

- ✂ Complete vehicle gas monitoring and shutdown solution
- ✂ Bar graph gas level indication
- ✂ End user replaceable battery
- ✂ Bar graph battery condition indication
- ✂ IECEx certification



DESCRIPTION

The Austdac vehicle gas monitoring and shutdown system type NGVG3 provides a compact self contained solution for gas monitoring and shutdown of diesel powered vehicles in underground coalmines.

The NGVG3 operates from an internal rechargeable battery and provides all power for the system including the gas sensor and pneumatic solenoid engine shutdown valve. The internal battery is charged from the existing host vehicle alternator.

The gas level reading is provided in the form of a LED colour bar graph. This bar graph indicates low-level gas concentrations with green, indicating the driver may proceed. The bar graph changes to yellow to indicate warning levels have been exceeded and finally red to indicate dangerous gas level concentrations and vehicle shutdown.

A second bar graph is provided to indicate the internal battery condition, green indicating plenty of battery capacity, yellow indicating low battery capacity and a need to charge the battery and finally red indicating insufficient battery capacity to support the gas monitoring system.

Further LED indicators provide information on system status, alternator power, battery charging and 'OK to start'.

When the vehicle is parked and unused the NGVG3 system enters sleep mode to conserve battery power.

Battery life can exceed 30 days when the system is in sleep mode. Where vehicles are unused for longer periods, The NGVG3 design allows the user to change out flat batteries. A separate mains operated battery charger is available to keep spare batteries charged.

The NGVG3 can be put into operational mode after being in sleep mode by simply pressing the front panel located 'power reset' button. The NGVG3 will allow the gas sensor to warm up before taking readings, once stable readings are available the solenoid operated engine shutdown valve will be energized to allow the engine to be started.

The solenoid operated engine shutdown valve is typically connected within the host engine pneumatic emergency shutdown system.

The NGVG3 can be operated from nominal 12 and 24-volt alternators, allowing convenient interchange between all vehicles with the fleet.

The NGVG3 can provide a switched power output to power a warning strobe whenever the vehicle engine is operating.

CERTIFICATION

The vehicle gas monitoring system type NGVG3 is IECEx certified for use in group I hazardous areas under certificate:

IECEx TSA 14.0040X Ex mb [ia Ma] I Mb (Alternator on) and Ex ia I Ma (Alternator off).



SPECIFICATION

GENERAL

Name	Diesel vehicle gas monitoring system
Type	NGVG3
Operating temperature range	-20°C to +40°C
Supply voltage range (alternator)	10 – 26Vdc unregulated
Supply current (alternator)	1.5A maximum
Gas sensor power output	12Vdc nom @ 150mA max
Strobe power output	5.5Vdc nom @ 100mA max
Solenoid power output	18Vdc nom @ 120mA max
Enclosure material	304 stainless steel
Size	290mm(W) x 132mm(H) x 200mm(D)
Mounting hole centres	272mm x 100mm
Mass	8.5kg
Ingress protection	IP65

POWER ALTERNATOR

(Integral Type 2S 2 Core Cable 10m)

Um	60V
Un	10Vdc – 26Vdc

SOLENOID OUTPUT PORT

(2 WAY PLUG: PINS A – B)

Uo	20.5V
Io	0.60A
Po	3.07W
Co	2uF
Lo	20uH
Lo/Ro	100uH/Ω

DEPUTY KEY PORT (3 WAY PLUG: PINS A – B)

Uo	5.88Vdc
Io	6mA
Co	12uF
Lo	20uH
Lo/Ro	100uH/Ω
Ui	12.6V

STROBE OUTPUT PORT (3 WAY PLUG: PINS C – B)

Uo	7.2Vdc
Io	1.35A
Co	12uF
Lo	20uH
Lo/Ro	100uH/Ω

SENSOR INPUT PORT (4 WAY PLUG: PINS A/B TO 0V)

Uo	11.76Vdc
Io	79.2mA
Co	11.7uF
Lo	20uH
Lo/Ro	100uH/Ω
Ui	14Vdc

SENSOR INPUT PORT (4 WAY PLUG: PINS A - B)

