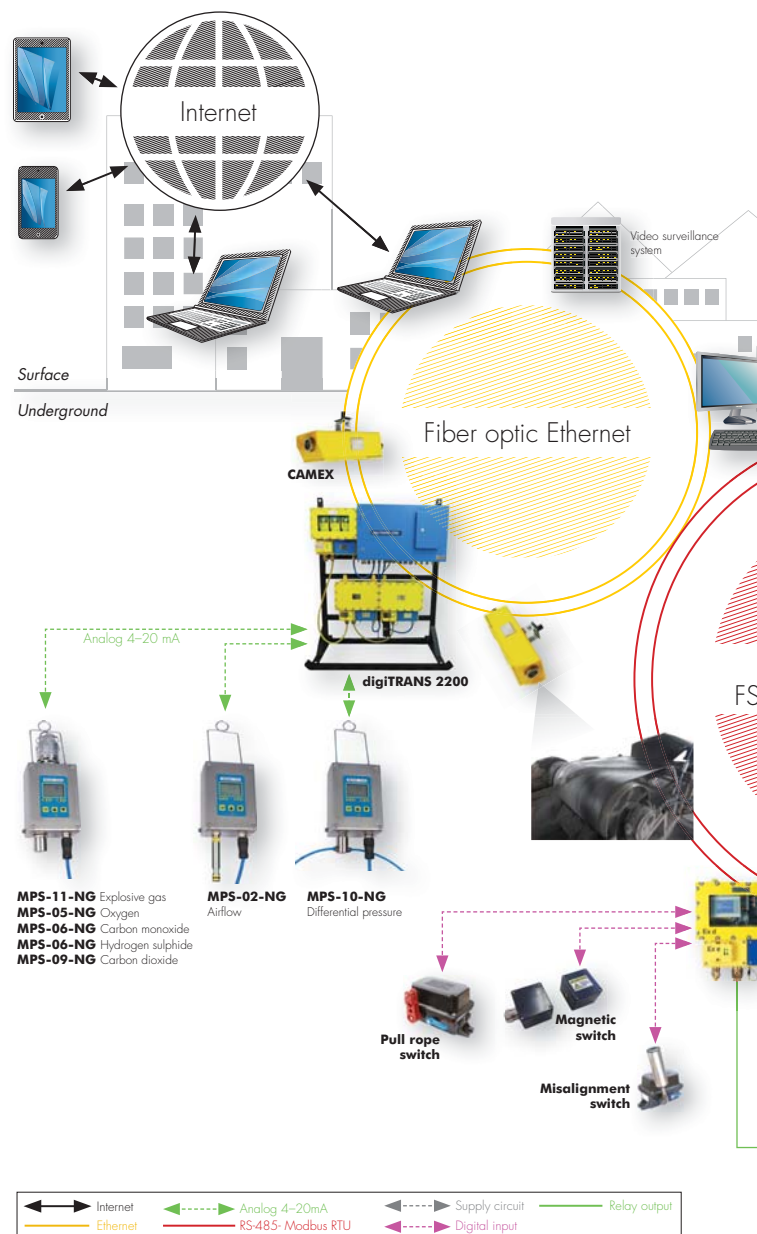
Rešitve na področju rudarstva

Delo rudarjev poteka v okolju s stalno nevarnostjo zaradi prisotnosti eksplozivnih in strupenih plinov in možnosti vdora podtalne vode. Zato so rudarske varnostne zahteve zelo stroge. Dobro razumevanje in poznavanje razmer v okolju, kjer naj bi projektirani sistem deloval, je ključnega pomena za uspešno realizacijo. Da bi se lahko učinkovito lotili dejanske izvedbe sistemov, je potrebno korak po korak razčleniti namen, pogoje in zahteve.

Naše storitve temeljijo na dolgoletnih izkušnjah, rednem usposabljanju in mnogih referencah na takšnih objektih.

