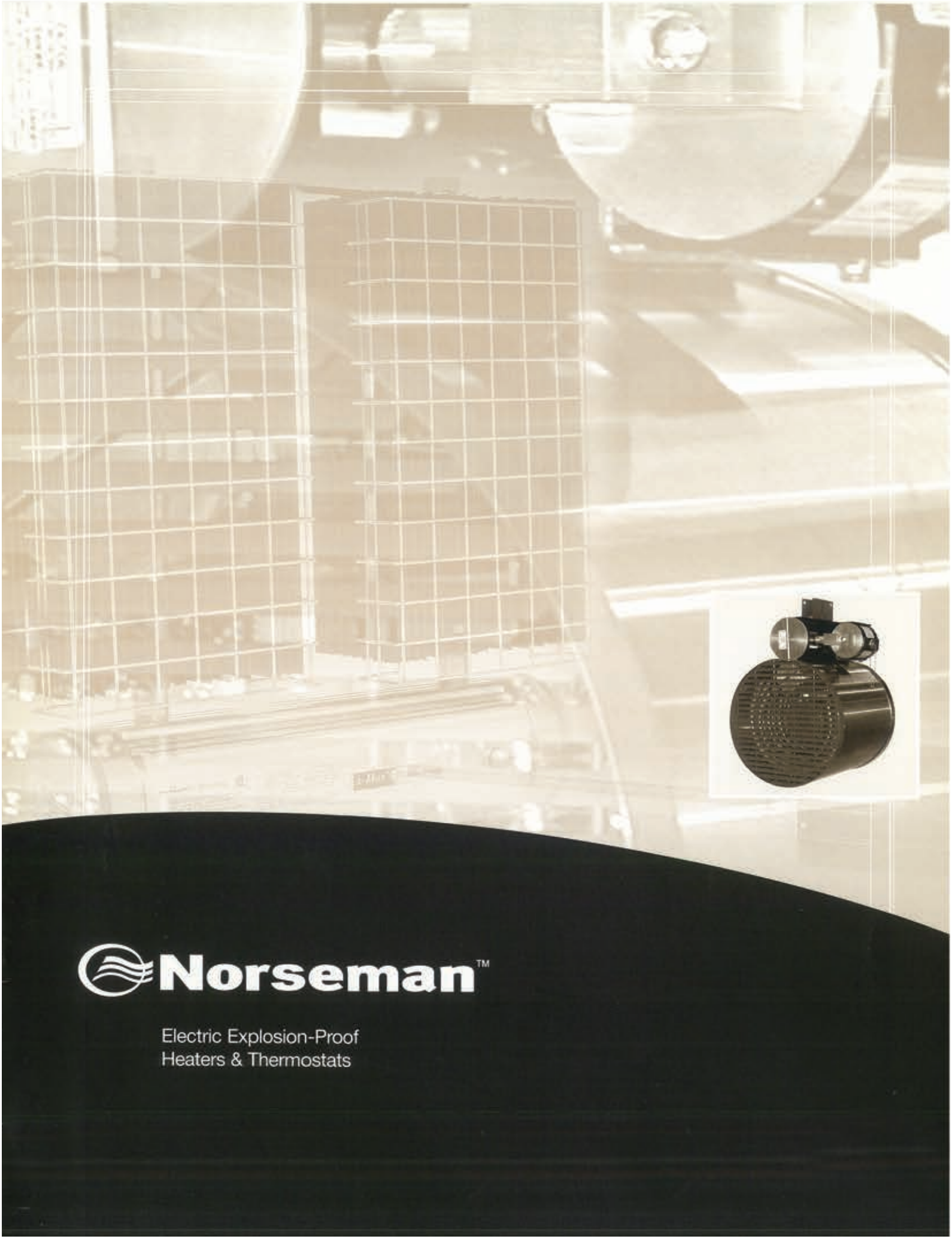


Norseman™

Electric Explosion-Proof
Heaters & Thermostats

Contents

Manufactures the complete line of Norseman™ explosion-proof electric air heaters and thermostats. Norseman™ heaters and thermostats provide innovative, low maintenance solutions for a wide range of applications. The complete line of Norseman™ explosion-proof heaters includes:

XGB Unit Heater

XB Convection Heater

XR Convection Heater

XP Convection Heater

XT Thermostats

Standard Features

Flexibility in application and design. From panel heaters to unit heaters, the Norseman™ line provides innovative forced air or natural convection solutions to your hazardous area heating requirements, Custom engineered units are available across a wide range of wattages for specialized applications. Our qualified sales staff are ready to provide the solution that's right for your needs.

Durable construction. With anodized, copper-free aluminum housings and heat sinks, and nickel plated, low watt-density elements the Norseman™ line of electric explosion-proof heaters is designed to provide years of reliable, low maintenance service.

Simplified wiring. To facilitate installation, Norseman™ heaters employ the patented ***x-Max***® housing with screw on covers and slide out terminal block trolley.

Explosion-Proof *x-Max*® Terminal Housing

Explosion-proof terminal housing features the unique ***x-Max***® "Track and Trolley" system. Typical uses include: as a terminal enclosure, a control station, a junction box, or it can be adapted for use in custom engineered applications. Five standard diameters, offered in lengths up to 38 in. (965 mm), can cover most of your explosion-proof housing requirements. No longer is it necessary to remove dozens of bolts to gain access to housing components for installation, adjustment or servicing. With longer type XH housings, components are mounted to the trolley. To service, simply unscrew the end cover and slide the trolley out of the enclosure.

The "Track and Trolley" wiring system allows the user to mount all electrical components to an aluminum "Trolley", make all wiring connections outside of the enclosure, and simply slide the "Trolley" along the extruded "Track". Series 1 and 2 housings use extruded aluminum trolleys and Series 3, 4, and 5 housings use trolleys made from 14 ga. sheet metal.

Applications

Norseman™ explosion-proof heaters are available for almost all hazardous location requirements. Typical applications for Norseman™ explosion-proof heaters include:

- **Oil platforms and refineries**
- **Control cabinets and small enclosures**
- **Storage rooms for paints and cleaners**
- **Grain elevators**
- **Flour mills**
- **Spray booths**
- **Gas plants**
- **Pump houses**
- **Marine and offshore**
- **Cleaning and dyeing plants**
- **Water and sewage treatment plants**
- **Compressor stations**
- **Pulp and paper mills**
- **Cement plants**

Atmospheric Conditions and Temperature Codes

The information listed is to be used only as a general guide. Please contact us to check the suitability of the Norseman™ heater for your needs.

For detailed information concerning the installation of electrical equipment in hazardous locations, refer to either the Canadian Electrical Code Part 1 Section 18, available from CSA International, or the National Electrical Code Chapter 5 Articles 500 through 503, available from the National Fire Protection Association.

Where electrical equipment is required by Section 18 or Chapter 5 to be approved for the class of location, it shall also be approved for the specific gas, vapor, or dust that will be present. Such approval may be indicated by one or more atmospheric group designations which have been established for the purposes of testing and approval.

Note that the maximum external temperature of the equipment shall not exceed the minimum ignition temperature of the atmosphere as listed in Table 2.

For example: Assume the maximum heater temperature is listed as T2C or 230°C (446°F). This heater would not be suitable for use in atmospheres containing octanes but would be suitable for use in atmospheres containing gasoline.

For octanes, select a heater having a temperature code that does not exceed 206°C (403°F).

TABLE 1 Equipment Maximum Temperature

T-Code USA	Maximum Surface Temperature	T-Code Europe
T1	450°C/842°F	T1
T2	300°C/572°F	T2
T2A	280°C/536°F	-
T2B	260°C/500°F	-
T2C	230°C/446°F	-
T2D	215°C/419°F	-
T3	200°C/392°F	T3
T3A	180°C/356°F	-
T3B	165°C/329°F	-
T3C	160°C/320°F	-
T4	135°C/275°F	T4
T4A	120°C/248°F	-
T5	100°C/212°F	T5
T6	85°C/185°F	T6

TABLE 2 Atmospheric Conditions

Atmosphere	Minimum Ignition Temperature Limit
Group A Containing Group IIC	
acetylene	305°C/581°F
Group B Containing Group IIC	
butadiene	420°C/788°F
ethylene oxide	429°C/804°F
hydrogen manufactured gases containing more than 30%	500°C/932°F
hydrogen (by volume)	500°C/932°F
propylene oxide	499°C/930°F
Group C Containing Group IIB	
acetaldehyde	175°C/347°F
cyclopropane	498°C/928°F
diethyl ether	160°C/320°F
ethylene	450°C/842°F
unsymmetrical dimethyl hydrazine (UDMH 1, 1-dimethyl hydrazine)	249°C/480°F
Group D Containing Group IIA	
acetone	465°C/869°F
acrylonitrile	481°C/898°F
alcohol (see ethyl alcohol)	
ammonia	651°C/1204°F
benzene	498°C/928°F
benzine (see petroleum naphtha)	
benzol (see benzene)	
butane	287°C/549°F
1-butanol (butyl alcohol)	343°C/649°F
2-butanol (secondary butyl alcohol)	405°C/761°F
butyl acetate	425°C/797°F
isobutyl acetate	421°C/790°F
ethane	472°C/882°F
ethanol (ethyl alcohol)	363°C/685°F
ethyl acetate	426°C/799°F
ethylene dichloride	413°C/775°F
gasoline	280°C/536°F

