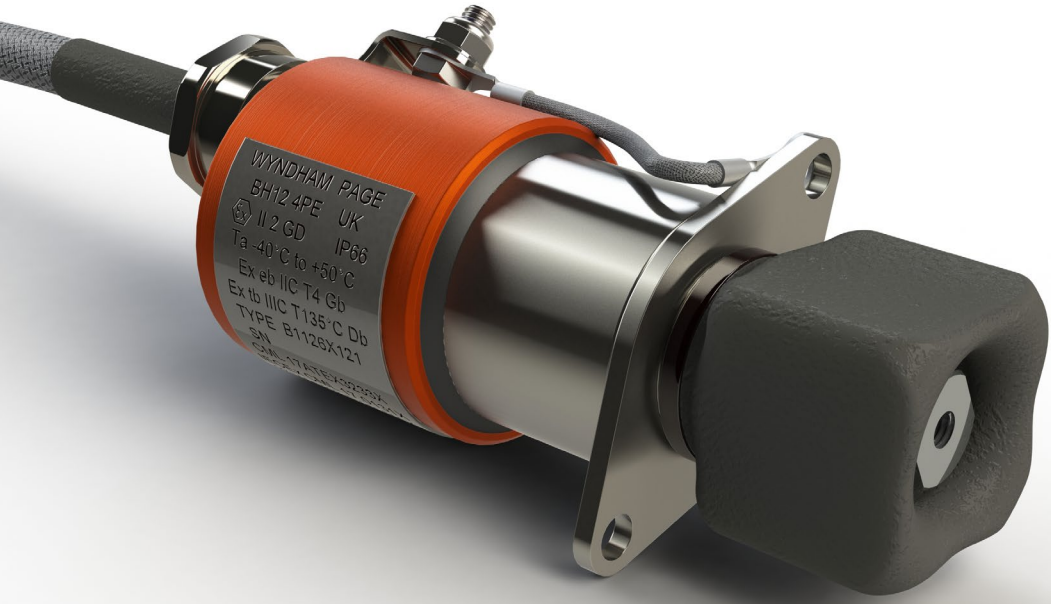
Hazardous Area Solenoids

A Range of ATEX / UKEX / IECEx Certified Solenoids

For automotive engine bay applications

ATEX & UKEX Certified



wyndham page

About Wyndham Page Ltd

Based in the UK Wyndham Page specialise in the design and manufacture of safety equipment for diesel engines.

Our product range of Air Intake Shutdown Valves includes our E Series Automatic Valves and our F Series Butterfly Valves with solenoid, pneumatic or manual actuation options. We offer Speedswitch kits for the F Series valves, a range of G Series Mechanical Engine Safety Products and a range of Spark Arresters designed to prevent the emission of high energy sparks from diesel exhaust systems.

Wyndham Page is headed by Freddy Page-Roberts who brings over 20 years' experience in the diesel safety industry and was previously managing director of Chalwyn Ltd.

All members of the senior management team have considerable experience in organisations specialising in the design and manufacture of hazardous area equipment for diesel engines.

Quality Assurance

Wyndham Page Valves are manufactured and tested under our EN ISO 9001: 2015 quality management system.

Wyndham Page Ltd are certified to supply Ex equipment under Quality Assurance Notification CML ATEXQ11003 in the UK, CML ATEXQ13649 in the EU and IECEx Quality Assurance Report GB/CML/QAR17.0023/01.

- Equipment supplied with an UK Declaration/Assertation of Conformity is CA marked and meets the provision of the UK directive SI 2016No. 1107
- Equipment supplied with an EU Declaration/Assertation of Conformity is CE marked and meets the provision of the ATEX directive 2014/34/EU.

