VFL2-Ex, VTL2-Ex, VRA2-Ex

VEAB Heat Tech AB



Ex II 2 G Ex db eb mb IIC T3 Gb

SE **Installation, drift och skötselanvisning**
ATEX/UKEX godkänd elektrisk värmare för explosiv gasatmosfär
VIKTIGT: Läs denna anvisning innan produkten monteras och ansluts.
Spara denna instruktion för framtida bruk.....2

GB **Installation, operation and maintenance instruction**
ATEX/UKEX approved electrical air heaters for explosive gas atmospheres.
IMPORTANT: Read these instructions before installing and connecting the product.
Save these instructions for future use.....4

DE **Einbau, Betrieb und Wartung**
Elektrische Lufterhitzer mit ATEX/UKEX-Zulassung für explosive Bereiche.
WICHTIG: Diese Anleitung vor Einbau und Anschluss des Produkts lesen.
Diese Anleitung für künftige Verwendung aufbewahren.....6

Art.nr: 173062-05

SE

1.0 Allmänt

1.1 Allt arbete ska utföras av kvalificerad och behörig personal.

1.2 Hantera utrustningen varsamt.

1.3 Värmaren ska förvaras torrt innan montage, relativ fuktighet <55%, temperatur >15˚C.

1.4 Omgivningstemperatur för värmaren i drift är min. -50˚C...max. +40˚C.

1.5 Innan installation skall en visuell kontroll efter transportskador göras.

1.6 Värmaren måste vara säkert fixerad i ventilationskanalen.

1.7 Om förändringar görs på produkten utan VEAB Heat Tech AB medgivande blir certifikat för godkännande ogiltiga.

1.8 Temperaturbegränsarens givare är monterad med en fjäder runt värmeelementen på effektsteg 1. Givaren mäter elementets yttemperatur.
Termostatens givare är monterad i ett bulbrör. Givaren mäter utgående lufttemperatur.

1.9 Denna apparat får användas av barn över 8 år, personer med fysiska- eller psykiska funktionshinder samt personer som saknar erfarenhet, men endast under förutsättning att de har fått noggranna instruktioner om apparatens funktioner och eventuella risker. Barn får ej leka med apparaten. Rengöring och underhåll får ej utföras av barn utan att de har tillsyn.

2.0 Montering

2.1 Min. luftmängd genom värmaren framgår av typskylt på locket. Utgående driftstemperatur får inte överstiga 40˚C.

2.2 När värmebehov finns skall värmeelementen för effektsteg 1 alltid vara inkopplat.

2.3 Värmaren kan monteras i horisontell eller vertikal kanal, kopplingsskåp placeras åt sidan eller uppåt.

2.4 Avstånd från eller till kanalböj, spjäll, filter el. dyl. bör vara minst det avstånd som motsvarar kanalvärmarens diagonal mått, dvs. från hörn till hörn i värmarens kanaldel. Annars finns risk att luftströmmen genom värmaren blir ojämn med följd att elementen kan bli överhettade.

2.5 Luftriktningen genom värmaren skall följa den pil som sitter monterad på värmarens lock. Temperaturbegränsare och termostat skall alltid ligga sist i luftströmmen.

2.6 Inställt värde på de ytmonterade temperaturbegränsarna med manuell återställning får inte ändras, för temperatur klass T3 är samtliga temperaturbegränsare fabriksinställda på 150˚C.

2.7 Inställt värde på termostat med automatisk återgående återställning får inte ställas in över 60˚C.

3.0 Elinstallation

3.1 Installationen måste uppfylla kraven för godkänd installationsstandard.
1. Öppna locket på kopplingsskåpet.
2. Anslut matningskabel till plint för varje effektsteg,

Max kabelarea i anslutningsplint	
Anslutningsplint	Max kabelarea
1492-J4 & JG4	4mm²
1492-J6 & JG6	6mm²
1492-J10 & JG10	10mm²
1492-J16 & JG16	16mm²
1492-J35 & JG35	35mm²

jordplint och plint 1-6 för temperaturbegränsare/termostat. Tillval: Värmare försedd med anti-kondensvärmare skall matarkabel anslutas till plint 7 och 8.
3. Stäng locket på kopplingsskåpet.

3.2 Kanalvärmaren skall installeras så att den förreglas mot både temperaturbegränsare och termostat, som är monterade i värmaren, samt den fläkt eller luftflöde som passerar kanalvärmaren. Kraftmatningen till elementen ska alltså inte kunna slås till utan att tillhörande fläkt startas eller om temperaturbegränsare lösts ut.
Se inkopplingsexempel, bilaga 1 sid 10.
När värmebehov finns ska värmeelementen för effektsteg 1 alltid vara inkopplat. De inbyggda temperaturbegränsarna är monterade på effektsteg nummer 1. Om värmaren har fler än ett effektsteg skall effektsteg 1 alltid vara det steg som först bli spänningssatt när det uppstår ett värmebehov. Effektsteg nummer 1 skall vara det steg som sist kopplas bort när värmaren stängs av.
Om kanalvärmaren har mer än ett effektsteg och första steget skall tyristorstyras måste värmaren vara utrustad med temperaturbegränsare även på effektsteg 2.

3.3 En allpolig brytare skall ingå i den fasta installationen.

3.4 Styrutrustningen skall ha en separat sensor som automatiskt begränsar temperaturen på utgående luft från värmaren till 40˚C.

3.5 Värmarens data för driftspänning, effekt samt temperatur begränsare framgår av det elschema som sitter monterat på insidan av kanalvärmarens lock samt av märkskylten på utsidan av locket.

3.6 Kontrollera åtdragningsmomentet på samtliga kopplings plintar före idrifttagande, åtdragningsmoment framgår av elschema. Detta skall också göras minst en gång efter att värmaren varit i drift 6 månader. Detta bör också göras periodiskt i samband med övrigt schemalagt underhåll för anläggningen.

3.7 Värmaren ska anslutas till nätet med fast förlagd kabel och kopplas till styrutrustning som är godkänd för aktuellt riskområde.

3.8 Förses endast med kabelförskruvningar i skyddsform IP66, eller högre, och godkända i Ex e eller Ex d utförande (medföljer ej).

3.9 Anslutningspunkt för extern jord är placerad på kopplings bryggan. Anslutningspunkt för yttre potentialutjämning finns i närheten av kabelingångarna.

4.0 Underhåll och reparationer

4.1 Innan och under reparationer/underhåll kontrollera att inga explosiva gaser finns i zonen kring värmaren.

4.2 Följ i övrigt gällande bestämmelser för arbete i explosionsfarlig miljö.

4.3 Vid behov av att byta ut komponenter skall dessa beställas från VEAB Heat Tech AB. Användning av andra komponenter kan påverka certifiering.

4.4 Värmeelementen i en VFL2-EX är monterade i kopplingsskåpets botten och är utbytbara utan att stommen demonteras från kanalsystemet.

4.5 För att underhålla isolationen på värmeelementen skall effekten vara tillkopplad under 24 tim, åtminstone var 6:e månad.

4.6 Inget annat specifikt underhåll erfordras förutom periodisk återkommande översyn och funktionskontroll. Se även punkt 3.6.