Atmosphere	Minimum Ignition Temperature Limit
Group D Containing Group IIA (continued)	
heptanes	204°C/399°F
hexanes	223°C/433°F
isoprene	395°C/743°F
methane	537°C/999°F
methanol (methyl alcohol)	385°C/725°F
3-methyl-1-butanol (isoamyl alcohol)	350°C/662°F
methyl ethyl ketone	404°C/759°F
methyl isobutyl ketone	448°C/838°F
2-methyl-1-propanol (isobutyl alcohol)	415°C/779°F
2-methyl-2-propanol (tertiary butyl alcohol)	478°C/892°F
naphtha (see petroleum naphtha)	
natural gas	482°C/900°F
octanes	206°C/403°F
pentanes	260°C/500°F
1-pentanol (amyl alcohol)	300°C/572°F
petroleum naptha	288°C/550°F
propane	432°C/810°F
1-propanol (propyl alcohol)	412°C/774°F
2-propanol (isopropyl alcohol)	399°C/750°F
propylene	455°C/851°F
styrene	490°C/914°F
toluene	480°C/896°F
vinyl acetate	402°C/756°F
vinyl chloride	472°C/882°F
xylenes	463°C/865°F

Group E Comprising

Atmospheres containing metal dust, including aluminum, magnesium, and their commercial alloys, and other metals of similarly hazardous characteristics.

Group F Comprising

Atmospheres containing carbon black, coal, or coke dust.

Group G Comprising

Atmospheres containing flour, starch, or grain dust, and other dusts of similarly hazardous characteristics.

Product Description

Presents the Norseman™ XGB, a hazardous environment heater designed to accommodate your requirements with flexibility and ease of maintenance, even under the toughest conditions.

Norseman™ XGB unit heaters are available in two sizes, small cabinet units with ratings of up to 10 kW and large cabinet units with ratings of up to 35 kW.

The XGB is designed specifically for heating industrial spaces where potentially explosive substances are or may be present. Typical hazardous location environments include:

Water and sewage treatment plants

Oil refineries

Compressor stations

Pulp and paper mills

Paint storage booths

Cement plants

Mines

Marine and offshore

Flow adjustment. In structures with high ceilings, other units may not have the range of motion needed to direct air flow to the floor. The XGB allows the unit to be tilted at a 30° angle below the horizontal. For lateral airflow, the entire louvre assembly can be rotated 90°.

No conduit seal required. A factory installed conduit seal provides the necessary isolation between the supply and control housings. In Division 2, Zone 2 applications, a field installed conduit seal may not be required.

Simplified wiring. To facilitate installation, the Norseman™ explosion-proof unit heaters feature patented ***x-Max***® housing with slide out terminal block trolley for connection of the electrical supply.

Certification

Certified by CSA to Canadian and US standards, with standard models approved for the following:

Class I, Division 1 & 2, Groups C & D

Class II, Division 1 & 2, Groups E, F & G

Note 1: Can make XGBs for: B, C, D, E, F and G, 60 Hz and 50 Hz. (Group B and 50 Hz constructions available on large cabinet construction only.)

Note 2: Class II and some atmospheric groups are not available in every kW rating.

TABLE 3 The Norseman™ XGB Unit Heaters

Small Cabinet Units

Part #	kW Btu/hr	V	Approx. CFM (liters/s)	Approx. Temp Rise °F	(°C)	Temperature Code T2C	T2D	T3A	T3B	Class I Div. 1 & 2 C	D	Class II Div. 1 & 2 E	F	G	Maximum Line Amps 1Ø	3Ø	Recommended Fuse Size (Amps) 1Ø	3Ø
XGB038T3B	3.75	208		13	(7.4)	✓	✓	✓	✓	-	✓	✓	✓	✓	19	11	25	15
XGB038T3B	(12795)	240				✓	✓	✓	✓	-	✓	✓	✓	✓	17	10	25	15
XGB038T3B		480				✓	✓	✓	✓	-	✓	✓	✓	✓	-	6	-	10
XGB038T3B		600	850			✓	✓	✓	✓	-	✓	✓	✓	✓	-	5	-	10
XGB050T3B	5	208	(400)	18	(9.8)	✓	✓	✓	✓	-	✓	✓	✓	✓	25	15	35	20
XGB050T3B	(17060)	240				✓	✓	✓	✓	-	✓	✓	✓	✓	22	13	30	20
XGB050T3B		480				✓	✓	✓	✓	-	✓	✓	✓	✓	-	7	-	10
XGB050T3B		600				✓	✓	✓	✓	-	✓	✓	✓	✓	-	6	-	10
XGB075T3A	7.5	208		23	(12.5)	✓	✓	✓	-	-	✓	-	-	-	37	22	50	30
XGB075T3A	(25590)	240				✓	✓	✓	-	-	✓	-	-	-	32	19	40	25
XGB075T3A		480				✓	✓	✓	-	-	✓	-	-	-	-	10	-	15
XGB075T3A		600	1000			✓	✓	✓	-	-	✓	-	-	-	-	8	-	10
XGB100T2C	10	208	(470)	30	(16.7)	✓	-	-	-	-	✓	-	-	-	-	29	-	40
XGB100T2C	(34120)	240				✓	-	-	-	-	✓	-	-	-	43	25	60	35
XGB100T2C		480				✓	-	-	-	-	✓	-	-	-	-	13	-	20
XGB100T2C		600				✓	-	-	-	-	✓	-	-	-	-	11	-	15

Large Cabinet Units

XGB100T3B	10	208		16	(9.0)	✓	✓	✓	✓	✓	✓	-	✓	✓	-	30	-	40
XGB100T3B	(34120)	240				✓	✓	✓	✓	✓	✓	-	✓	✓	47	26	60	35
XGB100T3B		480				✓	✓	✓	✓	✓	✓	-	✓	✓	-	13	-	20
XGB100T3B		600				✓	✓	✓	✓	✓	✓	-	✓	✓	-	11	-	15
XGB150T3B	15	208		24	(13.5)	✓	✓	✓	✓	✓	✓	-	✓	✓	-	44	-	60
XGB150T3B	(51180)	240				✓	✓	✓	✓	✓	✓	-	✓	✓	-	38	-	50
XGB150T3B		480				✓	✓	✓	✓	✓	✓	-	✓	✓	-	19	-	25
XGB150T3B		600				✓	✓	✓	✓	✓	✓	-	✓	✓	-	15	-	20
XGB200T3B	20	480	1850	32	(17.8)	✓	✓	✓	✓	✓	✓	-	✓	✓	-	25	-	35
XGB200T3B	(68240)	600	(870)			✓	✓	✓	✓	✓	✓	-	✓	✓	-	20	-	25
XGB225T3B	22.5	480		36	(20.0)	✓	✓	✓	✓	✓	✓	-	✓	✓	-	28	-	35
XGB225T3B	(76770)	600				✓	✓	✓	✓	✓	✓	-	✓	✓	-	23	-	30
XGB250T3A	25	480		41	(22.8)	✓	✓	✓	-	✓	✓	-	-	-	-	31	-	40
XGB250T3A	(85300)	600				✓	✓	✓	-	✓	✓	-	-	-	-	25	-	35
XGB300T2D	30	480		49	(27.2)	✓	✓	-	-	✓	✓	-	-	-	-	37	-	50
XGB300T2D	(102360)	600				✓	✓	-	-	✓	✓	-	-	-	-	30	-	40
XGB350T2C	35	480		57	(31.5)	✓	-	-	-	✓	✓	-	-	-	-	43	-	60
XGB350T2C	(119420)	600				✓	-	-	-	✓	✓	-	-	-	-	34	-	45

Standard Features

Small Cabinet

- 1/12 hp explosion-proof motor
- Inlet wire guard
- Extra heavy wall tubular steel finned heating elements with nickel plated finish
- Patented *x-Max*® explosion-proof terminal housing
- 120 V control circuit includes:
  - Derated magnetic contactor
  - Dual automatic reset high limits
  - Transformer
- Heavy duty 16 ga. stainless steel casing
- Outlet louvre assembly
- Swivel bracket
- Factory installed conduit seal
- Supply connection housing
- Terminal block for supply wiring and thermostat connection

Large Cabinet

- 1/2 hp explosion-proof motor
- Inlet wire guard/motor mount
- Extra heavy wall tubular steel finned heating elements with nickel plated finish
- Patented *x-Max*® explosion-proof terminal housing
- 120 V control circuit includes:
  - Derated magnetic contactor
  - Dual automatic resent high limits
  - Transformer
  - Fan delay relay
  - Control fuse
- Heavy duty 16 ga. stainless steel casing
- Outlet louvre assembly
- Swivel bracket
- Factory installed conduit seal
- Supply connection housing
- Terminal block for supply wiring and thermostat connection

Optional Features

- Built-in, externally adjustable thermostat
- Built-in disconnect switch
- Moisture-resistant construction
- “Auto/off/fan only” switch
- Pilot light
- Manual reset high limit
- Arctic Duty design
- Class I, Division 2, Groups B, C & D design available on request
- Group E
- 50 Hz construction

Mounting Accessories: Ceiling mount kit; Wall mount kit; Post mount kit; Floor stand kit

Note: Not all options are available on all models or kW ratings. Check factory for options and construction availability prior to ordering.