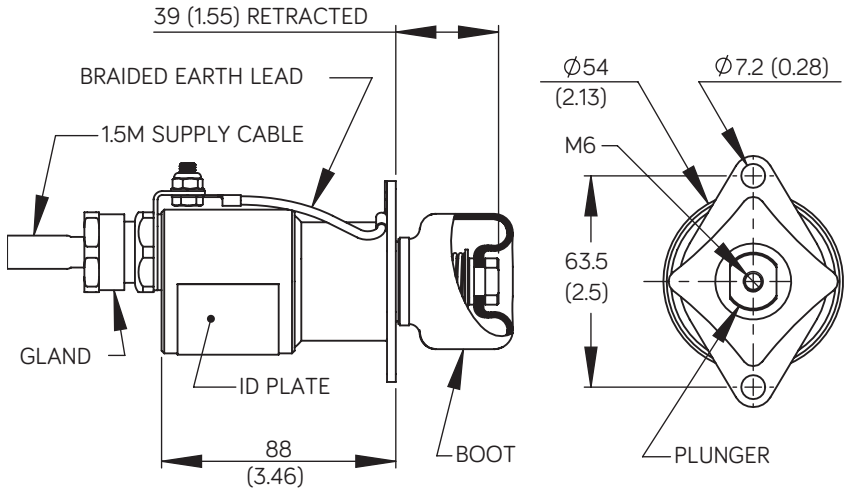
Hazardous Area Solenoids: Application

Wyndham Page ATEX / UKEX / IECEx certified solenoids are designed specifically for engine bay applications including the operation of an air intake shutdown valve or fuel pump stop lever. **Particular attention must be paid to the operating instructions with regard to the time limits for energising the pull coil and the maximum permitted ambient temperature.**

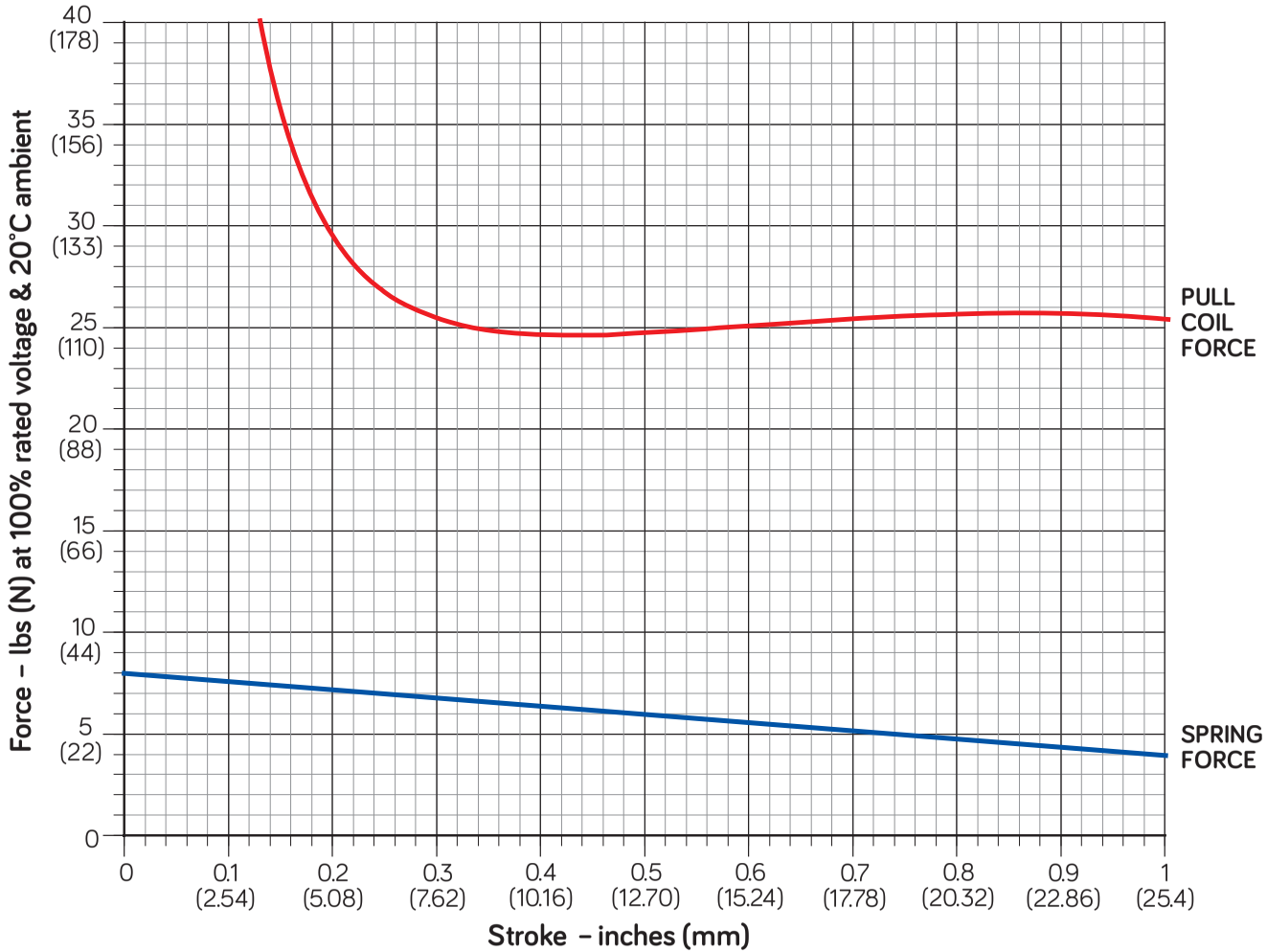
Important Note: This handbook does not give guidance for any specific application of the solenoid. It is the responsibility of the installer and end user to ensure that the solenoid is suitable for the application and is installed and operated in a safe manner.