5.0 Överhettning/Återställning

5.1 Värmaren är utrustad med temperaturbegränsare som är egensäkra dvs. vid ett eventuellt kapillärrörsbrott så kommer skydden automatiskt att bryta säkerhetskretsen. Denna säkerhetsfunktion gör också att överhettningsskydden är känsliga för stötar under transporten. Innan värmaren tas i drift gör en manuell återställning av alla temperaturbegränsare, se bild 1 nedan.
Om temperaturbegränsare med manuell återställning löst ut under drift iakttas följande:

1. Bryt strömmen.

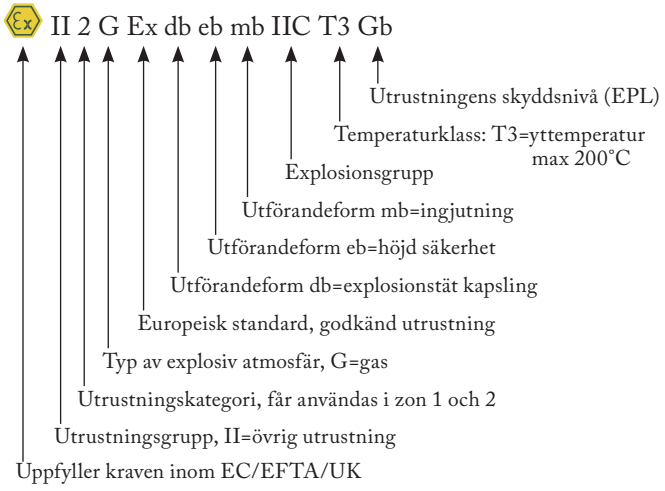
2. Undersök noga orsaken till att temperaturbegränsare löst ut och åtgärda felet.

3. Då felet är avhjälpt återställs temperaturbegränsaren inuti värmarens kopplingsskåp. Om återställning gjorts genom locket måste bultarna/brickorna/packningarna återmonteras med rätt moment, 9-10Nm. Se bild 1.

6.0 Märkning och godkännande

6.1 VFL2-Ex, VTL2-Ex, VRA2-Ex

6.2

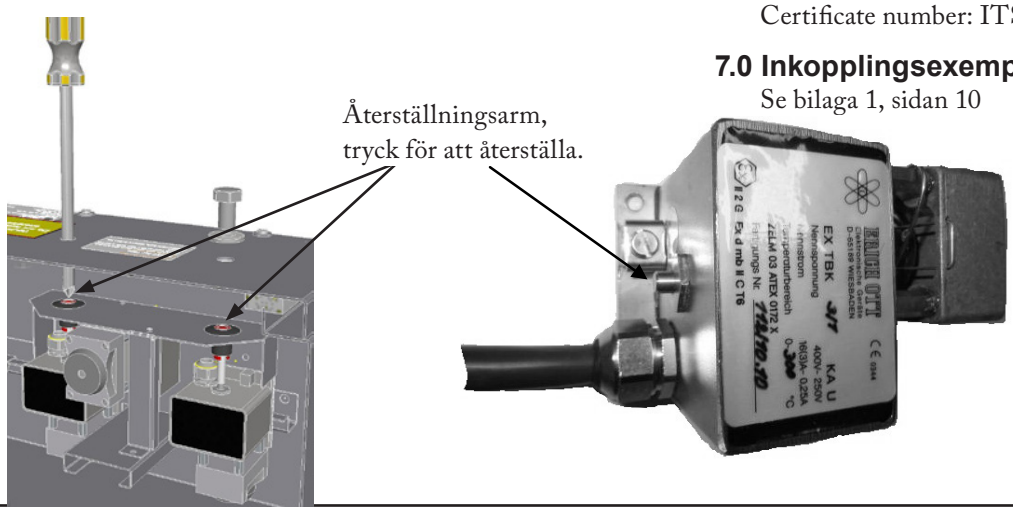


6.3 Intertek Notified Body number: 2903
Certificate number: ITS10ATEX36956X
Intertek Approved Body number: 0359
Certificate number: ITS21UKEX0246X

7.0 Inkopplingsexempel

Se bilaga 1, sidan 10

Bild 1.



GB

1.0 General

1.1 All work is to be done by qualified and authorised personnel.

1.2 Handle the equipment carefully.

1.3 The heater is to be stored in dry conditions, relative humidity <55%, temperature >15°C.

1.4 The ambient temperature for the heater when in use is min. -50°C / max. +40°C.

1.5 Before installing the unit, a visual check for transport damages must be made.

1.6 The heater must be secured to the ventilation duct.

1.7 If any changes are made to the product without the consent of VEAB Heat Tech AB, all the certificates of approval becomes invalid.

1.8 The temperature limiter capilary tub are fixed with a spring coil around the heating element. Monitoring heating element temperature.
The thermostat are fixed in a tube. Monitoring outlet air temperature.

1.9 This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concering use of the appliance in a safe way and understand the hazards involved, Childen shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

2.0 Fitting

2.1 Min. airflow rate through the heater is stated on the typelable on the lid. Outlet air temperature must not exceed 40°C.

2.2 When heat is required, heating elements for power step 1 shall always be energized.

2.3 The heater may be mounted in a horizontal or a vertical duct, the junction box is to be placed on the side or upwards.

2.4 The minimum distance from or to the nearest duct bend, valve, filter, etc., should correspond with the diagonal dimension of the heater i.e. the from corner to corner in the duct part of the heater. If this is not the case there is a risk that the air flow through the heater will be uneven, which may activate the temperature limiter.

2.5 The air flow direction through the heater must go in the same direction as the arrow on the cover of the heater.
The temperature limiter and safety thermostats shall always be placed last in the air flow direction.

2.6 The settings for the surface-mounted temperature limiter with manual resets must never be changed.
For the T3 temperature class, the temperature limiter is factory set to 150°C.

2.7 The setting for the thermostat with automatically reset must never be higher than 60°C.

3.0 Electrical connections

Max cross-sectional area in terminal block	
Terminal block	Max cross-sectional area
1492-J4 & JG4	4mm²
1492-J6 & JG6	6mm²
1492-J10 & JG10	10mm²
1492-J16 & JG16	16mm²
1492-J35 & JG35	35mm²

3.1 Installation has to meet the requirements of any approved standard.
1. Open the junction box
2. Connect the supply cable to the terminals in each step, terminal earth and terminal 1-6 for thermal protection.
Optional: Heater equipped with anti-condensation heater, connect the supply cable to the terminals 7 and 8.
3. Close the junction box.

3.2 The duct heater must be installed so that there is an interlock between the temperature limiters and the thermostat that are fitted to the heater, as well as the fan/air flow that flows through the duct heater. The power supply to the elements should consequently not be switched on unless the associated fan starts or if the temperature limiter has tripped. See wiring example, appendix 1 page 10.
When heat is required, heating elements for power step 1 shall always be energized. The temperature limiters are mounted on power step number 1. If the heater has more than one power step, power step number 1 shall always be the first to be energized when the heater is required for operation, and the last to be switched off when the power is turned off.
If the duct heater has more then one power step and the first power step will be regulated by a thyristor, the heater must also be equipped with temperature limiters on power step 2.

3.3 A multi-pole switch shall be installed in the fixed installation.

3.4 The control equipment shall have a separate sensor which automatically limits the temperature of the outlet air from the heater to 40°C.

3.5 The heater's data for voltage, power and temperature limiter is stated on the wiring diagram that is on the inside of the cover to the duct heater as well as on the specification plate on the outside of the cover.

3.6 Check the torque for all terminal blocks before using the heater. The torques are specified on the wiring diagram. This must also be done, at least once, after the heater has been in use for 6 months. This must also be done in connection with other periodic maintenance on the equipment.

3.7 The heater must be connected to the mains using a permanent cable, and be connected to control equipment that is approved for the risk area in question.