Thermostats

Offers a wide variety of explosion-proof thermostats to suit most every need. Norseman™ unit heaters are available with optional built-in, externally adjustable, bulb-type thermostats. Thermostats for remote mounting can be provided upon request.

Motors

Fractional horsepower, 1725 rpm explosion-proof motor with double shielded ball bearings and built-in thermal overload. Small cabinet units use 1/12 hp motor approved for Class I, Group D; Class II, Groups E, F, and G. Large cabinet units use 1/2 hp motor approved for Class I, Groups C and D; Class II, Groups F and G, as standard.

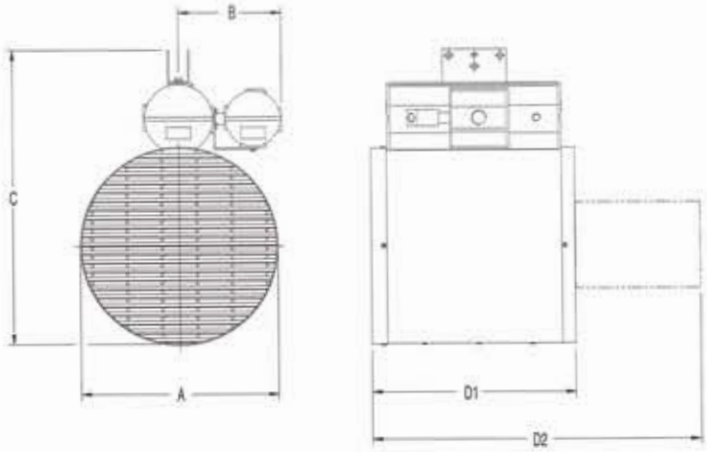
TABLE 4 Heater Dimensions: inches (mm)

	A	B	C	D1	D2
Small Cabinet	16-7/8 (429)	8-7/8 (225)	25-3/16 (640)	17-1/2 (445)	-
Large Cabinet	20-1/8 (511)	8-7/8 (225)	29-1/4 (743)	-	31-1/4 (794)

TABLE 5 Heater Weight

	kW Rating	Heater Weight lbs (kg)	Shipping Weight lbs (kg)
Small Cabinet	3.75 to 10	100 (45)	110 (50)
Large Cabinet	10 to 15	145 (66)	182 (83)
	20 to 35	185 (84)	222 (101)

FIGURE 1 XGB Dimensions



Temperature Control

Built-In Thermostat (Optional)

When specified, the unit comes equipped with a built-in thermostat prewired to all other standard controls. Set the temperature to the desired operating condition.

Remote Thermostat (Optional)

Install the XT thermostat in accordance with the instruction sheet provided. Terminals "T1" and "T2" in the heater supply housing are provided for connection to a remote thermostat and are prewired to the rest of the control circuit. Remove the jumper wire between "T1" and "T2" and connect the thermostat to these terminals. Set the temperature to the desired operating condition.

"Auto/Off/Fan-Only Switch" (Optional)

If ordered, a factory installed "auto/off/fan-only" switch may be included on the heater. The "fan-only" feature allows the heater to cycle in a "heat" mode dictated by the controlling thermostat, even though the fan is operating continuously.

Manual Reset High-Limit (Optional)

If it is required, the heater can be equipped with one manual reset high-limit. This manual reset high-limit is installed in lieu of one of the auto-rest high-limits. Normal operation of the heater remains the same unless the manual reset high-limit trips, in which case the limit must be re-set manually.

FIGURE 2 Ceiling Mounting

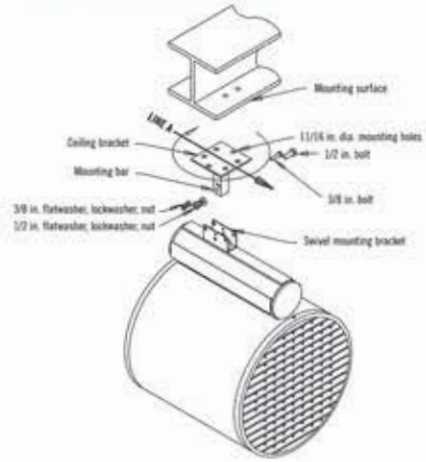
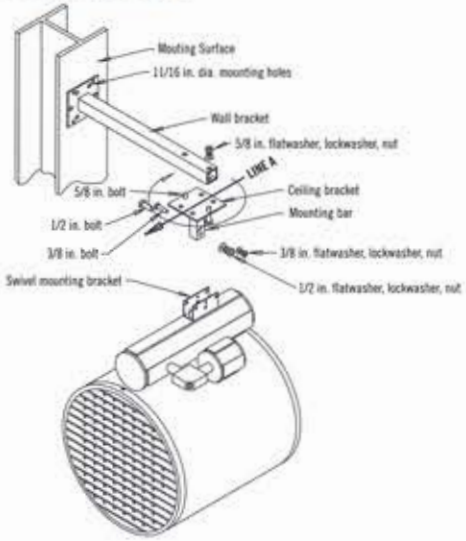


FIGURE 3 Wall Mounting



Important: Proper motor/fan rotation, viewed from the rear of the heater, is counter-clockwise for small cabinet heaters and clockwise for the large cabinet units, as indicated by the fan rotation label on the heater. Incorrect rotation of the fan will cause the heater to overheat and cycle on the high limits. Consult factory in case of incorrect rotation.

