

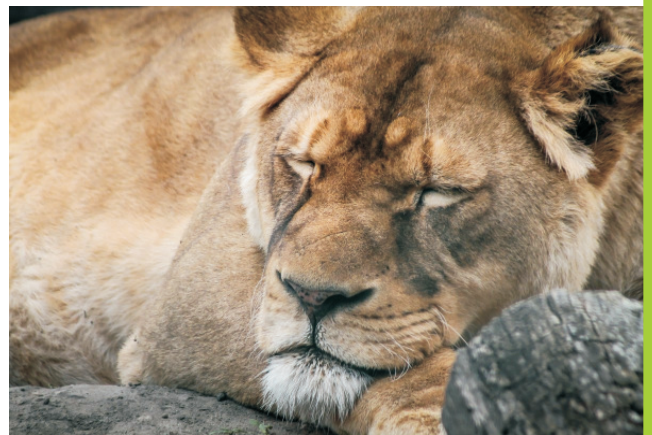


STOP your AESS being in the hummingbird mode starting the engine excessively for main reservoir pressure built ups, coolant and ambient temperature.

AST Idling Stop Technology maintains the engine coolant year-round and monitors applied parking brake beyond main reservoir pressure.

Keep the engine sleeping by extending AESS shutdowns up to 72 hours.

Prime mover and engine starter will thank you!



EPA SmartWay verified technology for locomotives
Compliant to AAR AESS Spec. S-5502
Benchmark in low maintenance

Idle Free

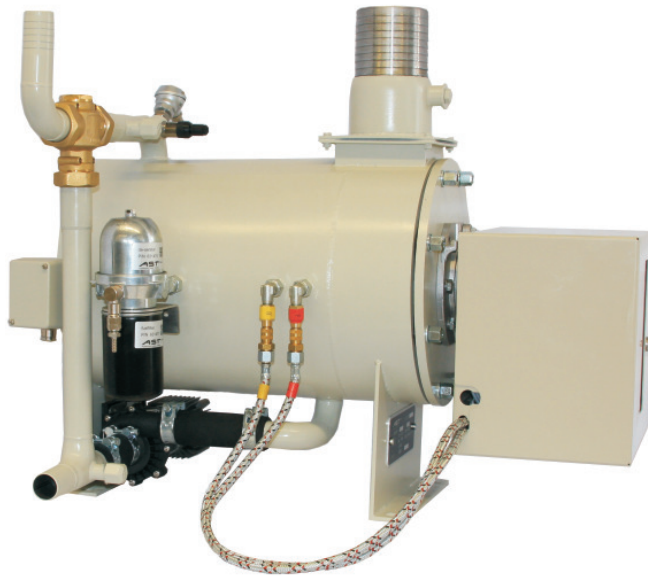


Find out more on www.ast.de
Call A.S.T. in North America Phone +1-403-470-8826

AStop Idle System K35/50

Independent fuel operated heating system for diesel engines.

Maintains ideal engine temperature and frost protection year-round.



System key data:

- 50 kW / 170,000 BTU heat output at 92% efficiency
- Extra low fuel consumption: 0.13 to 1.32 US gal/h
- Operating ambient temperature range:
-40°C (-40°F) to +50°C (+122°F)
- Low battery draw: 120 W avg. at 64VDC
- no external AC plug-in
- Physical dimensions / weight: LxWxH 30x20x30 in, 180 lbs.
- BLDC coolant circulation pump: 115 l/min / 30 gal/min
- Low-NOx blue flame burner, NOx: < 35 ppm
- Fuel de-aerator and integrated fuel preheating

EPA Smart-Way verified technology for locomotives

System features:

- Railway designed for reliability and low annual maintenance
- For EMD 645/710, GE 7FDL/GEVO engines and others
- Interface to all AESS systems
- Quick running shop installation kit
- GSM online reporting and remote access for diagnostics

System Layout:

X01: Control System

X06: Burner (blue flame)