3.8 Use only cable connections with IP66 protection, or higher, approved for Ex e or Ex d (not included).

3.9 The connector for external earth is placed closed to the terminal blocks. The connector for the external equi-potential is close to the cable entry points.

4.0 Maintenance and repairs

4.1 Make sure that there are no explosive gases in the area around the heater, before commencing and during any repairs and maintenance.

4.2 Follow any applicable regulations concerning work in explosive gas environments.

4.3 If there is a need for replacement of the components, those are to be ordered from VEAB Heat Tech AB.
The use of other components may affect the validity of the certifications.

4.4 The heater elements of a VFL2-EX are mounted at the bottom of the junction box, and can be replaced without dismantling the frame from the duct system.

4.5 To maintain insulation of the heating elements, the power step must be switched on for 24h, at least every six month.

4.6 No other specific maintenance is required except periodical maintenance and function tests. See also section 3.6.

5.0 Overheating/Resetting

5.1 The heater is equipped with temperature limiters and thermostat that is fail-safe, i.e. if the capillary tube should rupture, the safety circuits are automatically tripped. This safety function also means that the temperature limiter is sensitive to shocks during transport. Before the heater is used, perform a manual reset of the temperature limiter. See figure 1 below.
If the temperature limiter with manual reset has tripped during use, the following must be carried out:

1. Turn off the power supply.

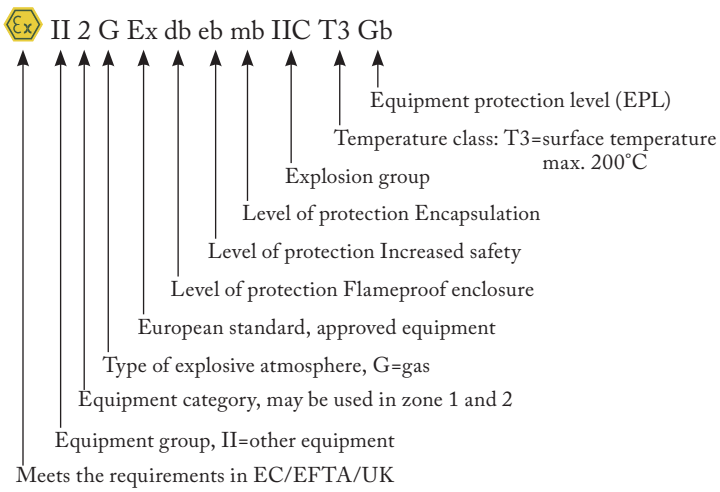
2. Do a careful search for the cause that has tripped the temperature limiter, and correct it.

3. When the cause has been corrected, reset the tempera ture limiter in the junction box of the heater. If the resetting is made through the lid, bolts/washers/gaskets must be re-assembled with the correct torque, 9-10Nm. See figure 1.

6.0 Markings and approvals

6.1 VFL2-Ex, VTL2-Ex, VRA2-Ex

6.2

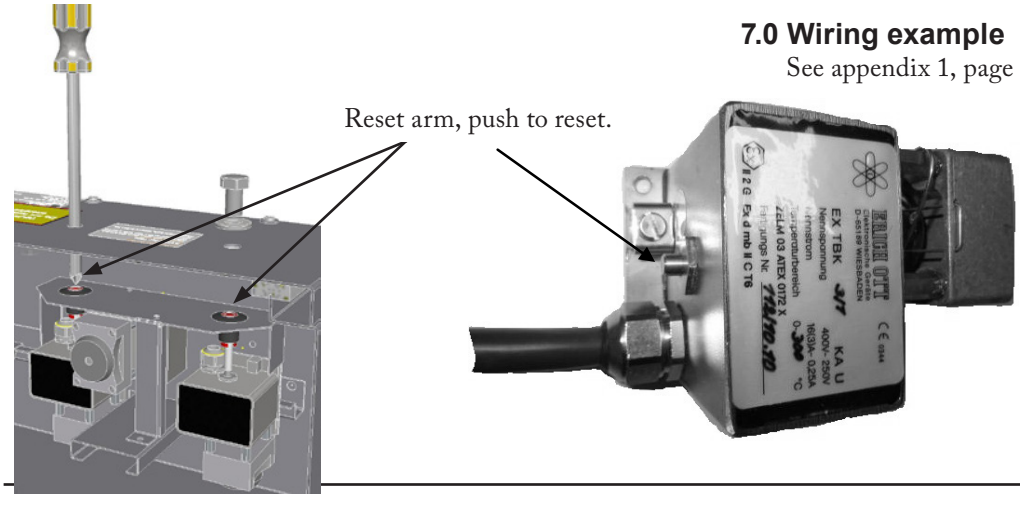


6.3 Intertek Notified Body number: 2903
Certificate number: ITS10ATEX36956X
Intertek Approved Body number: 0359
Certificate number: ITS21UKEX0246X

7.0 Wiring example

See appendix 1, page 10

Figure 1.



DE

1.0 Allgemeines

1.1 Sämtliche Arbeiten sind von qualifizierten und autorisierten Fachleuten durchzuführen.

1.2 Anlage vorsichtig handhaben.

1.3 Der Erhitzer muss trocken, bei einer relativen Luftfeuchtigkeit unter 55 % und einer Temperatur von über 15 °C gelagert werden.

1.4 Die Umgebungstemperatur für den Erhitzer im Gebrauch muss zwischen -50 °C und +40 °C liegen.

1.5 Vor dem Einbau der Anlage ist eine Sichtprüfung auf Transportschäden vorzunehmen.

1.6 Der Erhitzer muss am Lüftungskanal befestigt werden.

1.7 Bei Änderungen am Produkt ohne Zustimmung von VEAB Heat Tech AB verlieren alle Zulassungen ihre Gültigkeit.

1.8 Das Kapillarrohr des Temperaturbegrenzers wird mit einer Spiralfeder um das Heizelement fixiert. Überwachung der Heizelementtemperatur. Der Thermostat ist in einem Rohr befestigt. Überwachung der Austrittslufttemperatur.

1.9 Dieses Gerät kann von Kindern ab 8 Jahren, körperlich oder geistig Behinderten sowie von unerfahrenen Personen bedient werden , jedoch nur, wenn sie über die Funktionen des Geräts eingehend unterrichtet und auf die Gefahren aufmerksam gemacht wurden. Kinder dürfen mit dem Gerät nicht spielen. Kinder dürfen das Gerät nicht ohne Aufsicht reinigen oder warten.

2.0 Einbau

2.1 Min. Luftmenge durch den Erhitzer ist auf dem Typenschild auf dem Deckel gezeigt.
Die Ausgangstemperatur darf 40 °C nicht überschreiten.

2.2 Wenn Heizleistung benötigt wird, müssen stets die Heizelemente für Leistungsstufe 1 mit Strom versorgt werden.

2.3 Der Erhitzer kann in einem horizontalen oder vertikalen Kanal montiert werden. Dabei muss der Anschlusskasten seitlich oder nach oben gerichtet angeordnet werden.

2.4 Der Mindestabstand vom oder zum nächsten Kanalbogen, Ventil, Filter usw. muss der diagonalen Abmessung des Erhitzers, d. h. von Ecke zu Ecke, im Kanalteil des Erhitzers entsprechen. Ist dies nicht der Fall, besteht die Gefahr, dass der Luftstrom durch den Erhitzer ungleichmäßig ist, wodurch die Temperaturbegrenzung ansprechen kann.