FIGURE 4 Post Mounting

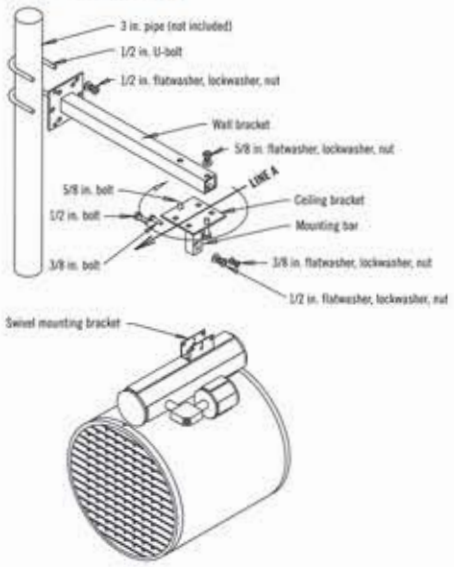


FIGURE 5 Floor Stand Mounting

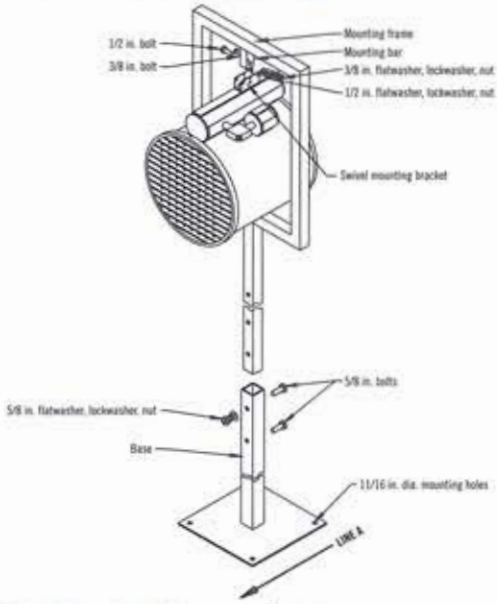


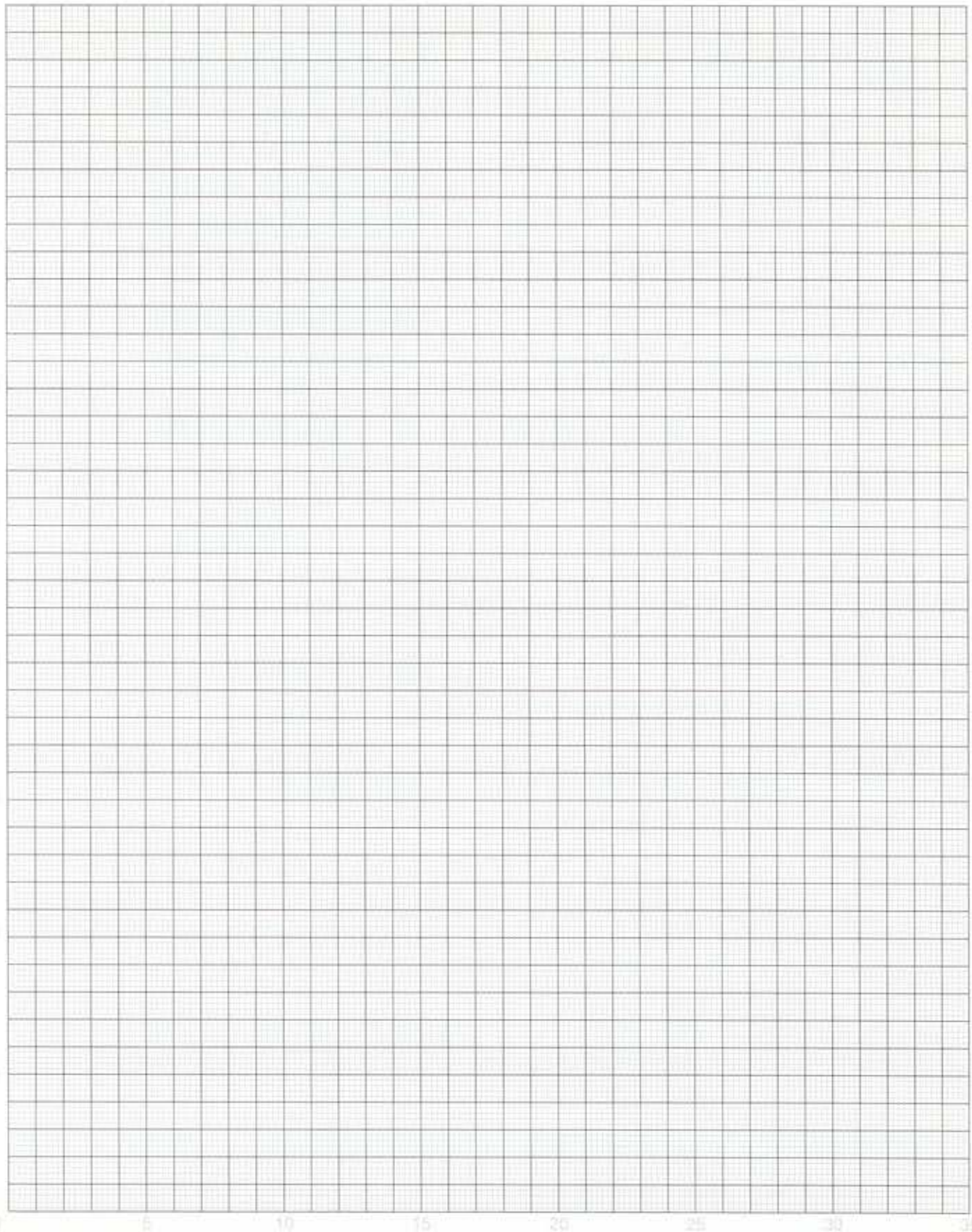
TABLE 6 Mounting Accessories

Part #	Description
AC-CM-01	Ceiling mount kit
AC-WM-01	Wall mount kit
AC-PM-01	Post mount kit
AC-FMS-01	Floor stand kit

Outlet Louvres

A louvred grille on the heater outlet end is supplied as standard. The louver assembly may be positioned either horizontally or vertically for maximum flexibility.

NOTES:



Product Description

The XB, with ratings up to 5000 watts, is designed for heating spaces where explosive substances are or may be present. The XB is available with either CSA C / US or CE / ATEX approvals. All units can be fitted with an externally adjustable thermostat.

With the XB, you get a safe and reliable heater with a handsome appearance and state-of-the-art design.

Typical applications of the XB include:

- **Control cabinets and small enclosures**
- **Storage rooms for paints and cleaners**
- **Grain elevators**
- **Flour mills**
- **Spray booths**
- **Gas plants**
- **Pump houses**
- **Marine and offshore**
- **Oil platforms**
- **Cleaning and dyeing plants**

Selection of Temperature Code

Refer to the atmospheric condition table at the beginning of this section for detailed selection data for the temperature code.

To minimize cost and physical size of the heater, select the heater with the highest temperature code that suits the environment. In tables 7 and 8 a check mark (✓) under the temperature code indicates that the surface temperature of the heater will not exceed the coded value listed in the atmospheric conditions table at the beginning of this section.

Construction and Installation

The XP and XB explosion-proof convection heaters utilize unique copper free aluminum extruded convector and patented ***x-Max***® terminal housing. Large convector surface area and high mass fins ensure safe and efficient low temperature heat transfer to the environment. Convectors are black anodized to resist oxidation and maximize heat transfer.

The ***x-Max***® housing can be equipped with multiple tapped conduit entries throughout its length to facilitate installation. A track and trolley system and threaded covers at each end allow easy access to internal components. All units, except the single heat sink units, have a built-in terminal block for simplified electrical connection.

XB units are intended for wall or floor mounting with the heater positioned vertically as shown. Dual purpose brackets for floor or wall mounting and wire guards are supplied as standard.

Special Wattage and Lengths

The following table lists the maximum design wattages for the four standard heat sink lengths and configurations. If standard units listed in Table 12 do not suit your application, a special unit based on Table 13 can be supplied (check factory).

FIGURE 7
XB Single Unit (XB1-)

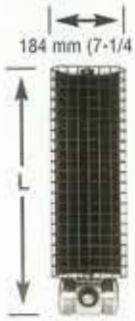


FIGURE 8
XB Double Unit (XB2-)

FIGURE 9
XB Triple Unit (XB3-)

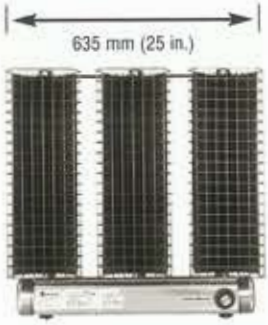
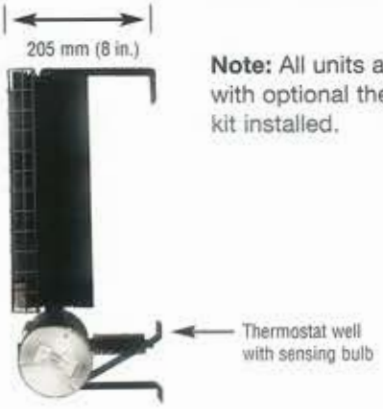


FIGURE 10
XB Quadruple Unit (XB4-)

FIGURE 11
XB Side View
Floor Mounting

FIGURE 12
XB Side View
Wall Mounting



Note: All units are shown with optional thermostat kit installed.

TABLE 8 XB Explosion-Proof Convection Heaters — Standard XB Heaters

Watts	Standard Voltages 120 1ø	208 1ø	208 3ø	240 1ø	240 3ø	480 1ø	480 3ø	600 1ø	600 3ø	L' Dimension mm(in.)	Temp Code T2D	T3B	T4A	T6	Weight lbs (kg)	Part # Class I Division 1, 2 Group A, B, C & D Class II Division 1, 2 Group E, F & G Class III Division 1	Class I Division 1 Group A, B, C & D
475	✓	✓	-	✓	-	-	-	-	-	254 (10.0)	✓	-	-	-	10 (4.5)	-	XB1-1047T2D
750	✓	✓	-	✓	-	-	-	-	-	424 (16.7)	✓	-	-	-	15 (6.8)	-	XB1-3075T2D
1000	✓	✓	-	✓	-	✓	-	✓	-	594 (23.4)	✓	-	-	-	20 (9.1)	-	XB1-4100T2D
1250	✓	✓	-	✓	-	✓	-	✓	-	765 (30.1)	✓	-	-	-	25 (11.3)	-	XB1-6125T2D
1500	✓	✓	✓	✓	✓	-	-	-	-	424 (16.7)	✓	-	-	-	30 (13.6)	-	XB2-3150T2D
2000	✓	✓	✓	✓	✓	✓	✓	✓	✓	594 (23.4)	✓	-	-	-	40 (18.1)	-	XB2-4200T2D
3000	✓	✓	✓	✓	✓	✓	✓	✓	✓	594 (23.4)	✓	-	-	-	60 (27.2)	-	XB3-4300T2D
3750	✓	✓	✓	✓	✓	✓	✓	✓	✓	765 (30.1)	✓	-	-	-	75 (34.0)	-	XB3-6375T2D
4500	-	✓	✓	✓	✓	✓	✓	✓	✓	765 (30.1)	✓	-	-	-	100 (45.4)	-	XB4-6450T2D