Uo	5.88Vdc
Io	20mA
Co	11.7uF
Lo	20uH
Lo/Ro	100uH/Ω
Ui	14Vdc

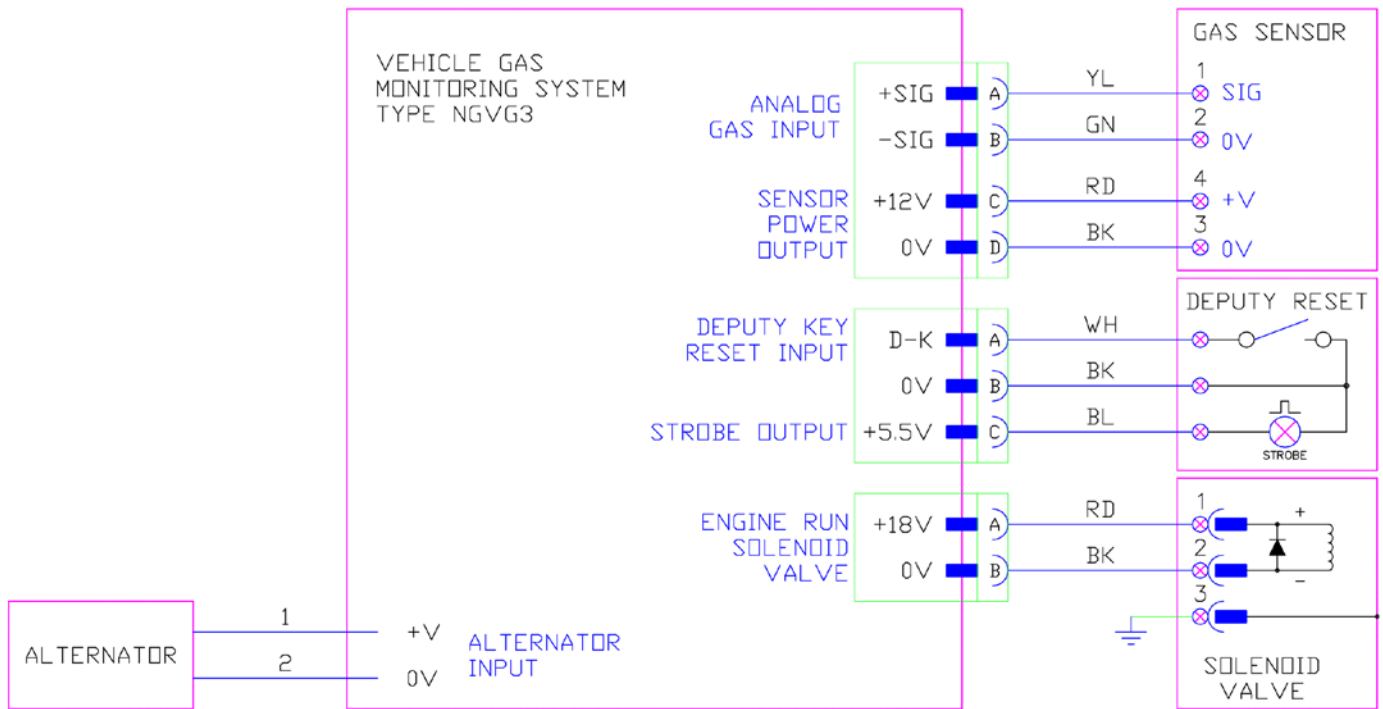
SENSOR POWER PORT (4 WAY PLUG: PINS C – D)