Description & Main Dimensions:

The solenoids are of duel coil construction and are available in 12VDc and 24VDc versions. They are supplied with a spring and constant volume rubber boot. The hold coil is continuously rated, **the pull coil is intermittently rated must be energised only as specified in the operating instructions.** The main dimensions and features are shown below. The pull coil & spring forces are shown in the graph on page 4. The available pull-in force is calculated by subtracting the spring force from the pull coil force at the selected plunger stroke, derated as necessary to allow for voltage drop and ambient temperature increase.

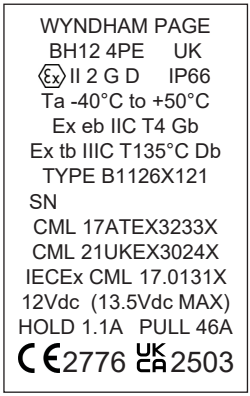


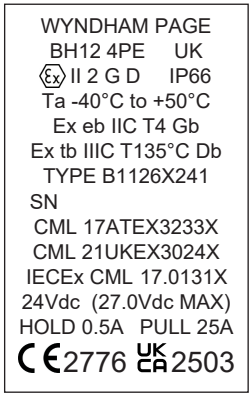
DIMENSIONS IN MM (INCHES)


Force – lbs (N) at 100% rated voltage & 20°C ambient
40 (178)
35 (156)
30 (133)
25 (110)
20 (88)
15 (66)
10 (44)
5 (22)
0
0
0.1 (2.54)
0.2 (5.08)
0.3 (7.62)
0.4 (10.16)
0.5 (12.70)
0.6 (15.24)
0.7 (17.78)
0.8 (20.32)
0.9 (22.86)
1 (25.4)
Stroke – inches (mm)
PULL COIL FORCE
SPRING FORCE

ATEX / UKEX / IECEx Certification and Marking

The solenoids are approved for operation in T4, Zone 1, Gas Group IIC and Zone 21, Conductive Dust Group IIIC hazardous areas and marked as shown below:





Hazardous Area Solenoids: Selection

To enable Wyndham Page to select the most suitable solenoid for a given application the following data is required:

- System Voltage: 12 VDc or 24 VDc

Order Coding

B1126X - XXX - S00

Special features code: S00 = standard build

Voltage: 121 = 12VDc, 241 = 24VDc

Special Features:
By arrangement with Wyndham Page.

Installation and Operation of B1126X Solenoid Unit

The B1126X solenoid is ATEX / UKEX / IECEx certified and marked as shown on page 5 according to the voltage selected.

- The solenoid should be connected as shown in the schematic on page 8.
- The braided earth bonding cable must be connected at the solenoid flange when mounting the solenoid. The solenoid may be earthed using the cable gland earth tag. The braided earth bonding cable must be reconnected to the earth tag when connecting an earth cable.
- The outer braiding of the supply cable MUST be earthed at the supply end.
- The length of the supply cable should not be increased from that supplied.
- A suitable cable gland must be used at the supply end of the cable.
- The supply cable must be adequately secured along its length to avoid excessive mechanical stress at the connection to the solenoid or any other physical damage under all normal operating conditions and during equipment servicing.

It is recommended that a manual switch for emergency stop is **always** incorporated into the shutdown control circuit to switch off the electrical signal to the solenoid. This manual switch should be a type that requires reset to the run status after operation.