TABLE 9 XB Explosion-Proof Convection Heaters — Other Available XB Heaters

Watts	Standard Voltages 120 1ø	208 1ø	208 3ø	240 1ø	240 3ø	480 1ø	480 3ø	600 1ø	600 3ø	'L' Dimension mm(in.)	Temperature Code T2D	T3B	T4A	T6	Weight lbs (kg)	Part # Class 1 Division 1, 2 Group A, B, C & D Class II Division 1, 2 Group E, F & G Class III Division 1	Class I Division 1, 2 Group A, B, C & D
50	✓	-	-	-	-	-	-	-	-	254 (10.0)	✓	✓	✓	✓	10 (4.5)	XB1-1005T6	-
100	✓	-	-	-	-	-	-	-	-	254 (10.0)	✓	✓	✓	-	10 (4.5)	XB1-1010T4A	-
175	✓	-	-	-	-	-	-	-	-	254 (10.0)	✓	✓	✓	-	10 (4.5)	XB1-1017T4A	-
200	✓	✓	-	✓	-	-	-	-	-	765 (30.1)	✓	✓	✓	✓	25 (11.3)	XB1-6020T6	-
300	✓	-	-	-	-	-	-	-	-	254 (10.0)	✓	✓	-	-	10 (4.5)	XB1-1030T3B	-
400	✓	✓	✓	✓	✓	-	-	-	-	765 (30.1)	✓	✓	✓	✓	50 (22.7)	XB2-6040T6	-
450	✓	✓	-	✓	-	✓	-	✓	-	765 (30.1)	✓	✓	✓	-	25 (11.3)	XB1-6045T4A	-
475	✓	✓	-	✓	-	-	-	-	-	424 (16.7)	✓	✓	-	-	15 (6.8)	XB1-3047T3B	-
600	✓	✓	✓	✓	✓	-	-	-	-	765 (30.1)	✓	✓	✓	✓	75 (34.0)	XB3-6060T6	-
750	✓	-	-	-	-	-	-	-	-	254 (10.0)	✓	-	-	-	20 (9.1)	-	XB2-1075T2D
800	✓	✓	✓	✓	✓	-	-	-	-	765 (30.1)	✓	✓	✓	✓	100 (45.4)	XB4-6080T6	-
850	✓	✓	-	✓	-	✓	-	✓	-	765 (30.1)	✓	✓	✓	-	50 (22.7)	XB2-6085T4A	-
1000	✓	-	-	-	-	-	-	-	-	254 (10.0)	✓	-	-	-	30 (13.6)	-	XB3-1100T2D
1000	✓	✓	✓	✓	✓	-	-	-	-	594 (23.4)	✓	✓	-	-	40 (18.1)	XB2-4100T3B	-
1000	✓	✓	✓	✓	✓	-	✓	-	-	424 (16.7)	✓	✓	-	-	45 (20.4)	XB3-3100T3B	-
1250	✓	✓	✓	✓	✓	✓	✓	✓	✓	765 (30.1)	✓	✓	✓	-	75 (34.0)	XB3-6125T4A	-
1250	✓	-	-	-	-	-	-	-	-	254 (10.0)	✓	-	-	-	30 (13.6)	-	XB3-1125T2D
1350	✓	✓	-	✓	-	✓	-	✓	-	765 (30.1)	✓	-	-	-	25 (11.3)	-	XB1-6135T2D
1500	✓	-	-	-	-	-	-	-	-	254 (10.0)	✓	-	-	-	40 (18.1)	-	XB4-1150T2D
1500	✓	✓	✓	✓	✓	-	✓		✓	594 (23.4)	✓	✓	-	-	60 (27.2)	XB3-4150T3B	-
1500	✓	✓	✓	✓	✓	✓	✓	✓	✓	765 (30.1)	✓	✓	-	-	50 (22.7)	XB2-6150T3B	-
1600	✓	✓	✓	✓	✓	✓	✓	✓	-	765 (30.1)	✓	✓	✓	-	100 (45.4)	XB4-6160T4A	-
2000	✓	✓	✓	✓	✓	-	-	-	-	424 (16.7)	✓	-	-	-	45 (20.4)	-	XB3-3200T2D
2250	✓	✓	✓	✓	✓	-	-	-	-	594 (23.4)	✓	✓	-	-	80 (36.3)	XB4-4225T3B	-
2250	✓	✓	✓	✓	✓	✓	✓	✓	✓	765 (30.1)	✓	✓	-	-	75 (34.0)	XB3-6225T3B	-
2500	✓	✓	✓	✓	✓	✓	✓	✓	-	242 (16.7)	✓	-	-	-	60 (27.2)	-	XB4-3250T2D
2500	✓	✓	✓	✓	✓	✓	✓	✓	✓	765 (30.1)	✓	-	-	-	50 (22.7)	-	XB2-6250T2D
3000	✓	✓	✓	✓	✓	✓	✓	✓	✓	765 (30.1)	✓	✓	-	-	100 (45.4)	XB4-6300T3B	-
3750	✓	✓	✓	✓	✓	✓	✓	✓	✓	594 (23.4)	✓	-	-	-	80 (36.3)	-	XB4-4375T2D
5000	-	✓	✓	✓	✓	✓	✓	✓	✓	765 (30.1)	✓	-	-	-	100 (45.4)	-	XB4-6500T2D

TABLE 10 XB Maximum Heater Wattages

Heat Sink Length	Type	Temperature Code T2D	T3B	T4A	T6
130 mm	XB1	475	300	190	95
	XB2	938	-	-	-
	XB3	1314	-	-	-
	XB4	1524	-	-	-
300 mm	XB1	783	498	294	142
	XB2	1520	988	570	266
	XB3	2173	-	-	-
	XB4	2608	-	-	-
470 mm	XB1	1021	684	380	209
	XB2	2033	1282	722	342
	XB3	3049	1881	1026	456
	XB4	3780	-	-	-
640 mm	XB1	1353	831	451	237
	XB2	2688	1615	864	408
	XB3	4018	2308	1254	612
	XB4	5130	3230	1653	836

Thermostats

Offers a wide variety of explosion-proof thermostats to suit most every need.

All model XB heaters can be fitted with integral line voltage thermostats which are available either externally adjustable or tamper-proof; factory installed or as field installed kit.

Remote thermostat mounting is also available.

Refer to page 23 of this Norseman™ section when selecting the appropriate thermostat for the desired application.

Accessories

Wire Guards and Baffles

All units are equipped with wire guards.

'Gull wing' shaped bright aluminum rear baffles are standard with XB units rated for T2D temperature code (shipped separately).

XB CE / ATEX Explosion-proof Convection Heater

Standard Features

Suitable for the following hazardous location classification: EX II 2 G, EExd IIC T3 OR T4 (See Table 11)

High surface area black anodized heat emitter with integral tubular heating elements

Patented *x-Max*® housing with slide out terminal block trolley simplifies installation and servicing

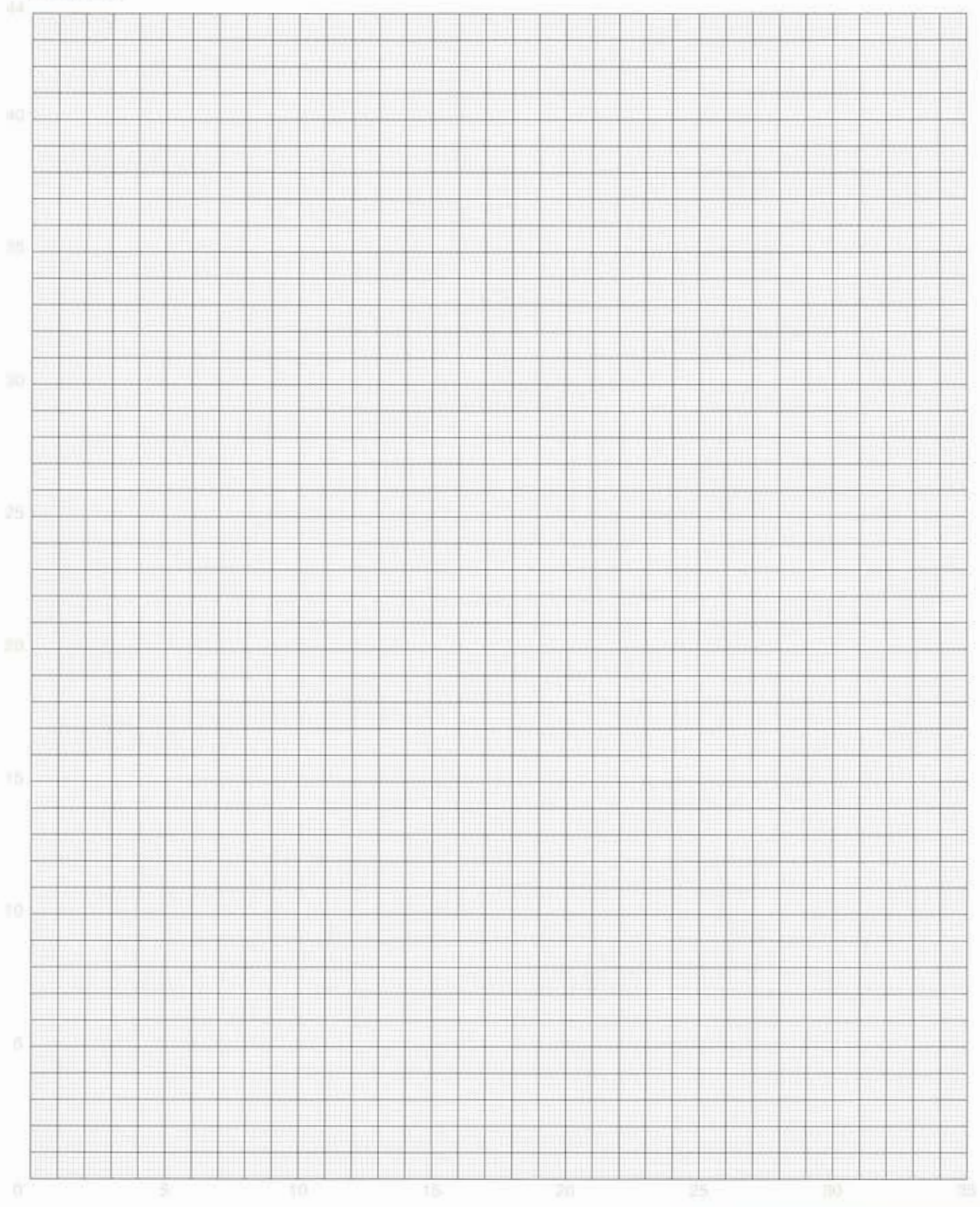
Nickel plated wire guards on all models

Universal support leg for wall or floor mounting

TABLE 11 XB CE / ATEX Explosion-proof Convection Heater Specifications for T3 and T4 Units - Hazardous Location Rating