2.5 Die Luftstromrichtung durch den Erhitzer muss mit dem Richtungspfeil auf der Abdeckung des Erhitzers übereinstimmen. Die Temperaturbegrenzung und Sicherheitsthermostaten müssen immer zuletzt in Luftstromrichtung angeordnet werden.

2.6 Die Einstellungen des oberflächenmontierten Temperaturbegrenzers mit manueller Rückstellung dürfen nicht verändert werden. Für die Temperaturklasse T3 ist der Temperaturbegrenzer ab Werk auf 150 °C eingestellt.

2.7 Die Einstellung des Thermostaten mit automatischer Rückstellung darf keinesfalls höher als 60 °C sein.

Max. Querschnitt im Klemmenblock	
Klemmenblock	Max. Querschnitt
1492-J4 und JG4	4 mm²
1492-J6 und JG6	6 mm²
1492-J10 und JG10	10 mm²
1492-J16 und JG16	16 mm²
1492-J35 und JG35	35 mm²

3.0 Elektrische Anschlüsse

3.1 Die Installation muss den Anforderungen aller zugelassenen Normen entsprechen.
1. Anschlussdose öffnen.
2. Stromkabel an die Anschlüsse für jede Stufe, Erdungsklemme und Klemme 1-6 für Wärmeschutz anschließen.
Optional: Erhitzer mit Antikondensationsheizung:
Stromkabel an die Klemmen 7 und 8 anschließen.
3. Anschlussdose schließen.

3.2 Der Kanalerhitzer muss so installiert werden, dass eine Sicherheitsverriegelung zwischen den Temperaturbegrenzern und dem Thermostat, die an der Heizung angebracht sind, sowie dem Ventilator/Luftstrom besteht, der durch den Kanalerhitzer fließt. Die Stromversorgung der Elemente darf daher nur eingeschaltet werden, wenn der zugehörige Ventilator anläuft oder der Temperaturbegrenzer angesprochen hat.
Siehe Anschlussbeispiel, Anhang 1, Seite 10.
Wenn Heizleistung benötigt wird, müssen stets die Heizelemente für Leistungsstufe 1 mit Strom versorgt werden. Die Temperaturbegrenzer werden auf Leistungsstufe 1 montiert. Verfügt die Heizung über mehrere Leistungsstufen, muss Leistungsstufe 1 bei Gebrauch der Heizung immer als erste eingeschaltet und beim Ausschalten der Heizung als letzte ausgeschaltet werden. Umfasst die Ausrüstung des Heizregisters mehr als eine Leistungsstufe und eine Thyristorsteuerung auf der ersten Leistungsstufe, wird zusätzlich eine Temperaturbegrenzung in der Leistungsstufe 2 installiert.

3.3 Bei fester Installation ist ein mehrpoliger Schalter einzubauen.

3.4 Das Steuergerät muss einen separaten Sensor enthalten, der die Temperatur der Austrittsluft aus dem Erhitzer automatisch auf 40°C begrenzt.

3.5 Die Daten des Erhitzers für Spannung, Strom und Temperaturbegrenzung sind auf dem Schaltplan an der Innenseite der Abdeckung des Kanalerhitzers sowie auf dem Typenschild an der Außenseite der Abdeckung angegeben.

3.6 Vor Gebrauch des Erhitzers das Anzugsmoment für alle Klemmen kontrollieren. Die Anzugsmomente sind auf dem Schaltplan angegeben. Dies ist auch mindestens einmal nach 6 Monaten Betriebszeit des Erhitzers vorzunehmen.

Dies ist auch im Zusammenhang mit anderen regelmäßigen Wartungsarbeiten an der Anlage durchzuführen.

3.7 Der Erhitzer muss mit einem festverlegten Kabel an einer Steuerung angeschlossen werden, die für den konkreten Gefahrenbereich zugelassen ist.

3.8 Ausschließlich Kabelverbindungen mit Schutzart IP66 oder höher mit Zulassung für Ex e oder Ex d (nicht mitgeliefert) verwenden.

3.9 Der Anschluss für externe Erdung wird nahe an den Klemmenblöcken angebracht. Der Anschluss für den externen Potenzialausgleich befindet sich in der Nähe der Kabeleinführungen.

4.0 Wartung und Reparatur

4.1 Vor Beginn und während der Reparatur und Wartung sicherstellen, dass keine explosiven Gase in der Umgebung des Erhitzers vorhanden sind.

4.2 Alle geltenden Vorschriften über die Arbeit in explosionsgefährdeten Gasumgebungen beachten.

4.3 Ersatzteile sind von VEAB Heat Tech AB zu bestellen. Die Verwendung anderer Teile kann die Gültigkeit der Zertifikate außer Kraft setzen.

4.4 Die Heizelemente eines VFL2-EX befinden sich an der Unterseite des Anschlusskastens und können ohne Demontage des Rahmens vom Kanalsystem ersetzt werden.

4.5 Zur Wartung der Elementisolierung, ist das Heizregister für eine Zeitdauer von 24h, mindestens einmal alle 6 Monate, zu betreiben.

4.6 Außer regelmäßiger Wartung und Funktionstests sind keine weiteren Wartungsmaßnahmen erforderlich. Siehe auch Abschnitt 3.6.

5.0 Überhitzung/Rücksetzung

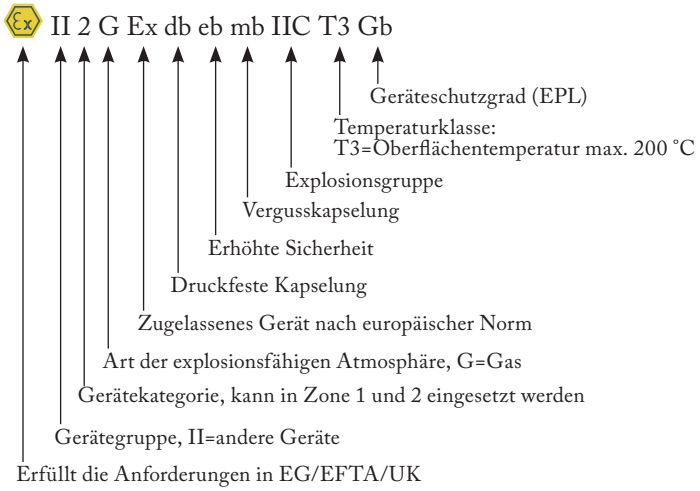
5.1 Der Erhitzer ist mit Temperaturbegrenzern und einem ausfallsicheren Thermostat ausgerüstet, d. h. falls das Kapillarrohr platzt, werden die Sicherheitskreise automatisch ausgelöst. Diese Sicherheitsfunktion bedeutet auch, dass der Temperaturbegrenzer gegen Erschütterungen beim Transport empfindlich ist. Vor Gebrauch des Erhitzers ist eine manuelle Rücksetzung des Temperaturbegrenzers vorzunehmen.
Siehe Abb. 1 unten.
Falls der Temperaturbegrenzer mit manueller Rückstellun während der Benutzung ausgelöst wird, muss Folgendes durchgeführt werden:

1. Stromversorgung abschalten.
2. Sorgsam die Ursache für das Ansprechen des Temperaturbegrenzers ermitteln und korrigieren.
3. Nachdem die Ursache behoben wurde, den Temperaturbegrenzer im Anschlusskasten des Erhitzers zurücksetzen. Nach der Fehlerbehebung ist die Abdeckung zu schließen. Die Schrauben, samt Unterlegscheiben und Dichtung sind mit einem Drehmoment von 9-10Nm anzuziehen.
Siehe Abb.1.