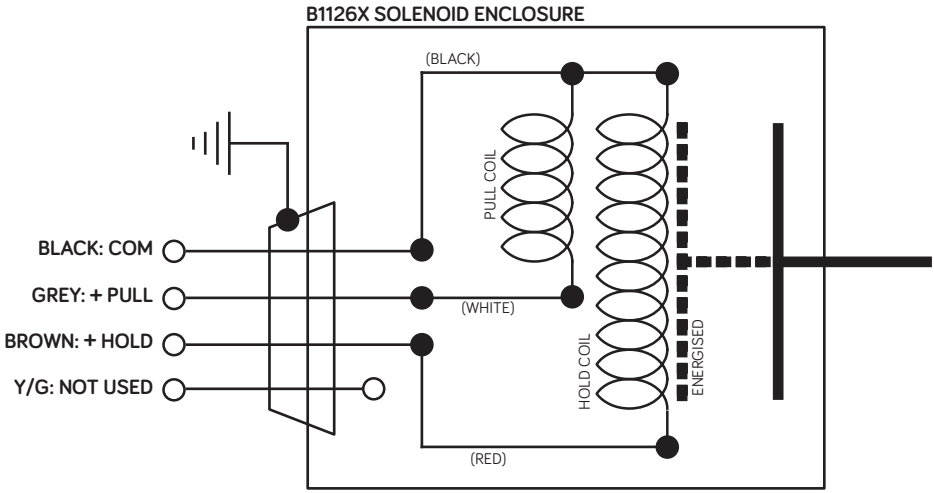
Important installation notes.

- The solenoid must be installed so that it is not exposed to temperatures outside of those shown in the specification table.
- The design of the electrical system must take into account the limitations applicable in terms of applying power to the solenoid pull coil as shown in the specification table. A suitable timer circuit should be fitted to achieve this. The starting instructions should clearly state that the key switch should not be returned to the solenoid de-energised position between starting attempts. If this requirement cannot be complied with, or the engine is an unattended unit with auto start, then the control system must be designed to restrict the number of times the pull coil is energised to that shown in the specification table.
- The control system must include a backup safety device such as a thermal overcurrent circuit breaker which will de-energise the pull coil if it is energised for more than 8 seconds continuously due to a fault in the control system.
- Epoxy adhesive and an elastomeric cable gland sealing ring are used in the construction of these solenoids. The performance of these materials with respect to chemicals that may be present in the hazardous area shall be taken into account when installing and using the product.

General and Electrical Specification Table

CRITICAL OPERATING PARAMETERS AND CERTIFICATION DETAILS	
Ambient Temperatures	Max: +50°C
	Min: -40°C
Solenoid Ratings	12Vdc: Max 13.5Vdc, Pull Coil 46A, Hold Coil 1.1A
	24Vdc: Max 27.0Vdc, Pull Coil 25A, Hold Coil 0.5A
Pull coil on time	1 second max / maximum 5 cycles per 30 minutes max followed by cool down to ambient.
Fault Protection	Pull coil to be de-energised after 8 seconds in fault situation.
Special conditions for safe use	i. The Pull and Hold Coils of the 12V solenoid shall not be supplied at more than 13.5Vdc. The Pull and Hold coils of the 24V solenoid shall not be supplied at more than 27.0Vdc. ii. The Pull Coil shall not be operated for more than 5 seconds every 30 minutes. iii. The maximum on time of the Pull Coil in fault conditions must not exceed 8 seconds followed by a cool down to ambient.
Standards used for compliance	EN 60079-0:2012 +A11:2013, EN 60079-7:2015, EN 60079-31:2014 IEC 60079-0:2011 Ed 6.0, IEC 60079-7:2015 Ed 5.0, IEC 60079-31:2013 Ed 2.0
GENERAL SPECIFICATION	
Materials	Body: Zinc plated steel, brass liner Plunger: Hard chrome plated steel Cap: Anodized aluminium Gland: Nickel plated brass Boot: Silicone Rubber
Cable	4 core SIHF multicore silicone armoured cable - 2.5mm2. 1.5M standard length
Forces at rated voltage & 20°C	Hold Rating: 182N (41lb) Pull Rating: 111N (25lb) at 25.4mm stroke

Electrical Connection Schematic



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