Watts	Fig. No.	Volts	Phase	'L' Dim. mm (in.)	'M' Dim. mm (in.)	Approx. Weight kg (lbs)	Catalog No.	T-Class
399	1	110	1				XB1-3040T3B	T3
475	1	120	1				XB1-3047T3B	T3
399	1	220	1	424 (16.7)	184 (7.3)	6.8 (15)	XB1-3040T3B	T3
436	1	230	1				XB1-3043T3B	T3
475	1	240	1				XB1-3047T3B	T3
840	2	110	1				XB2-4084T3B	T3
1000	2	120	1				XB2-4100T3B	T3
840	2	220	1	594 (23.4)	184 (7.3)	9.1 (20)	XB2-4084T3B	T3
918	2	230	1				XB2-4092T3B	T3
1000	2	240	1				XB2-4100T3B	T3
1260	3	110	1				XB3-4126T3B	T3
1500	3	120	1				XB3-4150T3B	T3
1260	3	220	1	594 (23.4)	184 (7.3)	9.1 (20)	XB3-4126T3B	T3
1378	3	230	1				XB3-4138T3B	T3
1500	3	240	1				XB3-4150T3B	T3
714	2	220	1				XB2-6071T4B	T4
781	2	230	1	765 (30.1)	635 (25)	34.0 (75)	XB2-6078T4B	T4
850	2	240	1				XB2-6085T4B	T4
1891	3	220	1				XB3-6189T3B	T3
2066	3	230	1	765 (30.1)	635 (25)	34.0 (75)	XB3-6207T3B	T3
2250	3	240	1				XB3-6225T3B	T3
2101	3	220	1				XB3-4210T3B	T3
2296	3	230	1	765 (30.1)	635 (25)	34.0 (75)	XB3-4230T3B	T3
2500	3	240	1				XB3-4250T3B	T3
2521	3	220	1				XB3-6252T3B	T3
2755	3	230	1	765 (30.1)	635 (25)	34.0 (75)	XB3-6276T3B	T3
3000	3	240	1				XB3-6300T3B	T3
2521	3	380	3				XB3-4126T3B	T3
2755	3	400	3	594 (23.4)	184 (7.3)	9.1 (20)	XB3-4138T3B	T3
3000	3	415	3				XB3-4150T3B	T3
1891	3	380	3				XB3-6189T3B	T3
2066	3	400	3	765 (30.1)	635 (25)	34.0(75)	XB3-6207T3B	T3
2250	3	415	3				XB3-6225T3B	T3
2101	3	380	3				XB3-4210T3B	T3
2296	3	400	3	594 (23.4)	184 (7.3)	9.1 (20)	XB3-4230T3B	T3
2500	3	415	3				XB3-4250T3B	T3
2521	3	380	3				XB3-6252T3B	T3
2755	3	400	3	765 (30.1)	635 (25)	34.0 (75)	XB3-6276T3B	T3
3000	3	415	3				XB3-6300T3B	T3

NOTES:



Product Description

XR explosion-proof natural convection heater is the latest addition to the Norseman™ line of hazardous location heating products and the first to come with a NEMA 7 & 9 aluminum exterior Defender™ thermostat. The XR heater is available fro 50 to 425 watts, and rated as either T2D or T3B for Class 1, Division 1 & 2, group C & D.

This low maintenance heater is available in several sizes, wattages and voltages and is primarily intended for freeze protection in control enclosures or confined areas where heat required is minimal, but essential. Standard with this heater are an adjustable thermostat, protection grill, mounting brackets and hardware.

The XR is designed specifically for heating industrial spaces where potentially explosive substances are or may be present. Typical hazardous location environments include:

- **Control cabinets and small enclosures**
- **Storage rooms for paints and cleaners**
- **Spray booths**
- **Gas plants**
- **Pump houses**
- **Marine and offshore**
- **Oil platforms**
- **Cleaning and dyeing plants**

FIGURE 14 Model XR Side view (Refer to TABLE 12)

FIGURE 15 Model XR Top view
(Without Mounting Bracket)

Selection of Temperature Code

Refer to the atmospheric condition table at the beginning of this section for detailed selection data for the temperature code.

To minimize cost and physical size of the heater, select the heater with the highest temperature code that suits the environment. See Table 12

FIGURE 13 Model XR Shown

Thermostat Construction

The XR explosion-proof convection heaters come equipped with an all-aluminum exterior Defender® thermostat with no breakable external plastic parts. These heavy-duty thermostats are the smallest, lightest and most durable thermostats available for demanding industrial applications.

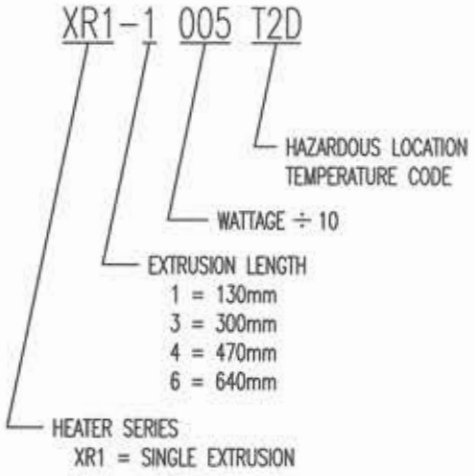
Other Features:

- No Exposed copper or brass
- Corrosion resistant, suitable for H2S environments
- CFC & mercury free
- Bimetal sensing element
- No delicate coils or bellows

TABLE 12 XR Explosion-proof Convection HeaterSpecifications for T2D & T3B Units – Hazardous Location Rating Class 1, Division 1, 2 Groups C & D

Watts	Volts	Phase	'L' Dim. mm (in.)	Approx. Weight kg (lbs)	Catalog No.
50	120	1	295 (11 5/8)	4.5 (10)	XR1-1005T2D
75	120	1	295 (11 5/8)	4.5 (10)	XR1-1007T3B
100	120	1	295 (11 5/8)	4.5 (10)	XR1-1010T2D
125	120 208	1	295 (11 5/8)	4.5 (10)	XR1-1012T2D
125	120 208 240	1	465 (18 5/16)	6.8 (15)	XR1-3012T3B
175	120 208 240	1	635 (25)	9.1 (20)	XR1-4017T3B
200	120 208 240	1	465 (18 5/16)	6.8 (15)	XR1-3020T2D
250	120 208 240	1	805 (31 11/16)	11.3 (25)	XR1-6025T3B
300	120 208 240	1	635 (25)	90.1 (20)	XR1-4030T2D
425	120 208 240	1	805 (31 11/16)	11.3 (25)	XR1-6042T2D

Product Code



Additional Standard Features

- Suitable for temperature codes T2D & T3B (see model #)
- High surface area black anodized heat emitter with integral tubular heating elements
- Nickel plated wire guards on all models
- Universal 11 Ga. Stainless steel wall mounting brackets
- Built-in externally adjustable bimetal thermostat
- Heater can be used to control the ambient temperature of the location where installed (this is based on an appropriate heat load calculation)

Product Description

The XP unit is designed for freeze protection of control enclosures or other confined areas characterized by poor natural circulation and where explosive substances are present.

As a precaution against excessive convector temperatures the unit comes standard with two thermostats. One thermostat is factory preset to limit the convector temperature to the maximum allowed for the temperature code classification. The second thermostat is also nonadjustable and is set to control the space temperature between 32°F to 60°F.

Units are available from 50 watts to 600 watts.

The heaters are designed for space heating where potentially explosive substances are or may be present. Typical applications include:

- **Control cabinets and small enclosures**
- **Storage rooms for paints and cleaners**
- **Grain elevators**
- **Flour mills**
- **Spray booths**
- **Gas plants**
- **Pump houses**
- **Marine and offshore**
- **Oil platforms**
- **Cleaning and dyeing plants**

Selection of Temperature Code

Refer to the atmospheric condition table at the beginning of this section for detailed selection data for the temperature code.

To minimize cost and physical size of the heater, select the heater with the highest temperature code that suits the environment. In the tables a check mark (✓) under the temperature code indicates that the surface temperature of the heater will not exceed the coded value listed in Tables 12 and 13 below.