6.0 Kennzeichnungen und Zulassungen

6.1 VFL2-Ex, VTL2-Ex, VRA2-Ex

6.2

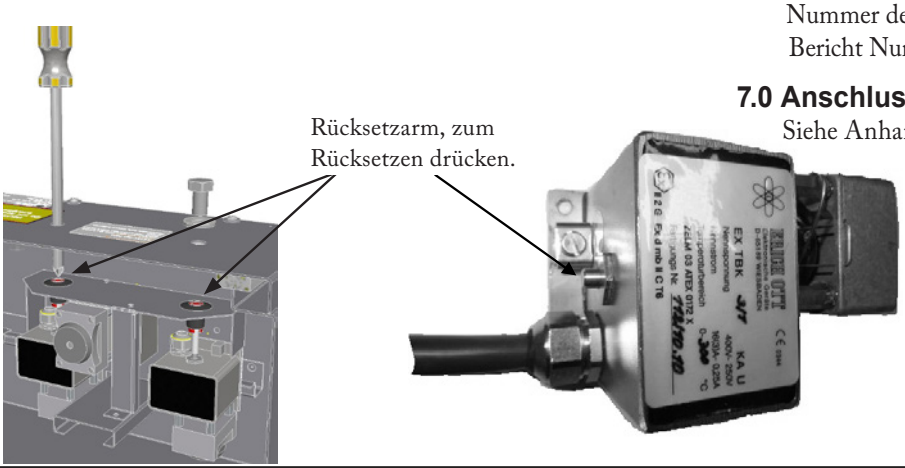


6.3 Intertek Nummer der benannten Stelle: 2903
Bericht Nummer: ITS10ATEX36956X
Nummer der von Intertek zugelass: 0359
Bericht Nummer: ITS21UKEX0246X

7.0 Anschlussbeispiel

Siehe Anhang 1, Seite 10

Abb. 1



SE

A	2st temperaturbegränsare med manuell återställning som begränsar värmeelementens yttemperatur. Monterade på element i steg 1.	H	Givare
B	Termostat för begränsning av utgående temperatur.	I	Säkerhetskontator
C	Belastning	J	Termostat
D	Förregling	K	Hög utgående temperatur
E	Kontaktor	L	Utlösta temperaturbegränsare
F	Allpolig brytare	M	Regulator
G	Effektreglering	N	Termostatreglering
		O	Anti-kondensvärme, 50W

DE

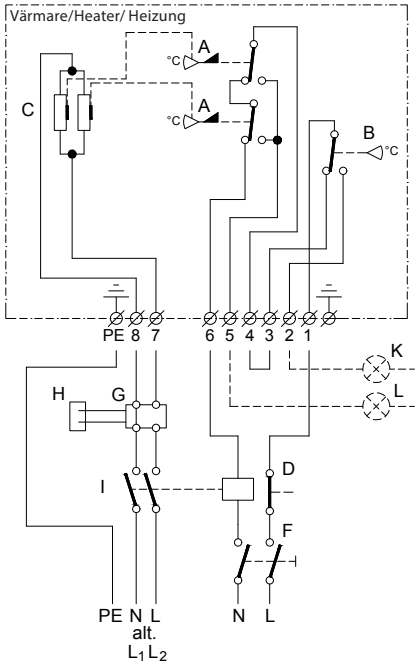
A	2 Stk. Temperaturbegrenzer mit manueller Rückstellung, Überwachung der Oberflächentemperatur des Heizelements. Angebracht am Heizelement auf Stufe 1.	G	Leistungssteuerung
		H	Sensor
		I	Sicherheitsschütz
		J	Thermostat
B	Thermostat mit automatischer Rückstellung, Begrenzung der Austrittslufttemperatur.	K	Hohe Austrittslufttemperatur
		L	Ausgelöster Temperaturbegrenzer
C	Last	M	Regler
D	Sicherheitsverriegelung	N	Regelthermostat
E	Schütz	O	Antikondensationsheizung, 50 W
F	Mehrpoliger Schalter		

GB

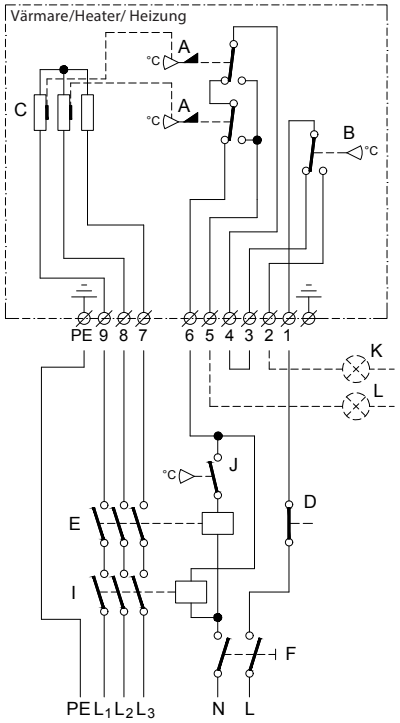
A	2 pcs temperature limiter with manual reset, monitoring heating element surgace temperature. Fitted on the heating element on step 1.	G	Output control
		H	Sensor
		I	Safety contactor
B	Thermostat with automatic reset, limiting ourlet air temperature.	J	Thermostat
		K	High outlet air temperature
C	Load	L	Tripped temperature limiter
D	Interlocking	M	Regulator
E	Contactor	N	Regulating thermostat
F	Multi-pole switch	O	Anti-condensation heater, 50W

Bilaga 1 / Appendix 1 / Anhang 1

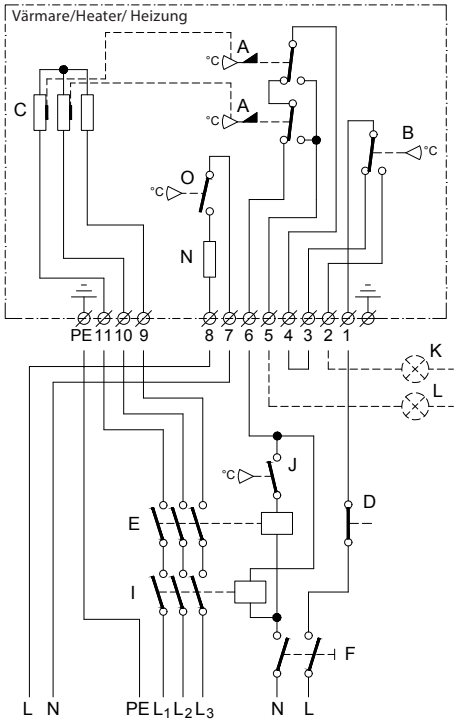
Inkopplingsexempel 1, 230V~ och 400V2~
Wiring example 1, 230V~ and 400V2~
Anschlussbeispiel 1, 230V~ und 400V2~