Uo	14.0Vdc
Io	1.57A
Co	3uF
Lo	20uH
Lo/Ro	71uH/Ω

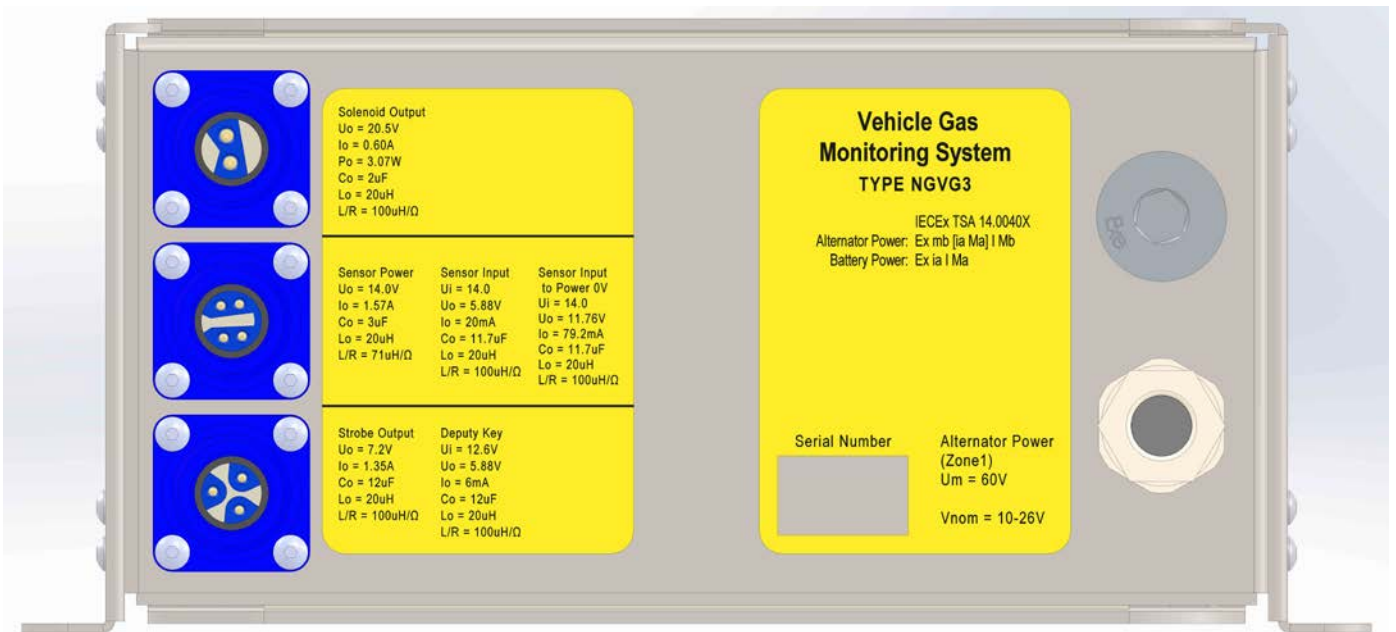




CONNECTION DIAGRAM



CONNECTOR – PIN DIAGRAM





DIMENSIONS

*measurements in millimeters

ORDERING DETAILS

DESCRIPTION	ORDER CODE
Standard Products	
VEHICLE GAS SYSTEM CONTROLLER TYPE NGVG3 - CURRENT	VEHICLEGAS-NGVG3-1
VEHICLE GAS SYSTEM CONTROLLER TYPE NGVG3 - VOLTAGE	VEHICLEGAS-NGVG3-2
SOLENOID C/W EXHAUST VALVE KIT	VEHICLEGAS03
KEY RESET C/W ENCLOSURE	VEHICLEGAS04
Inline Cables:	
NGVG3 SOLENOID CABLE KIT WITH 2 PIN SKT	VEHICLEGAS10
NGVG3 SENSOR CABLE KIT WITH INLINE 4 PIN SKT	VEHICLEGAS11A
NGVG3 PTO & KEY RESET CABLE KIT WITH INLINE 3 PIN SKT	VEHICLEGAS12A
Right Angle Cables:	
NGVG3 SOLENOID CABLE KIT WITH R/ANGLE 2 PIN SKT	VEHICLEGAS10A
NGVG3 SENSOR CABLE KIT WITH R/ANGLE 4 PIN SKT	VEHICLEGAS11B
NGVG3 PTO & KEY RESET CABLE KIT WITH R/ANGLE 3 PIN SKT	VEHICLEGAS12B
Option of Gas Sensor	
CH4 MKII 0.4-2V 0-5%TRANSMITTER/SENSOR	TX6383.BA
CH4 MKII 4-20MA 0-5%TRANSMITTER/SENSOR	TX6383.BE
CH4 BRASS SENSOR/TX 0.4/2V 0-5% 8.5 MTR	TX6383.CA
CH4 BRASS SENSOR/TX 4-20MA 0-5% 8.5 MTR	TX6383.CE
Optional Extras (if required)	
BATTERY TYPE 4/NMH/4-NGVG3	BATT036
CABLE KIT LEMO 4 PIN SKT(P5476.30.PD650)	CABL17F
CABLE KIT 4 PIN LEMO PLG(P5476.30.PD650)	CABL17G
STROBE - RED 6V	STROB24A
STROBE - YELLOW 6V	STROB24B
STROBE - WHITE 6V	STROB24C
STROBE - GREEN 6V	STROB24D
STROBE - BLUE 6V	STROB24E



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