FIGURE 16 Model XP (Refer to TABLE 13 &14)

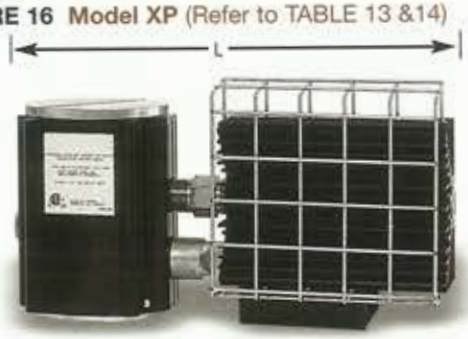


FIGURE 17 Model XP Side View

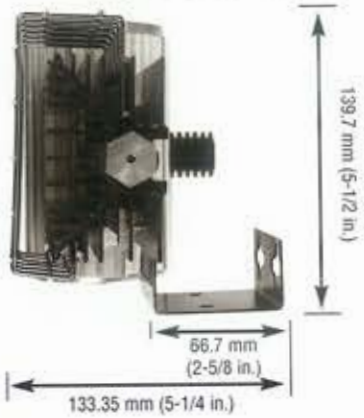


FIGURE 18
Model XP1-1007T3B shown

TABLE 13 Standard XP Heaters

Watts	Standard Voltages 120	208	240	L' Dimension mm(in.)	Temp Code T2D	T3B	Weight kg (lbs)	Part # Class I Division 1, 2 Group A, B, C & D Class II Division 1, 2 Group E, F & G Class III Division 1	Class I Division 1 Group A, B, C & D
50	✓	-	-	278 (10.9)	✓	-	2.4 (5.25)	-	XP1-1005T2D
100	✓	-	-	278 (10.9)	✓	-	2.4 (5.25)	-	XP1-1010T2D
150	✓	✓	-	278 (10.9)	✓	-	2.4 (5.25)	-	XP1-1015T2D
400	✓	✓	✓	618 (24.3)	✓	-	3.7 (8.25)	-	XP1-4040T2D

TABLE 14 Other Available XP Heaters

Watts	Standard Voltages 120	208	240	L' Dimension mm(in.)	Temp Code T2D	T3B	Weight kg (lbs)	Part # Class I Division 1, 2 Group A, B, C & D Class II Division 1, 2 Group E, F & G Class III Division 1	Class I Division 1 Group A, B, C & D
75	✓	-	-	278 (10.9)	✓	✓	2.4 (5.25)	XP1-1007T3B	-
125	✓	-	-	278 (10.9)	✓	-	2.4 (5.25)	-	XP1-1012T2D
200	✓	✓	✓	448 (17.6)	✓	✓	3.1 (6.75)	XP1-3020T3B	-
300	✓	✓	✓	448 (17.6)	✓	-	3.1 (6.75)	-	XP1-3030T2D
300	✓	✓	✓	618 (24.3)	✓	✓	3.7 (8.25)	XP1-4030T3B	-
375	✓	✓	✓	788 (31.0)	✓	✓	4.4 (9.75)	XP1-6037T3B	-
550	✓	✓	✓	788 (31.0)	✓	-	4.4 (9.75)	-	XP1-6055T2D

Construction and Installation

The XP explosion-proof convection heaters utilize unique copper free aluminum extruded convector and the patented *x-Max*® terminal housing. Large convector surface area and high mass fins ensure safe and efficient low temperature heat transfer to the environment. Convectors are black anodized to resist oxidation and maximize heat transfer.

The patented *x-Max*® housing can be equipped with multiple tapped conduit entries throughout its length to facilitate installation. A track and trolley system and threaded covers at each end allow easy access to internal components. All units, except the single heat sink units, have a built-in terminal block for simplified electrical connection.

XP units have a universal mounting bracket for horizontal or vertical mounting to the wall or floor.

Special Wattage and Lengths

The following table lists the maximum design wattages for the four standard heat sink lengths and configurations.

TABLE 15 XP Maximum Heater Wattages

Heat Sink Length	Type	Temperature Code T2D	T3B	T4A	T6
130 mm	XP1	150	75	-	-
300 mm	XP1	325	200	-	-
470 mm	XP1	475	300	-	-
640 mm	XP1	600	375	-	-

Accessories

Wire Guards and Baffles

All units are equipped with wire guards.

Product Description

The XT explosion-proof thermostat utilizes the unique *x-Max*® system to provide maximum durability, safety and ease of use. Three basic units are available to suit most hazardous location temperature control applications.

XT thermostats are suitable for air, duct, pipe or tank temperature control.

Approvals for all area classifications

Value engineered

Remote or local temperature sensing

Rating to 600 V, S.P.S.T. and D.P.S.T.

Multiple conduit entries

'O'-rings for moisture protection

Norseman™ XTB

The XTB unit is normally used for remote sensing. A CSA certified packing gland is provided to allow the 57 in. capillary to exit the *x-Max*® housing.

Certification

All XTBs are certified for Class I Groups C & D, Class II Groups E, F, G, and Class III hazardous locations, Divisions 1 and 2.

FIGURE 19 XTB

Norseman™ XTW

The XTW unit is suitable for air or liquid temperature sensing and control in all hazardous locations. For air sensing applications, a finned stainless steel thermostat well assembly is provided to enclose the thermostat bulb. For liquid sensing applications, the XTW*****L has an external 1/2 in. NPT thread on the well assembly to permit easy installation into the tank wall.

Certification

All XTWs are certified for Class I Groups A, B, C & D, Class II Groups E, F & G and Class III hazardous locations, Divisions 1 and 2.

Type XTK

The type XTK is a thermostat kit suitable for field installation into other *x-Max*® products, such as the XB explosion-proof convection heater, the XC explosion-proof Screwplug heater or the XG explosion-proof unit heater. This allows these products to be stocked without thermostat and have a kit supplied when required.

The XTK is available either with a thermostat well assembly or with a packing gland and 60 in. capillary for remote bulb sensing.

FIGURE 20 XTK Assembly

TABLE 16 XT Explosion-Proof Thermostats

Part # SPST - 15A/600 V 1ø 25A/277 V	DPST - 15A/600 V 3ø	Description	Temperature Range	Hazardous Area Rating: Class I Division 1, 2 Group A, B, C & D Class II Division 1, 2 Group E, F & G Class III Division 1, 2	Hazardous Area Rating: Class I Division 1, 2 Group C, D Class II Division 1, 2 Group E, F & G Class III Division 1, 2	Approx. Weight kg (lbs)
XTB4481		Remote sensing bulb with 57 in. capillary length	-18 - 40°C (0 - 100°F)	-	✓	1.7 (3.8)
XTB12481			10 - 120°C (50 - 250°F)	-	✓	1.7 (3.8)
	*XTB04483			-	✓	1.7 (3.8)
	**XTB12483			-	✓	1.7 (3.8)
XTWL04481		Bulb in Well with 1/2 in. NPT fitting for liquid sensing	-18 - 40°C (0 - 100°F)	✓	✓	1.8 (4.0)
XTWL12481			10 - 120°C (50 - 250°F)	✓	✓	1.8 (4.0)
	*XTWL04483			✓	✓	1.8 (4.0)
	**XTWL12483			✓	✓	1.8 (4.0)
XTWA04481		Bulb in Finned Well for Air Sensing	-18 - 40°C (0 - 100°F)	✓	✓	1.8 (4.0)
XTWA12481			10 - 120°C (50 - 250°F)	✓	✓	1.8 (4.0)
	*XTWA04483			✓	✓	1.8 (4.0)
	**XTWA12483			✓	✓	1.8 (4.0)
XTKW04481		For XB heaters use as add-on kit. Well assembly provided	-18 - 40°C (0 - 100°F)	✓	✓	0.3 (0.7)
XTKW12481			10 - 120°C (50 - 250°F)	✓	✓	0.3 (0.7)
	*XTKW04483			✓	✓	0.3 (0.7)
	**XTKW12483			✓	✓	0.3 (0.7)
XTKB04481		For XC and XG heaters use as add-on kit with 8 in. capillary	-18 - 40°C (0 - 100°F)	-	✓	0.2 (0.5)
XTKB12481			10 - 120°C (50 - 250°F)	-	✓	0.2 (0.5)
	XTKB04483			-	✓	0.2 (0.5)
	XTKB12483			-	✓	0.2 (0.5)

* XT thermostats for convection heating applications should use -18 - 40°C (0 - 100°F)
** XT thermostats for process heating applications should use 10 - 120°C (50 - 250°F)

Construction

Housings and covers are made from copper-free extruded aluminum.

Standard models XTW and XTB have an attractive black finish. Enclosures are provided with 3/4 in. NPT conduit entries on two sides.

All units are shipped with a universal bracket suitable for horizontal or vertical mounting.

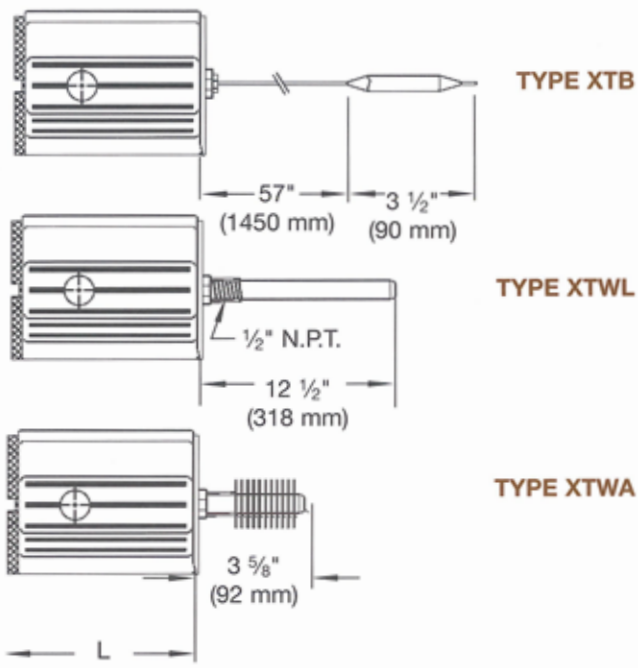
All XT explosion-proof thermostats use the unique "Track and Trolley" wiring system for ease of connection. The XTW and XTB are provided with a #14 ga. wire lead for grounding purposes.

