

5. Abbreviations

BS	A British Standard.
BS EN	A European standard adopted in the UK.
EN	A European Standard.
ISO	International Standards Organisation.
AISI	American Iron & Steel Institute.
ASME	American Society of Mechanical Engineers.
ANSI	American National standards Institute.
ASTM	American Society for Testing of Materials.
UNF	Unified National Fine (thread).
NPT	(American) National Pipe Thread.
BSP	British Standard Pipe Thread.
CRISP	Comprehensive RNSTS Inventory Systems Project.(MoD Navy supply and Procurement System).
MoD	Ministry of Defence.
TPI	Threads per Inch.
PED	Pressure Equipment Directive.
JSP	Joint Services Publication.

6. Performance Specification

6.1 The gauge(s) shall be fit for the purpose.

6.2 Pressure Gauges shall conform to either BS EN 837-1:1998 Pressure gauges Part 1. Bourdon tube pressure gauges. Dimensions, metrology, requirements and testing, or BS EN 837-3 (depending on type) except as otherwise stated in this specification. Construction and Materials of Construction shall be as specified on the Crisp "ENQ09B" "Item of supply Description" as designated and interpreted by section 7 of this specification. In some circumstances this information may also be contained in an enabling arrangement.

6.3 The following exceptions/specifications/additions shall apply in order to allow for legacy equipments.

6.3.1 The nominal size may be from BS EN 837-1 or BS EN 837-3 or the superseded BS 1780 1971 or 1985 and may be "Imperial" units.

6.3.2 The gauge units of measurement shall be as specified in the descriptions held on the MoD procurement data base (CRISP, ENQ09B Item of supply description) and not restricted to "bar" or S.I. units.

6.3.3 The pressure range shall be as specified in the descriptions held on the MoD procurement data base (CRISP, ENQ09B Item of supply description) and not restricted to those in BS EN 837.

6.3.4 Vacuum gauges may have clockwise rotation with increasing vacuum. Pressure and combined gauges shall always be clockwise for increasing temperature and pressure. This will also be the normal mode for vacuum gauges unless otherwise specified.

6.3.5 Gauge accuracy shall be to BS EN 837-1 & 3 accuracy class 1.0 and differential gauges shall be accuracy class 1.6% of span. Test gauges to BS EN 837-1 shall be accuracy class 0.25 unless otherwise specified.

6.3.6 Gauge dimensions shall conform to those given by the applicable gauge standard which shall be either BS EN 837-1 & -3 or the superseded BS 1780 (1971 & 1985).

6.3.7 The shanks shall conform to BS EN 837-1 or BS EN 837-3 (depending on type) but the pressure connection thread type (either external or internal) shall be as specified in the descriptions

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held on the MoD procurement data base (CRISP, ENQ09B Item of supply description) and may either be:

6.3.7.1 BS EN ISO 228-1:2003 for parallel threads for attachment only (e.g. G1/2B, G1/4), or BS 2779:1986, or

6.3.7.2 ISO 7-1 1994 Part 1 Pipe threads where pressure tight joints are made on the threads.(e.g. R1/2) or

6.3.7.3 BS 21:1985 Pipe threads where pressure tight joints are made on the threads.(e.g. R1/4), or,

6.3.7.4 ANSI/ASME B1.20.1:1983 for taper sealing threads. (e.g. 1/2NPT), or

6.3.7.5 UNF-to BS 1580:Parts 1 and 2:1962. or BS 1580-3:1965.

6.3.8 The minimum environmental protection shall be IP 54 ("dust protected", "protected against splashing water") in accordance with BS EN 60529 degrees of protection provided by enclosures (IP code).

6.3.9 Dial markings.

6.3.9.1 "Def Stan 66-2 PT 2 (EN 837-1)" (or EN 837-3 as applicable) shall be marked on the dial. Where insufficient space is available due to gauge size "Def Stan 66-2 PT2" only shall be marked.

6.3.9.2 The material of the wetted parts shall be marked on the dial.

6.3.9.3 For Differential pressure gauges the maximum working pressure shall be marked on the dial.

6.3.10 All pressure gauges to BS EN 837-1 shall be full safety pattern (baffle wall, blow out back, acrylic, laminated or safety, non splintering glass window) in accordance with BS EN 837-1 type "S3". "S" shall be marked on the dial as required by BS EN 837-1. Surface mounted gauges shall be supplied with spacers (stand-offs) attached to the gauge mounting holes to allow the blow out back to function.(minimum clearance of 20mm required). Gauges may have these parts integral to the case. Gauges to BS EN 837-3 shall have safety features in accordance with the recommendations of BS EN 837-2 table 2. Gauges with a Polycarbonate body may have a Polycarbonate window.

6.3.11 The movements shall meet the performance requirements of BS EN 837-1 and be constructed from either stainless steel to the specifications of 7.12.6.1 or brass to the specifications in 7.12.2.1.