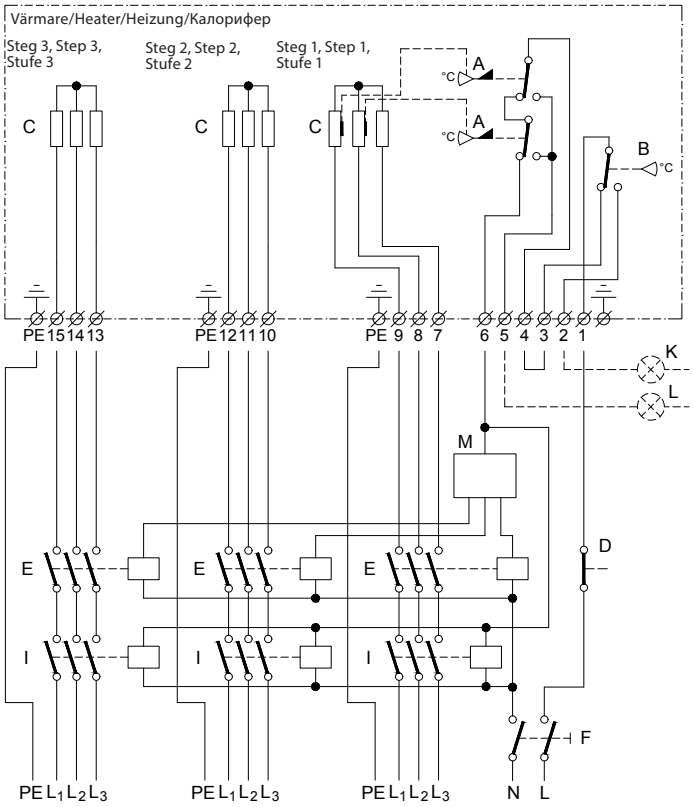
Inkopplingsexempel 2, Max 43 kW, 400V3~
Wiring example 2, Max. 43kW, 400V3~
Anschlussbeispiel 2, max. 43 kW, 400V3~



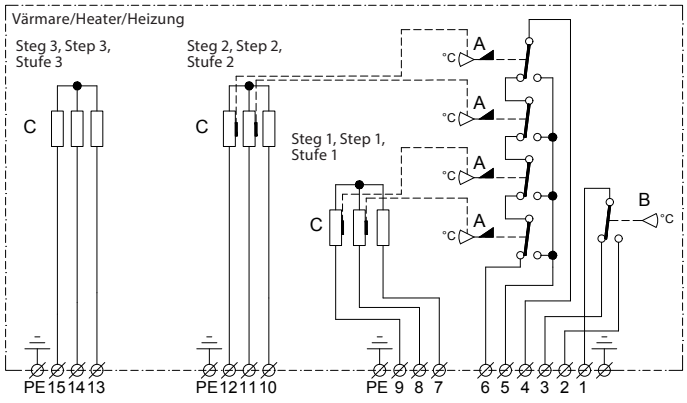
Inkopplingsexempel 3, Max 43 kW, 400V3~,
med ev. antikondensvärmare
Wiring example 3, Max. 43kW, 400V3~,
with optional anti-condensation heater
Anschlussbeispiel 3, max. 43 kW, 400V3~,
mit optionaler mit Antikondensationsheizung



Inkopplingsexempel 4, Max 129kW, 400V3~, 3 steg (⅓+ ⅓+ ⅓)
Wiring example 4, Max. 129kW, 400V3~ , 3 step (⅓+ ⅓+ ⅓)
Anschlussbeispiel 4, max. 129 kW, 400V3~, 3 Stufen (⅓ + ⅓ + ⅓)



Inkopplingsexempel 5, Max 129kW, 400V3~, med tyristorstyrning
Wiring example 5, Max. 129kW, 400V3~, with thyristor regulation
Anschlussbeispiel 5, max. 129 kW, 400V3~, mit Thyristor-Steuerung



54134-6

Godkännande

VEABs godkända kanalvärmare uppfyller kraven i ATEX/UKEX-direktivet.
Provning och certifiering är utförda av Intertek (2903/0359) enligt certifikat:
ITS10ATEX36956X/ITS21UKEX0246X.

Tillämpade provningsstandarder:
IEC/EN 60529, IEC/EN 60079-0 och IEC/EN 60079-7.

Kanalvärmarna är också testade och godkända av Intertek enligt:
LVD-direktivet: IEC/EN 60335-1, IEC/EN 60335-2-30 och IEC/EN 62233
EMC-direktivet: IEC/EN 61000-3-3, IEC/EN 61000-3-11, IEC/EN 55014-1 och IEC/EN 55014-2

Approvals

The VEAB ATEX/UKEX-approved duct heaters fulfill the requirements within directive/regulation.

Tests and certifications have been performed by Intertek (2903/0359) as per report:
ITS10ATEX36956X/ITS21UKEX0246X.

Applied testing standards:
IEC/EN 60529, IEC/EN 60079-0 and IEC/EN 60079-7.

The duct heaters are also tested and approved by Intertek according to:
LVD directive: IEC/EN 60335-1, IEC/EN 60335-2-30 and IEC/EN 62233
EMC directive: IEC/EN 61000-3-3, IEC/EN 61000-3-11, IEC/EN 55014-1 and IEC/EN 55014-2

Zulassungen

ATEX/UKEX-zugelassene Kanalheizregister von VEAB erfüllen die Anforderungen innerhalb der richtlinie.
Prüfungen und Zertifizierungen wurden von der Firma Intertek (benannte Stelle 2903/0359) gemäß Bericht
ITS10ATEX36956X/ ITS21UKEX0246X. durchgeführt.

Angewandte Prüfnormen:
IEC/EN 60529, IEC/EN 60079-0 und IEC/EN 60079-7.

Die Kanalheizregister werden auch von der Firma Intertek geprüft und zugelassen nach:
LVD-Richtlinie: IEC/EN 60335-1, IEC/EN 60335-2-30 und IEC/EN 62233
EMV-Richtlinie: IEC/EN 61000-3-3, IEC/EN 61000-3-11, IEC/EN 55014-1 und IEC/EN 55014-2

II 2 G Ex db eb mb IIC T3 Gb

EU / UKCA Declaration of Conformity

EU / UKCA - försäkran om överensstämmelse

Product designation: *Produkt:*	Rectangular electrical duct heater for hazardous areas *Rektangulär elektrisk kanalvärmare för explosionsfarliga miljöer*
Type designation: *Typbeteckning:*	VTL2-Ex, VFL2-Ex, VRA2-Ex
Brand name or trademark:	VEAB
Manufacturer: *Tillverkare:*	VEAB Heat Tech AB Stattenavägen 50, SE-281 33 HÄSSLEHOLM SWEDEN Tel:+46 451 48500 E-mail: veab@veab.com

We declares that the mentioned products comply with applicable requirements in following EU-directives / UK-regulations:
Vi försäkrar att nämnda produkter uppfyller tillämpliga bestämmelser i följande EU / UK-direktiv:

- **LVD Directive 2014/35/EU**
- **EMC Directive 2014/30/EU**
- **ATEX Directive 2014/34/EU**
- **RoHS Directive 2011/65/EU**
- **Electromagnetic Compatibility Regulations 2016**
- **Electrical Equipment (Safety) Regulations 2016**

The following harmonized standards are applied in applicable parts:
Tillämpliga delar av följande harmoniserade standarder tillämpas:

EN 60079-0:2018	Ex-General requirements
EN 60079-7:2015+A1:2018	Ex-Increased safety “e”
EN 55014-1:2006+A1:2009+A2:2011	EMC-Emission
EN 55014-2:2015	EMC-Immunity
EN 61000-3-3:2013	EMC-Immunity
EN 61000-3-11:2000	EMC-Immunity
EN 60335-1:2012+A11:2014	Electrical safety
EN 60335-2-30:2009+A11:2012	Electrical safety
EN 62233:2008	EMF-electromagnetic field