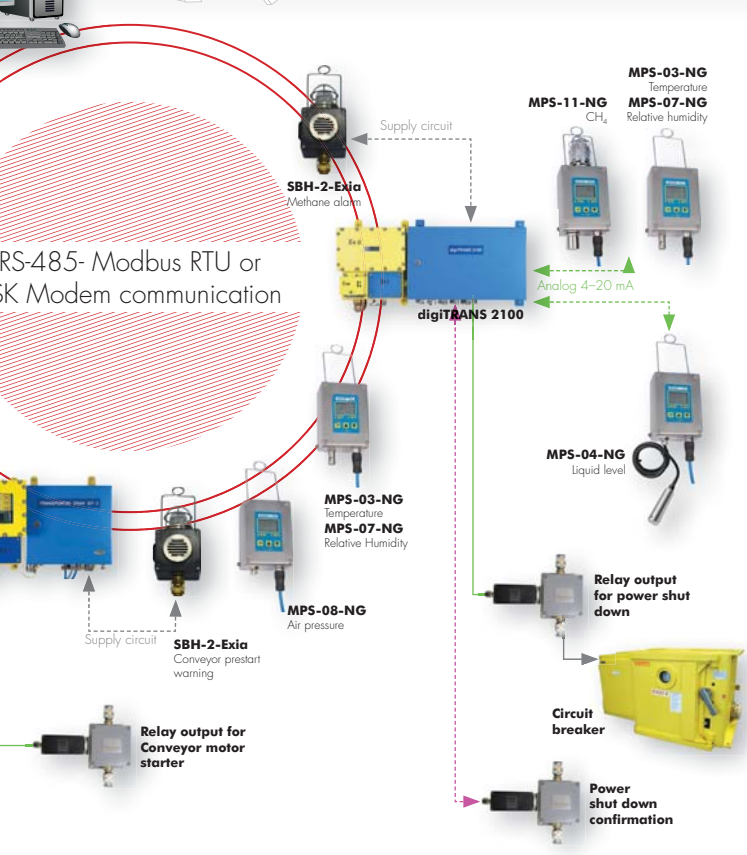
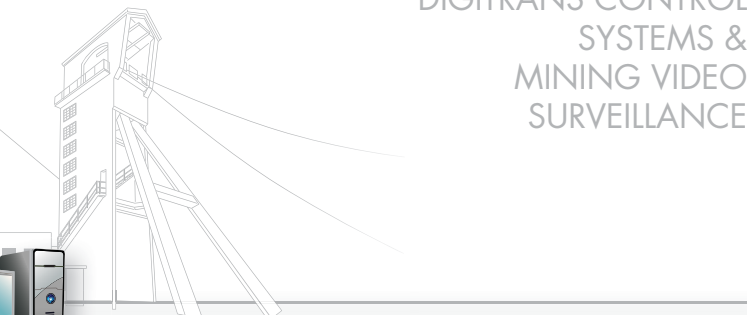
Izvedemo vam:

- projektiranja in izvedbo zaščite pred nevarnostjo eksplozivnih in strupenih plinov**
 Sistem preprečuje nastanek eksplozije zaradi metana in nastanek zastrupitve zaradi CO in CO₂, poveča varnost ljudi, preprečuje materialne škode in izpade proizvodnje.
- avtomatizacijo transportnih trakov**
 Sistem avtomatiziranih trakov pomeni večjo varnost in pretočnost materiala. Sistem s svojo logiko zagotavlja upravljanje, optimiziranje, nadzor in varnost procesa.
- video nadzor**
 Sistem omogoča prenos slike v nadzorni center iz točk, pomembnih za varnost in tekoče poslovanje.
- osebni varnostni nadzor – Personnel Tracking System**
 Sistem nadzoruje gibanje oseb in opreme v rudniku. Sledenje omogoča optimiziranje procesa in zagotavlja varno delovanje.





DIGITRANS CONTROL SYSTEMS & MINING VIDEO SURVEILLANCE



Solutions in the field of mining

Work of miners is carried out in an environment with a constant threat due to the presence of explosive and toxic gases, and the possibility of ingress of groundwater. Therefore, the mining safety requirements are very strict.

