DAM TECH
Gas Monitoring & Services

Gas detectors
ALPA ΣSmArt
ALPA SmArtGas-3

ALPA Σ SmArt / ALPA SmArtGas-3 are gas detecting and monitoring devices.
Its construction, based on microprocessor technology, allows to offer high technical parameters at a competitive prices.
High precision and reliability makes **ALPA Σ SmArt / ALPA SmArtGas-3 detectors** a perfect solution for all demanding, professional industrial applications (i.e. in chemical plants, food ind., breweries, refineries, cold stores, paint shops, sewage treatment, petrochemical, power plants, etc.)

FEATURES:
Status visualization
Device status might be locally visualized by:

- LED diodes and / or

- LCD display unit

Extended working temperature range
While developing the detector, an attention was paid to assure an appropriate operating temperature range. Presently it is possible to install the detectors in locations where an ambient temperature can vary from -40ºC up to +50 / 80 or even +115ºC (in HR / ExLEL version). Upper value is predominantly limited by the sensor performance.

Modular construction
The detector has a modular construction. It consists of a converter (ALPA CNV) and a measuring head (ALPA ALHEAD-3).

In "HL" options the Converter and the Head are put together

In "HR" options the Head is remote from the Converter. It allows for gas detection in difficult locations, but, at the same time, having the converter placed conveniently.

Non-invasive calibration and configuration
In RS-485 version the detector might be:
• calibrated
• parameterized (i.e. values of alarm thresholds)
- in Ex zones, without opening detector's enclosure or
pertaining with the other part of the System.

Output signals
A user is free to choose one of the following output signals:

• analog - 4..20mA

• digital - RS-485

• contact relays (floating)
In the extended versions it is possible to simultaneously use any
two of the above mentioned signals.

Microprocessor-based construction allows us to offer high
operating parameters. ALPA SmArtGas-3 Gas Detector allows
for:

• linearization of measured signal,

• compensating the influence of the ambient temperature,

• switching the detector between different pre-defined
operating modes (i.e. "warm-up" / "run" / "calibration" /
"test"),

• checking the device diagnostics status,

• storing and managing access to application-specific data,
like name of the target gas, alarm levels, serial number
etc.
Autodiagnostics
A device has a wide range of auto-diagnostics features.
The most important are:

• processor or memory faults,

• sensor conditioning,

• sensor overloads (concentration, temperature),

• time to calibration expiration

Reliability - no electro-mechanical settings
All the settings are stored in non-volatile memory.
No potentiometers, switches, etc similar parts were
implemented. This greatly increases device reliability and long term
stability.
ALPA Σ SmArt / ALPA SmArtGas
There is a small difference between these two basic models:
• ALPA SmArtGas is a "general purpose" device,
with typical outputs (4..20 / Modbus, Relays) to be
integrated with any industrial automation equipment,
• **ALPA Σ SmArt is a** device with RS-485 " ΣBUS"
output protocol. It is to be integrated with other
ΣBUS System devices.

TARGET GASES:
Range: Examples
Flammable gases: 100%LEL i.e.: methane, propane, butane, ammonia, carbon monoxide
Flammable vapors: 100%LEL alcohols (i.e..: methanol, ethanol, propanol)
solvents (i.e..: acetone)
fuels (np.: naphtha, light gasoline)
hydrocarbons (pentane, hexane, heptane, cyclopentane)
Toxic gases: depends on the
sensor used
i.e.: carbon monoxide, hydrogen sulfide, ammonia, phosgene, ozone, nitrogen
oxides, carbon dioxide