Additional information
Övrig information

Ex II 2 G Ex db eb mb IIC T3 Gb
-50°C ≤ Ta ≤ +40°C

EU Quality Assurance Notification no. ETL21ATEXQ0147. Notified body: 2903
UK Quality Assurance Notification no. ITS21UKQAN0357. Approved body: 0359
EU Certificate no. ITS10ATEX36956X. Notified body: 2903
UK Certificate no. ITS21UKEX0246X. Approved body: 0359

Hässleholm 2022-04-29

Mikael Isaksson / Quality Manager

DoC Atex-07.docx

EU TYPE-EXAMINATION CERTIFICATE

1. **EU type-examination Certificate (Module B)**
2. **Equipment or Protective System intended for use in potentially explosive atmospheres (Directive 2014/34/EU)**
3. **EU type examination certificate Nr** **ITS10ATEX36956X R.0**
4. **Product:** VFL-Ex, VTL-Ex & VRA-Ex and VFL2-Ex, VTL2-Ex & VRA2-Ex Electrical Duct Heaters
5. **Manufacturer:** VEAB Heat Tech AB **Applicant:** VEAB Heat Tech AB
6. **Address:** Stattenavägen 50, SE-28133 Hässleholm, Sweden **Address:** Stattenavägen 50, SE-28133 Hässleholm, Sweden
7. This product and any acceptable variation thereto are specified in the schedule to this certificate and therein referred to.
8. INTERTEK ITALIA S.p.A., Notified Body n° 2575 in accordance with article 17 of the Directive 2014/34/EU of the European Parliament and Council of the 26 February 2014, certifies that the equipment or protective system has been found to comply with the essential Health and Safety Requirements relating to the design and construction of equipment and protective system intended for use in potentially explosive atmosphere, given in Annex II of the Directive.

   The examination and tests results are recorded in confidential technical evaluation Intertek Report Nr. 09041188A1 dated January 2012, 101933188MAN-001 dated January 2016, G102599932 dated June 2016 and 104695834CHE-001 dated 14 September 2021.
9. Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN IEC 60079-0:2018 and EN IEC 60079-7:2015+A1:2018 except in respect of those requirements referred to at item 16 of the Schedule.
10. If the sign X is placed after the certificate number, it indicates that the product 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 construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.
12. The marking of the product shall include the following:

II 2 G Ex db eb mb IIC T3 Gb
Tamb: -20°C ≤ Ta ≤ +40°C (VFL-Ex & VTL-Ex and VRA-Ex)
Tamb: -50°C ≤ Ta ≤ +40°C (VFL2-Ex, VTL2-Ex and VRA2-Ex)

Certificate issue date

18th October 2021

Mark Newman
Certification Officer
Intertek Italia S.p.A. (NB 2575)

PDR N° 277B

Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC

Signatory of EA, IAF and ILAC Mutual Recognition Agreements

This certificate has been issued by Intertek Italia S.p.A. NB 2575 on transfer from Intertek Testing & Certification Ltd. (NB 0359) using the same issued original certificate number.

This Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.

SCHEDULE

EU TYPE EXAMINATION CERTIFICATE NUMBER: ITS10ATEX36956X R.0

13. **DESCRIPTION OF THE EQUIPMENT OR PROTECTIVE SYSTEM**

The VFL-Ex, VTL-Ex & VRA-Ex and VFL2-Ex, VTL2-Ex & VRA2-Ex enclosures consist of a hinged enclosure and duct which varies from KB = 200mm, KH = 200mm, KD = 270mm to KB = 3000mm, KD = 2000mm. The enclosure is manufactured from stainless steel and is used to house suitably certified Ex e terminals and Ex d temperature control, anti-condensation heater including thermostat. In addition, the heater elements are partly housed inside the enclosure and electrical connections are made here.

Their elements protrude through the enclosure wall into the air flow.
Both internal and external earthing is provided.

“Ex db” and “Ex mb” are included in the coding as the equipment utilises “Ex db” and “Ex mb” certified parts.

CE Marking shall be accompanied by the identification number of the Notified Body responsible for surveillance of production.

SCHEDULE

EU TYPE EXAMINATION CERTIFICATE NUMBER: ITS10ATEX36956X R.0

14. **DRAWINGS AND DOCUMENTS**

TITLE	DOCUMENT Nr	LEVEL	DATE
Heater Ex Type Lable layout	55323	10	2021-06-23
Duct heater VTL2-Ex General drawing	58208	3	2021-07-05
Duct heater VRA2-Ex General drawing	58207	3	2021-07-05
Duct heater VFL2-Ex General drawing	58206	3	2021-07-05
Duct heater Ex Junction box with Silicone rubber Subassembly drawing	57944	4	2021-07-05
Duct heater Ex Junction box with hinge general drawing	55910	1	2015-08-28
Duct heater VTL-Ex 0359 CE Ex II 2 G Ex de IIC T3 Gb General drawing	58218	1	2015-09-01
Duct heater VRA-Ex 0359 CE Ex II 2 G Ex de IIC T3 Gb General drawing	58217	1	2015-09-01
Duct heater VFL-Ex 0359 CE Ex II 2 G Ex de IIC T3 Gb General drawing	55902	4	2014-11-14
EX heater Wiring example	54134	6	160516
Dust heater ATEX approved Electrical connection heating element	54299	4	2021-06-28
Duct Heater VTL-Ex 0359 CE Ex II 2 G Ex de IIC T3 Gb General drawing	54742	7	2014-09-19
Duct Heater VRA-Ex 0359 CE Ex II 2 G Ex ed IIC T3 Gb General drawing	54743	7	2014-09-19
Duct Heater Ex Junction Box General drawing	55006	4	2011-12-19
Duct Heater Ex Sealing profile industrilas P/N 427051	55223	1	111017
Warning Lable “Do not open when energized”	58751	-	2016-07-15
Duct Heater EX placing of temperature controller Bulb	55689	3	210312
Duct heating EX resistance Heat elements (Ω) at 20C	55478	1	2012-01-25
INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTION ATEX/UKEX approved electrical air heaters for explosive gas atmospheres.	173062-04	-	As Stamped

Copies of the above listed documents are kept at Intertek Italia S.p.A. archive.

SCHEDULE

EU TYPE EXAMINATION CERTIFICATE NUMBER: ITS10ATEX36956X R.0

15. **SPECIAL CONDITIONS FOR SAFE USE**

- All power supplies must be fed via an interlock as indicated in the wiring diagrams of the manual.
- The duct heater must never be mounted with the enclosure placed at the bottom.
- The maximum surface load on the heating elements is 1.0W/cm.
- The manufacturers operating, and maintenance instructions shall always be followed.
- Temperatures could exceed 70°C at the cable gland or 80°C at the branching point, suitably rated cable must be selected.
- No batteries or cells are to be fitted inside the enclosure.
- Heating elements shall be protected from mechanical impact.
- Suitably approved Ex eb IIC Gb -20°C ≤ Ta ≤ +40°C (V**2-Ex -50°C ≤ Ta ≤ +40°C), cable glands and blanking elements only to be used.
- The two over temperature sensors shall be fitted to power step 1. Power step 1 shall be the first to be energized when required for operation.
- Two over temperature sensors shall be fitted in the last row of the air flow direction.
- Unit to be fitted with a current or resistance safety device per clause 5.8.6.2 of EN IEC 60079-7:2015+A1:2018.

16. **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**

The relevant essential Health and Safety Requirements have been identified and assessed in Intertek Report Nr. 104695834CHE-001 dated 14 September 2021.