6.3.12 Gauges with electrical contacts which are opened or closed in relation to the motion of the gauge pointer shall have the below general arrangement.

An adjustable red set pointer for each contact/switch. A supporting arm which is connected to the set pointer which carries the contact pin and a contact arm moved by the gauge pointer and carrying the second contact pin. An adjusting key, which can be removed, centrally positioned on the gauge window to permit external adjustment of the switching position of the contact(s). Once actuated by the action of the gauge pointer the contacts/switch shall remain in that state until the reverse motion of the pointer reverses the state. The switching action shall in no way inhibit the free motion of the pointer in response to pressure, except to absorb enough energy to actuate the contacts (as below 6.3.12.7). The switch bearings shall be stainless steel running in synthetic ruby (or materials of equivalent performance) returned by a hair spring.

Gauges with electrical contacts shall also meet the following performance requirements unless otherwise specified. Specifications for the different options are given in Annex B.

6.3.12.1 The contacts shall be magnetically operated to create a snap action.

6.3.12.2 The rated operational voltage shall be up to 250V (maximum.).

6 مشخصات عملکردی

6-1 سطح بلندی برای ^{مطابق مورد نظر} مناسب باشد

6-2 سطح های شمار باید مطابق با استاندارد زیر باشد

BS EN 837-3 or part 1 of EN 837-1:1998

ساختار جنس ساخت باید مطابق با "EN 809 B" و برای آنکه در بخش 7 تدفیع داده شده باشد.

6-3 برای کیفیت و مسائل ایمنانه، امتحان، کلمات و مشخصات زیر باید اعمال شود:

6-3-1 سایز اسم (nominal size) باید از استانداردهای زیر باشد:

BS EN 837-1 or BS EN 837-3

دریا استاندارد جانگیزین زیر

BS 1780 1971 or 1985

6-3-2 در لغات استاندارد زیری سطح باید مطابق آنچه در توصیف شده در هر سه پایه دارد Mod (CRISP, EN 809 B) باشد، محدود به 'bar' و واحدهای SI فنلند

6-3-3 بازه های شمار نیز باید مطابق آنچه در (CRISP, EN 809 B) گفته شده باشد و به آنچه که در EN 837 گفته شده محدود نباشد.

6-3-4 سطح صلا برای اندازه های صفا باید دارای چرخش ساختاری باشد. سطح های تریبی در سطح شمار برای افزایش دقت شمار باید دارای چرخش ساختاری باشد.

6-3-5 دقت سطح باید مطابق استاندارد زیر باشد:

BS EN 837-1 8 3 accuracy class 1.0

سطح های قاصتی یا دنیاسنی (differential) باید در کلاس دقت زیر باشد:

accuracy class 1.6 % of span

سطح حالت دنیاسنی نیز مطابق با استاندارد دکان زیر:

BS EN 837-1 accuracy class 0.25

6.3.6 اجاد لیج با به معلق با استاندارد لیج با ~~لیج~~ (لیج لیج استاندارد زیر)

BS EN 837-1 8 3

BS 1780 (1971 8 1985)

یا جایگزین آن است:

6.3.7 Shank با به معلق استاندارد زیر با ~~لیج~~

BS EN 837-1 or BS EN 837-3

اما نوع رزدهی انقباض فشار با به معلق (ORISP, EN 909B) با ~~لیج~~ است لیج لیج استاندارد زیر با ~~لیج~~

6.3.7.1 BS EN ISO 228-1:2003 یا BS 2779:1986 برای رزدهی مایع برای انقباض

6.3.7.2 ISO 7-1 1994 part 1 رزدهی لوله ها جای که انقباض مایع در روی رزده ایجا کرده

6.3.7.3 BS 21:1985 رزدهی لوله ها 1-2-3-4-5-6-7-8-9-10

6.3.7.4 ANSI/ASME B1.20.1 رزدهی مایع آب بندی مخروطی

6.3.7.5 UNF - to BS 1580: part 1 and 2: 1962 or BS 1580

6.3.8 سینی حفاظت مایع نظیر "فشار" "فرش" یا "سینی آب" با به معلق با

BS EN 60329

استاندارد زیر با ~~لیج~~

6.3.9 علامت گذاری Dial

6.3.9.1 علامت گذاری روی Dial نوشته با ~~لیج~~

"Def stan 66-2 PT 2 (EN 837-1)" or EN 837-3

6.3.9.2 جنس همت مایع جنس در معلق (wetted part) با به روی dial نوشته شود.

6.3.9.3 برای لیج مایع ~~لیج~~ فشار تقاضی، مایع سیم کار با به روی dial نوشته شود.

6.3.10 کدهی لیج مایع فشار معلق BS EN 837-1 با به روی الکتریکی مایع