TECHNICAL DATA - „HL" type (measuring head mounted directly into converter):
FTZU 08 ATEX 0005X
CE 1026 II 2G
II 2G Ex d IIC T5 - T6
Temp. class Ambient temperature
T6 -40 < Ta < 70 ₒC
T5 -40 < Ta < 85 ₒC
Power supply: 10.5 ... 28V P < 3W,
Converters casing material: EAL: epoxy- covered aluminium alloy
ESS: stainless steel: 1.4401 1.4301 1.4541
Measuring head material: 1.4404 / SS-316L
Operating temperature might be reduced due to applied sensor performance.
I.e. in all "ToxSurvey" applications (electrochemical sensors) max ambient temperature must not exceed 50ₒC.
For detailed specification please contact the Manufacturer/
IP Protection
Index of protection Device position Exploitation conditions
IP - 43 vertical, sinter down basic IP guaranteed
IP - 5x all positions possible when the device is periodically inspected against being blocked by dust
or dirt
IP – y5 vertical possible when an appropriate water-splash shield or "weather-house" is applied
IP – y2 horizontal not recommended
x = (3,4,5), y = (4,5)

Marking / Ordering:

ALPA Σ SmArt (SSG) -M -D -H -E -T

In Σ SmArt a ΣBUS output is the only option. For other outputs see ALPA SmArtGas.
M – Type of electronics module
TS – ToxSurvey – electrochemical sensor
TSF – ToxSurvey for COCl2 (phosgene) – electrochemical sensor
EL – ExLEL – catalytic sensor
VOC – HVOC – hot wire sensor
DET – semiconductor sensor (not recommended)
IR – Infrared sensor
PID – photo-ionization sensor
SCV – current or voltage input signal converter into the „ΣBUS" Output
D – window for display
0 – without the window – standard
1 – with window – LED display
2 – with window – LCD display
H – sensing head - local or remote
L – local (integrated) head – standard
R1 – remote, connection through bushing SCG-3 +AHP-3
R2 – remote, connection through cable gland
RT1 – remote, connection through bushing SCG-3 +AHP-3, elevated temperature range to 125°C
RT2 – remote, connection through cable gland, elevated temperature range to 125°C
E – enclosure
ALB – epoxy- covered aluminium alloy - white color of the painting -standard
ALZ – epoxy- covered aluminium alloy - yellow color of the painting -standard
SS – made of stainless steel
T – temperature
0 – standard
T – elevated temperature range to 85°C – for gas detector
The cable gland and the type of sensor are individual select during preparing the offer.

ALPA SmArt Gas-3 (SG) -M -D -H -E -T -O -X
M – Type of electronics module
TS – ToxSurvey – electrochemical sensor
TSF – ToxSurvey for COCl2 (phosgene) – electrochemical sensor
EL – ExLEL – catalytic sensor
ELm - ExLEL mini – catalytic sensor
VOC – HVOC – hot wire sensor
DET – semiconductor sensor (not recommended)
IR – Infrared sensor
PID – photo-ionization sensor
SCV – current signal converter 4..20mA or voltage of sensor
D – window for display
0 – without the window – standard
1 – with window – LED display
2 – with window – LCD display
H – sensing head - local or remote
L – local (integrated) head – standard
R1 – remote, connection through bushing SCG-3 +AHP-3
R2 – remote, connection through cable gland
RT1 – remote, connection through bushing SCG-3 +AHP-3, elevated temperature range to 125°C
RT2 – remote, connection through cable gland, elevated temperature range to 125°C
E – enclosure
ALB – epoxy- covered aluminium alloy - white color of the painting -standard
ALZ – epoxy- covered aluminium alloy - yellow color of the painting -standard
SS – made of stainless steel
T – temperature
0 – standard
T – elevated temperature range to 85°C – for gas detector
O – basic out signal
A – 4..20mA
D – RS-485
X – extra module – *not recommended, add the extra module we remove EMC filter module – option only for tel.*
0 – *without extra module*
AH – extra module without signal RS485/4..20 Rob=500Ohm (only if the basic out signal is RS-485)
AL – extra module without signal RS485/4..20 Rob=200Ohm (only if the basic out signal is RS-485)
PK – extra module out relay
The cable gland and the type of sensor are individual select during preparing the offer.