17. **ROUTINE (FACTORY) TESTS**

- A routine dielectric strength test in accordance with clause 6.1 of EN IEC 60079-7:2015+A1:2018 shall be carried out between the case and enclosure terminals. All results must be recorded.

18. **DETAILS OF CHANGE**

18th October 2021 (R.0):

- Initial release by Intertek Italia S.p.A. NB 2575 based on the assessment performed September 2021 and, on the certificate, legal ownership transferred from Intertek Testing & Certification Ltd. (NB 0359); the same issued original certificate number is used.
- Update to latest harmonized standards; EN 60079-0:2012+A11:2013 to EN IEC 60079-0:2018 and EN 60079-7:2015 to EN IEC 60079-7:2015+A1:2018.
- Addition of UKEX based off existing ATEX certification.
- Changing the placement of the capillary tube.
- Inclusion of a washer on the element electrical connection tips to comply with the creepage and clearance distances required by EN 60079-7. (Drawing number 54299 details that the distance is at least 6mm between the live and grounded section).

UK-TYPE EXAMINATION
CERTIFICATE

Product or Protective Systems Intended for Use in Potentially Explosive Atmospheres

UKSI 2016:1107 (as amended) – Schedule 3A, Part 1

1. **UK-Type Examination Certificate Number:** **ITS21UKEX0246X** **Issue 00**
2. **Product:** VFL2-Ex, VTL2-Ex & VRA2-Ex Electrical Duct Heaters
3. **Manufacturer:** VEAB Heat Tech AB
4. **Address:** Stattenavägen 50, SE-28133 Hässleholm, Sweden
5. This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
6. Intertek Testing and Certification Limited, Approved Body number 0359, in accordance with Regulation 42 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended), certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Schedule 1 of the Regulations.

   The examination and test results are recorded in the confidential report 09041188A1 dated January 2012, 101933188MAN-001 dated January 2016, G102599932 dated June 2016 and 104695834CHE-001 dated 14 September 2021.
7. Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN IEC 60079-0:2018 and EN IEC 60079-7:2015+A1:2018 except in respect of those requirements referred to within item 14 of the Schedule.
8. If the sign "X" is placed after the certificate number, it indicates that the product is subject to the special conditions of use specified in the Schedule to this certificate.
9. This UK-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Regulations apply to the manufacturing process and supply of this product. These are not covered by this certificate.
10. The marking of the product shall include the following:

    II 2 G Ex db eb mb IIC T3 Gb

    -50°C ≤ Ta ≤ +40°C

Certification Officer: M Newman **Date:** 18th October 2021

This Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. This Certificate is accredited under UKAS schedule 0010
Intertek Testing & Certification Limited, Cleeve Road, Leatherhead, Surrey, KT22 7SA
Registered No 3272281 Registered Office: Academy Place, 1-9 Brook Street, Brentwood, Essex, CM14 5NQ.

SCHEDULE:

UK-Type Examination Certificate Number: ITS21UKEX0246X Issue 00

11. Description of Product or Protective System

The VFL2-Ex, VTL2-Ex & VRA2-Ex enclosures consist of a hinged enclosure and duct which varies from KB = 200mm, KH = 200mm, KD = 270mm to KB = 3000mm, KD = 2000mm. The enclosure is manufactured from stainless steel and is used to house suitably certified Ex e terminals and Ex d temperature control, anti-condensation heater including thermostat. In addition, the heater elements are partly housed inside the enclosure and electrical connections are made here.

Their elements protrude through the enclosure wall into the air flow.

Both internal and external earthing is provided.

“Ex db” and “Ex mb” are included in the coding as the equipment utilises “Ex db” and “Ex mb” certified parts.

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Registered No 3272281 Registered Office: Academy Place, 1-9 Brook Street, Brentwood, Essex, CM14 5NQ.

12. Report Number

Intertek Report: 09041188A1 dated January 2012, 101933188MAN-001 dated January 2016, G102599932 dated June 2016 and 104695834CHE-001 dated 21 September 2021.

13. Special Conditions of Certification

(a). Special Conditions of Use

• All power supplies must be fed via an interlock as indicated in the wiring diagrams of the manual.

• The duct heater must never be mounted with the enclosure placed at the bottom

• The maximum surface load on the heating elements is 1.0W/cm.

• The manufacturers operating, and maintenance instructions shall always be followed.

• Temperatures could exceed 70°C at the cable gland or 80°C at the branching point, suitably rated cable must be selected.

• No batteries or cells are to be fitted inside the enclosure.

• Heating elements shall be protected from mechanical impact.

• Suitably approved Ex eb IIC Gb -50°C ≤ Ta ≤ +40°C cable glands and blanking elements only to be used.

• The two over temperature sensors shall be fitted to power step 1 Power step 1 shall be the first to be energized when required for operation.

• Two over temperature sensors shall be fitted in the last row of the air flow direction (as shown below)

• Unit to be fitted with a current or resistance safety device per clause 5.8.6.2 of 60079-7:2015+A1:2018.

(b). Conditions of Manufacture

• A routine dielectric strength test in accordance with clause 6.1 of EN 60079-7:2015+A1:2018 shall be carried out between the case and enclosure terminals. All results must be recorded.

14. Essential Health and Safety Requirements (EHSRs)

The relevant Essential Health and Safety Requirements (EHSRs) have been identified and assessed in Intertek Report: 104695834CHE-001, dated 14 September 2021.

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Registered No 3272281 Registered Office: Academy Place, 1-9 Brook Street, Brentwood, Essex, CM14 5NQ.

15. Drawings and Documents

Title:	Drawing No.:	Rev. Level:	Date:
Heater Ex Type Lable layout	55323	10	2021-06-23
Duct heater VTL2-Ex General drawing	58208	3	2021-07-05
Duct heater VRA2-Ex General drawing	58207	3	2021-07-05
Duct heater VFL2-Ex General drawing	58206	3	2021-07-05
Duct heater Ex Junction box with Silicone rubber Subassembly drawing	57944	4	2021-07-05
Duct heater Ex Junction box with hinge general drawing	55910	1	2015-08-28
Duct heater VTL-Ex 0359 CE Ex II 2 G Ex de IIC T3 Gb General drawing	58218	1	2015-09-01
Duct heater VRA-Ex 0359 CE Ex II 2 G Ex de IIC T3 Gb General drawing	58217	1	2015-09-01
Duct heater VFL-Ex 0359 CE Ex II 2 G Ex de IIC T3 Gb General drawing	55902	4	2014-11-14
EX heater Wiring example	54134	6	160516
Dust heater ATEX approved Electrical connection heating element	54299	4	2021-06-28
Duct Heater VTL-Ex 0359 CE Ex II 2 G Ex de IIC T3 Gb General drawing	54742	7	2014-09-19
Duct Heater VRA-Ex 0359 CE Ex II 2 G Ex ed IIC T3 Gb General drawing	54743	7	2014-09-19
Duct Heater Ex Junction Box General drawing	55006	4	2011-12-19
Duct Heater Ex Sealing profile industrilas P/N 427051	55223	1	111017
Warning Lable “Do not open when energized”	58751	-	2016-07-15
Duct Heater EX placing of temperature controller Bulb	55689	3	210312
Duct heating EX resistance Heat elements (Ω) at 20C	55478	1	2012-01-25
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Registered No 3272281 Registered Office: Academy Place, 1-9 Brook Street, Brentwood, Essex, CM14 5NQ.

Originalspråk svenska

Original language swedish

NB: We reserve us from typographical errors and the right to make changes and improvements to the contents of this manual without prior notice.

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