Selection of Temperature Codes

Refer to Table 16 to select the XT best suited to your application.

All thermostats feature a convenient terminal block mounted to a slide-out trolley.

FIGURE 21 XT Explosion-Proof Thermostat Dimensions



Special Order Options

70°C - 280°C (150°F - 550°F) and 160°C - 370°C (300°F - 700°F) temperature ranges

Other cover styles

Series 2 housing construction (4 3/8 in. I.D.)

Various housing lengths up to 965 mm (38 in.) with contactor and transformer

Multiple thermostats in one housing

Custom conduit entry size and location

Other finish options

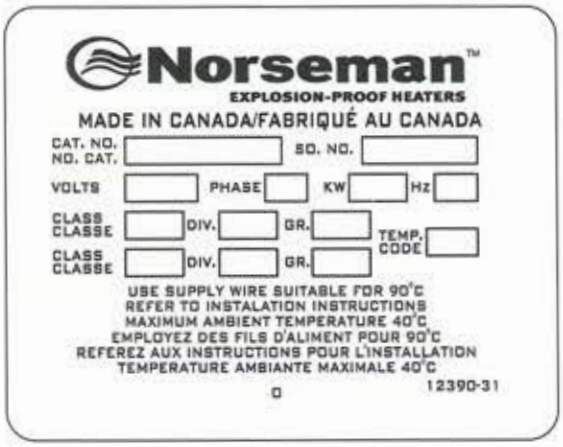
Capillary protected with flexible armored cable

Nickel plated or S.S. bulb and capillary

Warning: Always disconnect the electrical supply at the mains prior to performing any maintenance. Ensure that all plugs, covers, etc. are installed and tight prior to re-energizing the power supply.

Heater Nameplate Data

Copy all information contained on the heater nameplate onto the sample nameplate provided here.



Suggested Maintenance Schedule

Heater Serial Number:

Date of Maintenance:

Maintenance Done By:

Periodic Maintenance

(Before and as Required During Heating Season)

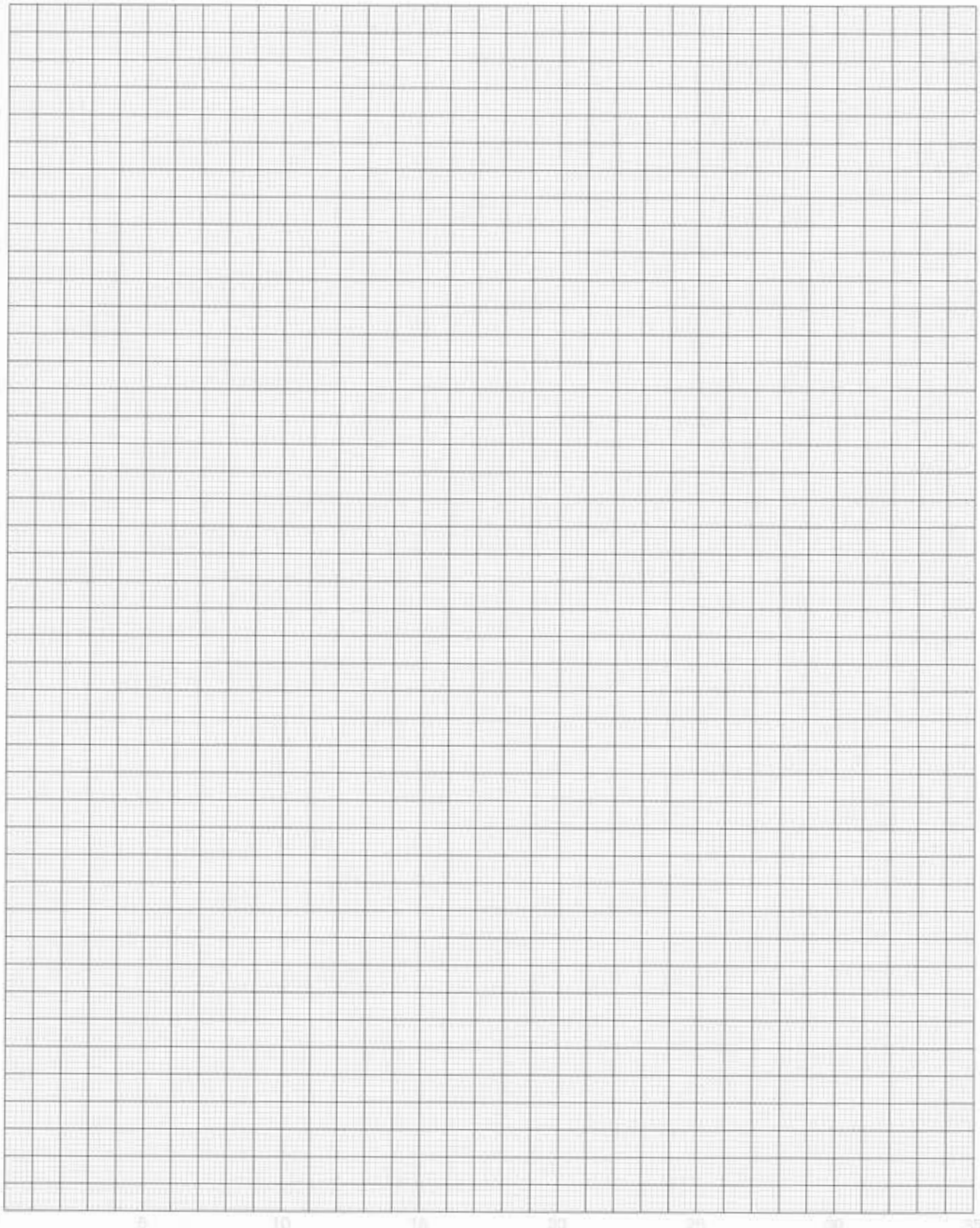
- ❑ Wipe down the heater cabinet using water or a mild detergent.
- ❑ Inspect element fins for dust build-up and debris, especially after seasonal shutdowns. Clean with an air blast or vacuum.
- ❑ Ensure that nothing is restricting the air flow into or out of the unit and that the blower wheel is free to rotate (where applicable).
- ❑ Wipe down the motor using a mild detergent and ensure that it is clear of any dust build-up or debris (where applicable).

Annual Maintenance

(Before Heating Season)

- ❑ Inspect the heater to ensure that all connections, fittings, plugs, screws, covers, etc. are tight and free of corrosion.
- ❑ Ensure the blower wheel or fan blade is free to rotate and accidental damage has not occurred (where applicable).
- ❑ Inspect the thermostat shaft to ensure proper operation (where applicable).
- ❑ Inspect the disconnect shaft to ensure proper operation (where applicable).
- ❑ Inspect the "auto/off/fan-only" switch to ensure proper operation (where applicable).
- ❑ Inspect all terminal connections and conductors for loose connections or damaged insulation.
- ❑ Inspect the Control Trolley to ensure that all components are in proper working order.
- ❑ Inspect all fusing.
- ❑ Inspect the explosion-proof conduits and conduit seals for signs of damage or malfunction.
- ❑ With the power supply disconnected, manually rotate the blower wheel while listening for signs of worn or damaged bearings (where applicable).
- ❑ Inspect High-limit capillaries and connection at the elements for contact and tightness (Do not Over Tighten).

NOTES:



Norseman™ Warranty

Warrants to the purchaser of each new product that any part thereof which proves to be defective in material or workmanship under normal use within 18 months of the date of shipment, or 12 months from the date of start operation (whichever occurs first) will be repaired or replaced without charge. Any such defect should be brought to the attention of the Company's office from which the product was purchased, which is authorized to furnish repair or replacement within the terms of this warranty.

The company will not be responsible for any expenses incurred in installation, removal from service, transportation cost, or for damages of any type whatsoever, including incidental or consequential damages. Some states or provinces do not allow exclusion or limitation of incidental or consequential damages so the preceding exclusion or limitation may not be applicable to you.

Since we cannot anticipate or control the conditions under which our products may be used, we accept no responsibility for the safety and suitability of our products when used alone or in combination with other products. Tests for safety and suitability of the products should be done by the user.

This warranty will not apply if, in the judgment of the company, damage or failure has resulted from accident, alteration, misuse, abuse or operation on an incorrect power supply. The foregoing is in lieu of other warranties expressed or implied. Neither assumes nor authorizes any person to assume for it any other obligation or liability in connection with the said product.

Since the paint finish may be damaged in use, no warranty applies to such paint finish except for manufacturing defects which become apparent within 30 days from the date of installation.

Corrosion

Heaters are not guaranteed against damage caused by corrosion.

Liability

Technical data contained in the catalog is subject to change without notice. The company will endeavor to supply the equipment as illustrated but reserves the right to make dimensional and other design changes as required.