

EXPLOSION PROTECTION REINVENTED

EXpressure by R. STAHL

DO YOU REMEMBER: Ex technology until today?



FLAMEPROOF ENCLOSURE TODAY





PAIN POINTS OF ALUMINIUM ENCLOSURES

Corrosion caused by saltwater

Surface finishing

Maintenance

Combination of enclosures



STATUS QUO: 8250-COMBINATIONS



8250 drawing 8250 enclosure



EVEN MORE SOPHISTICATED VERSIONS AVAILABLE!

R. STAHL as the technology leader







WHAT ARE YOUR PAIN POINTS?

Many different enclosures – large footprint and potential high weight issues

High installation costs – especially offshore

High maintenance costs and processes

Corrosion caused by dissimilar metals



TODAYTODAY'S PRINCIPLE OF EX D PROTECTION

The dangerous explosion <u>can not</u> escape outside







OUR GOAL: TO SAFELY RELEASE HEATAND ENERGY!





CHOOSING THE RIGHT FUNCTIONAL MOUNTING

Stainless steel wire mesh





THE TECHNOLOGY

Inside of the enclosure		Outside of the enclosure	
Explosion	Through-flow of the grid	Discharge of the gas to the outside	Cooled explosion gas
	Reduction of temperature & pressure		



DEFINING CRITICAL PARAMETERS









8280 THE CUSTOMER VALUE PROPOSITION





8280 BENEFITS

- + Stainless steel material \rightarrow corrosion resistant
- + Freedom in design
- + Fast and easy engineering
- + Less maintenance \rightarrow higher production uptime



BE SAFE!







8280: OPTIMIZATION IN ALL ASPECTS

TYPE	DIMENSIONS	STATUS
8280/0-20-20	300x400x200	Certified
8280/0-31-20	400x600x300	Certified
8280/0-41-20	600x800x400	Certified
8280/0-62-20	1000x1400x700	Certified





ALL COMPONENTS IN ONE SINGLE CABINET



CABINET INTERIOR: CLEAR WIRING



IN-BUILD COMPONENTS



Opened bursting disc after an explosion occurred

Explosion detected via temperature sensor inside and reported via potential free

contact

IP66



ALUMINIUM EX D ENCLOSURES VS 8280





ENGINEERING





PAIN POINTS OF EX P ENCLOSURES



Maintenance

Compressed air

Waiting period caused by flushing



PAIN POINTS OF EX P ENCLOSURES



Transformation of Non-Ex/Exp in Ex

The same effort in engineering

Standard industrial layouts & components





INDUSTRIAL ENCLOSURE VS. 8280 ENCLOSURE





BENEFITS FOR OFFSHORE-PLATFORMS





YOUR ADVANTAGES

Economy and Safety

- Low life cycle costs (context)
- Solution price
- Lower procurement costs (Engineering)
- Operating Costs
- Significant lower Downtimes / Costs
- Expandability

High system availability due to improved system integration directly at the production process, offeres greater opportunities for monitoring and reporting / processmonitoring / controlling

EXPRESSURE

Advisory Service and Certification "product-supporting" R.STAHL Ex-Service"

- Construction modification
- Electrical control system extension
- Complement manufacturer documentation
- Declaration of Conformity
- Certification
- Conformity -Service



SALIENT BENEFITS OF EXPRESSURE





LESS ENGINEERING COSTS



COST-SAVING AND FASTER ENGINEERING

Known engineering landscape

- Minimal engineering efforts for non-Ex and Ex/ Plan for non-Ex cabinet can be used directly in Ex
- Existing non-Ex machine easily transferable to Ex
- Reduction of Ex development costs
- Easy integration of pre-developed kits
- Retrofit, upgradeability can be easily planned
- Design changes at short-notice (replace / supplement mounting plate)

What does that mean for you?

• Saves money, time & engineering efforts



LIGHTER, MORE COMPACT, SCALABLE



LIGHTER, MORE COMPACT, MORE COST-EFFECTIVE

Less weight

- Thin enclosure walls
- No additional mounting frame
- Easier installation
- Highly recommended for Offshore applications
- Reduced footprint
- Large cabinet saves enclosure combinations
- Removal of interfaces (mechanical and electrical)
- Better machine integration
- New machine / plant construction becomes possible
- Extension of the application of flameproof enclosure

What does that mean for you?

- Economy of space, lighter in weight, and highly scalable
- You save logistics cost
- You save installation cost
- The installation becomes easier and less manpower is needed
- Your machine will be more compact
- The functionality of your machine can be increased



LESS OPERATING COSTS

Planned and unplanned maintenance

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LIGHTER, MORE COMPACT, **MORE COST-EFFECTIVE**

- Planned and unplanned maintenance
- Quick opening and closing of the enclosure
- Large single cabinet with just one lid and few screws
- Better plant availability less production downtime
- Simple, clear arrangement as in industrial cabinets saves
 2-3 hours during troubleshooting
- · Easy and fast troubleshooting as in the non-Ex cabinet
- No waiting time (Ex p) before commissioning
- · Stainless steel enclosure with corrosion-proof joint

What does that mean for you?

- You reduce maintenance costs
- You significantly lower the downtime of your plant
- You increase the productivity of the plant
- You reduce the personnel costs when operating the plant
- You offer increased customer benefit for the operator and thus improve customer satisfaction
- You strengthen the reputation against your competition

FUTURE-PROOF AND FLEXIBLE RETROFITTING



FUTURE-PROOF AND FLEXIBLE RETROFITTING

Future expansion proof / retrofittable / upgradable

- Late changes / order changes during commissioning and SAT are easy to implement
- Scalable without replacing the existing solution
- Easy retrofitting of cable entries (Ex d flange plates)
- Supplement the pre-installed equipment
- Long-term availability of spare

What does that mean for you?

- Convience in upgrading & future proof technology for your plant
- You lower your commissioning costs
- You can easily offer your customer late changes





THE EXpressure PORTFOLIO

8280 enclosure variants

Variant	Dimensions
Size 20	300 x 400 x 200 mm
Size 31	400 x 600 x 300 mm
Size 41	600 x 800 x 400 mm
Size 62	1000 x 1400 x 700 mm







DAS EXpressure - PORTFOLIO

8280 Inspection Windows

• Order optional (depending on customer order)

Dimensions of windows, (length L x width B x thickness H) mm	Cut-out dimension (length D x width E) mm	Cut-out area cm²
180 x 94 x 19	150 x 63	95
180 x 134 x 19	150 x 104	156
274 x 179 x 19	245 x 149	365
340 x 240 x 19	310 x 210	651
358 x 274 x 19	328 x 244	800
570 x 260 x 25	540 x 230	1242



EVERYTHING ELSE REMAINS UNCHANGED



Ex e CONNECTION CHAMBER



ACTUATING ELEMENT



INSPECTION WINDOW



CONTROL LAMP



HINGE



CABLE GLAND





R. STAHL: YOUR SOLUTION PROVIDER

For every challenge the right type of protection





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