



(1) **EU-TYPE EXAMINATION CERTIFICATE**

(2) **Equipment and protective systems intended for use in potentially explosive atmospheres – Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number: **ICQC 24 ATEX 0526 X**

**Issue: 0**

(4) Equipment: **Explosion Proof Solenoid Coil with Terminal Box Assembly, Model E50N DS1EX**

(5) Applicant: **DUNCAN ENGINEERING LIMITED  
F-33, MIDC, Ranjangaon, Karegaon, Tal-Shirur, Pune – 412220, Maharashtra, INDIA**

(6) Manufacturer: **DUNCAN ENGINEERING LIMITED  
F-33, MIDC, Ranjangaon, Karegaon, Tal-Shirur, Pune – 412220, Maharashtra, INDIA**

(7) This equipment and any acceptable variations, also documents which are specified in the schedule to this certificate.

(8) The certification body ICQC, Notified Body No. 2549 in accordance with Article 17 of the Directive 2014/34/EU of the European Parliament and the Council of 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in confidential report No. **526/2024/04/ATEX**


(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

**EN IEC 60079-0:2018+AC:2020-02, EN 60079-1:2014+AC:2018-09,  
EN 60079-18:2015+AC:2018-09, EN IEC 60079-31:2024**

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design and the construction of the specified equipment in accordance with Directive 2014/34/EU. Further requirements of this Directive apply to the manufacture and supply of this equipment. These are not covered by the certificate

(12) The marking of the equipment or protective system shall include the following:

 **II 2 G Ex db mb IIC T\* Gb  
II 2 D Ex tb IIIC T\*\*°C Db IP66/67  
-40 °C ≤ Ta ≤ +XX °C**

See schedule to certificate Table 1 for

\*/\*\*- applicable temperature class/max. surface temperature

XX - applicable higher ambient temperature

Head of Certification Body:



Sergey Kovalev

Date of issue: 14 October 2024  
Jurmala, Latvia



(13) **SCHEDULE**

(14) **to EU-TYPE EXAMINATION CERTIFICATE: ICQC 24 ATEX 0526 X**

**Issue: 0**

(15) **Description of Equipment:**

Explosion Proof Solenoid Coil with Terminal Box Assembly (hereinafter - the Solenoid), Model E50N is designed for industrial process control as well as discrete control application.

The Solenoid comprises a cast housing with an integral terminal enclosure and a cover. The enclosure constructed in aluminium cast alloy ADC12, alternate material can be stainless steel casting CF8 or CF8M. The cover on the enclosure provides access to the terminal compartment and is fitted with an O ring and flat gasket to provide ingress protection IP66/67. The cover is secured on the integral terminal enclosure with 4 nos. of M6 X 15L socket head cap screws. Two-way terminal blocks are fitted within the terminal enclosure.

The Solenoid has a single cable entry. It can be either M20X1.5 P or ½" NPT. Coil is wound on a non-metallic bobbin and is fully encapsulated with a thermal fuse within a metallic case. Solenoid coil actuates a mechanical solenoid valve mechanism.

**Temperature rating:**

The maximum ambient temperature depends on the maximum power and supply voltage as detailed in Table 1 below

Table 1

Relation between Temperature class / Max. surface temperature and ambient temperature range

Solenoid Size	Voltage (Max.)	Max. Power (Watts)	Maximum Ambient temperature w.r.t. Temp class / Max. Surface temperature			Use cable and cable glands suitable for below temperatures
			T6/T85°C	T5/T100°C	T4/T125°C	
E50N	110VAC, 230VAC	6W	61°C	76°C	77°C	90°C
	48VDC	8W	49°C	64°C	67°C	90°C
	24VDC	10W	50°C	65°C	66°C	90°C
	110VDC	11W	49°C	64°C	67°C	90°C

The Temp class / Max. Surface temperature depends on the safety fuse installed as detailed in table 2 below;

Table 2

Relation between fuse model and Temp class / Max. Surface temperature

Solenoid Size	Voltage (Max.)	Max. Power (Watts)	Relation between fuse model and Temp class / Max. Surface temperature		
			T6 / T85°C	T5 / T100°C	T4 / T125°C
E50N	110VAC, 230VAC	6W	8085	8103	8103
	48VDC	8W	8098	8115	8115
	24VDC	10W	8085	8103	8103
	110VDC	11W	8098	8115	8115



**Type Designation:**

E50N	D	S1	EX	X	X	X	XX	XXX	XX	X
	1	2	3	4	5	6	7	8	9	10

Code	Designation
1	Manufacturer D – Duncan Engineering Limited
2	Solenoid Size S1
3	Enclosure type EX- Explosion proof terminal box
4	Material A – Aluminium S – Stainless steel 316
5	Cable entry size 1 – 1/2" NPT Female 2 – M20x1,5 Female
6	Coil insulation class H – Class H
7	Coil Wattage 06 – 6 Watts (110 / 230 VAC, 50 Hz) 08 - 8 Watts (48 V DC) 10 - 10 Watts (24 V DC) 11 – 11 Watts (110 V DC)
8	Coil Voltage 024 – 24 V 048 – 48 V 110 – 110 V 230 – 230 V
9	Power Supply AC – 50Hz AC DC - DC
10	Approvals: 2 – ATEX & IECEx, Temperature class T4 3 – ATEX & IECEx, Temperature class T5 4 – ATEX & IECEx, Temperature class T6

**Technical characteristics:**

Parameters	Value
Power supply	110V/AC 50Hz, 230V/AC 50Hz, 24V/DC, 48V/DC, 110V/DC
Power consumption	AC-6W, DC-8W,10W & 11W
Duty cycle	CONTINUOUS (100%)
Pollution degree	3
Over voltage category	OVC II
Intended use	INDOOR / OUTDOOR
Degree of protection	IP 66/67

**Warning markings:**

“WARNING - DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT”

“WARNING-POTENTIAL ELECTROSTATIC CHARGING HAZARD- SEE INSTRUCTION”

“WARNING-USE CABLE GLAND SUITABLE FOR 90°C”



Routine tests:

1. Manufacturer should carry out visual inspections to ensure encapsulated coils are free from any damage such as cracks, flaking, swelling, inadmissible shrinkage, decomposition and failure in adhesion or softening.
2. An dielectric strength test of 2U+1000V for coil voltage above 48 V and 500Vrms for coil voltage up to 48 V, shall be applied between the coil leads and casing for at least 1 second. Alternatively, 1.2 times this test voltage may be applied for at least 100ms. No breakdown shall occur.

(16) **Descriptive Documents:**

SPECIFICATION, INSTALLATION, OPERATION & MAINTENANCE INSTRUCTION:

DEL-IOM-ENG-11, Rev. 00 dated 01.07.2023

The drawings are listed in Evaluation report No: 526/2024/04/ATEX

**Certificate History:**

Issue/Date	Evaluation report	Comment
Issue 0 from 14.10.2024	526/2024/04/ATEX	The release of the prime certificate.

(17) **Specific conditions of use:**

17.1 The fastening screws for the cover with spigot joint shall be stainless steel socket head cap screws of property class A2-70 and yield stress of 450 N/mm<sup>2</sup>.

17.2 The manufacturer has maintained more stringent gaps, larger flamepath length and more number of threads engaged than those specified in the standard EN 60079-1. The user must refer to manufacturer before carrying out any repairs or refurbishment to the equipment.

(18) **Essential Health and Safety Requirements:**

Met by compliance with the standards mentioned in clause (9).