A good understanding and knowledge of the conditions in the environment in which the designed system should work is the key to successful realisation. In order to effectively address the actual implementation of systems, it is necessary to analyse the purpose, conditions, and requirements step-by-step.

Our services are based on many years of experience, regular training, and many references in such facilities.

We carry out the following services:

- design and implementation of protection against the risk of explosive and toxic gases**
 The system prevents explosions due to methane, CO and CO₂ poisoning, increases the safety of people, and prevents material damage and production outages.
- automation of conveyor belts**
 The system of automated belts means increased safety and throughput of material. With its logic, the system ensures the management, optimisation, control, and security of the process.
- video surveillance**
 The system enables the transfer of images to the control centre from points relevant for security and regular business operations.
- personnel tracking system**
 The system monitors the movement of people and equipment in the mine. Tracking enables optimisation of the process and ensures safe operation.

Reference / References:



Premogovnik Velenje, Rudnik mrkog uglja Zenica, Zenica, Rudnik mrkog uglja Kakanj, Rudnik mrkog uglja Breza, Rudnik mrkog uglja Banoviči, Rudnik mrkog uglja Đurđevik, Rudnik lignita Kreka – Tuzla, Rudnik Dobrnja – Lukavac, RTH – Rudnik Trbovlje Hrastnik, Paliolchem Tuzla, ATM Sarajevo, Keming Banoviči, Faser Poljska, ZAM SERVIS Češka, Multimarga Malezija, ISC Oldham Francija, NAFTAGAS – Rafinerija Pančevo, NAFTAGAS – Rafinerija Novi Sad, ENERGOINVEST, Rafinerija nafte Bosanski brod, Kemična industrija BELINKA Perkemija Ljubljana, Kemična industrija HELIOS Domžale, LEK d.d. Ljubljana, KRKA d.d. Novo mesto, SAVA Kranj, Termoelektrarna Čatiči, Termoelektrarna Nikola Tesla Obrenovac, Termoelektrarna Tuzla, Termoelektrarna Ugljevik, Slovenske železarne – Železarna Jesenice, Slovenske železarne – Železarna Štore, TKI Tovarna kemičnih izdelkov Hrastnik, TKI Srpence, NEK Nuklearna elektrarna Krško, Rudnik Zagorje v zapiranju, Plinarna Maribor, Libela ELSI, Pivovarna Laško, Komunala Trbovlje, ZC Mors Šentvid, Gumarna Maribor, TIM Laško, OMV Slovenija, Istrabenz plini, Zaklonski Lucija, Zaklonski STŠ Nova Gorica, Loka Vrhnika, ERICO Velenje, Gorenje gospodinjski aparati, Gorenje Tiki, Alusisse Tomos, Messer Slovenija, Žito Gorenjka, CČN Domžale, ETA grelci, Henkel Slovenija, Donit Tesnit Medvode, SŽ jeklo, Lesnina d.d., MIP d.d., Fotona, Iskraemeco, Tosama, Petrol d.d., Hotel Marko Portorož, TP Soča Koper, Juteks, Amba, Zdravilišče Laško, GKN Unior Atras, Mercator d.d., Tuš d.d., VVZ Sežana, Merkur d.d., HIT Nova Gorica, Celjski zapori, Kovinotehna MKI, TDR metalurgija, SPO Trbovlje, Hotel Kokra, Pizzerija Diavolo, Rudnik Kanižarica v zapiranju, Paloma d.d., Komunala Nova Gorica, KOP Zagorje, ETI d.d., Revoz Novo mesto, Gold Club, Kolpa Metlika, BSH Nazarje, Timex AH, Hotel Hum, Gostilna Muler, Primat, Gorenje Valjevo, XELLA Porobeton SI ...

NAŠA KVALITETA – VAŠA VARNOST
OUR QUALITY – YOUR SAFETY

TEVEL, d. o. o.

Borovniško naselje 7, 1412 Kisovec
Slovenia – Europe

Phone +386 3 5672050

Fax +386 3 5671119

Email info@tevel.si

www.tevel.si

TEVEL
30 YEARS