X10: Temp. sensor heater

X12: Ref. temp sensor

X19: Temp. sensor engine

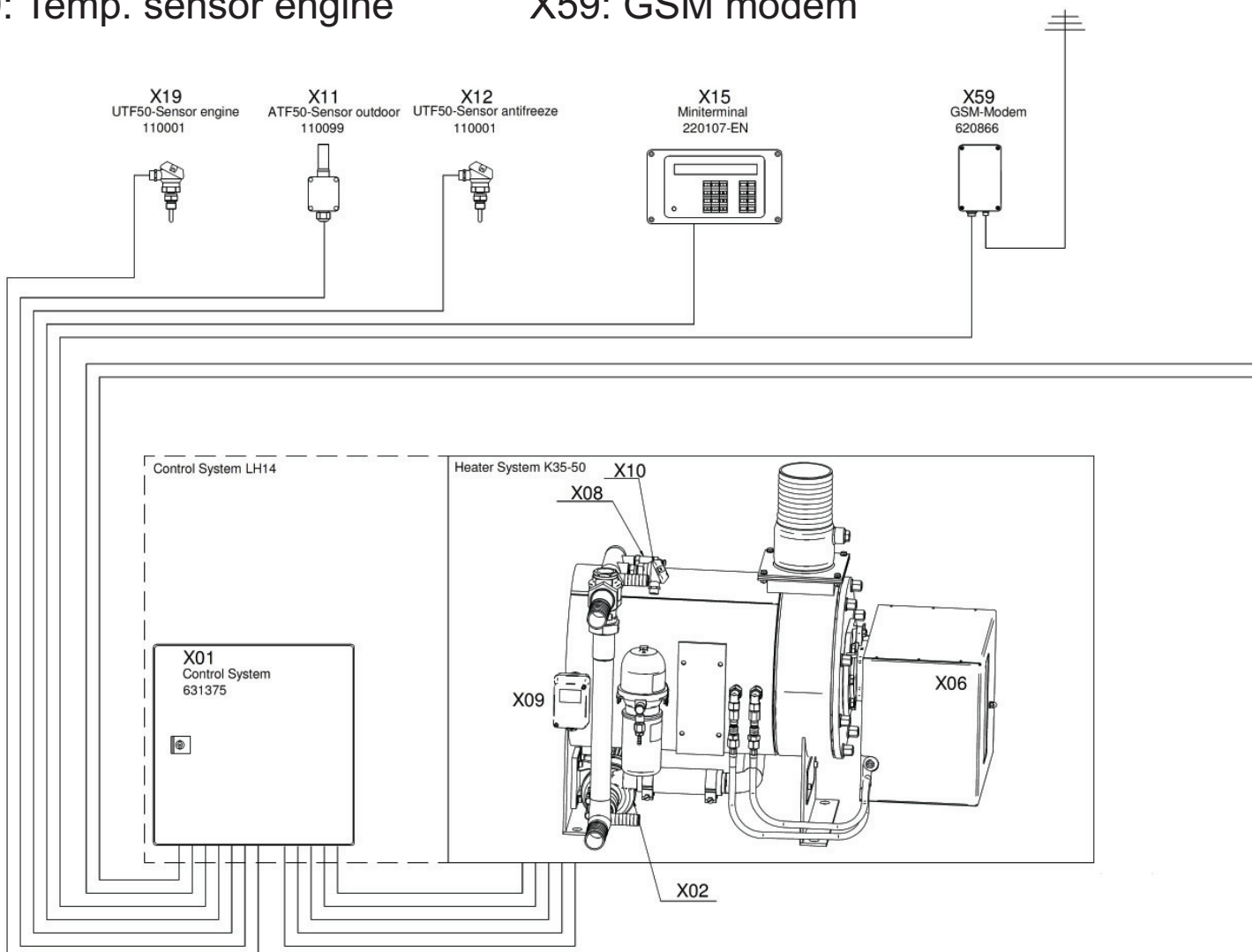
X02: Heater & coolant circulation pump

X08: Water pressure sensor

X11: Temp. sensor outdoor

X15: Miniterminal

X59: GSM modem



AB Brake Sense Unit

Locomotive parking brake sensing unit to inhibit unneeded engine starts for low main reservoir pressure and to extend engine shutdown times.

Measures the correct parking brake applied force at the brake cylinder lever. Increases safety of a parked locomotive.

Process a parking brake applied status signal with any AESS equipped locomotive.

Sensor unit key data:

- stainless steel load pin with safety anchor shackle
- measurement range 0...11,200 lbf
- safe overload 150%
- accuracy class 1%
- anti twist guard
- integrated amplifier and external control logic for processing a parking brake applied signal



Comply with AAR AESS Spec. S-5502:

With sensing a positive parking brake applied signal the main reservoir 2 pressure decrease to 15 psi above brake pipe setting is **no longer** a required engine start-up parameter if

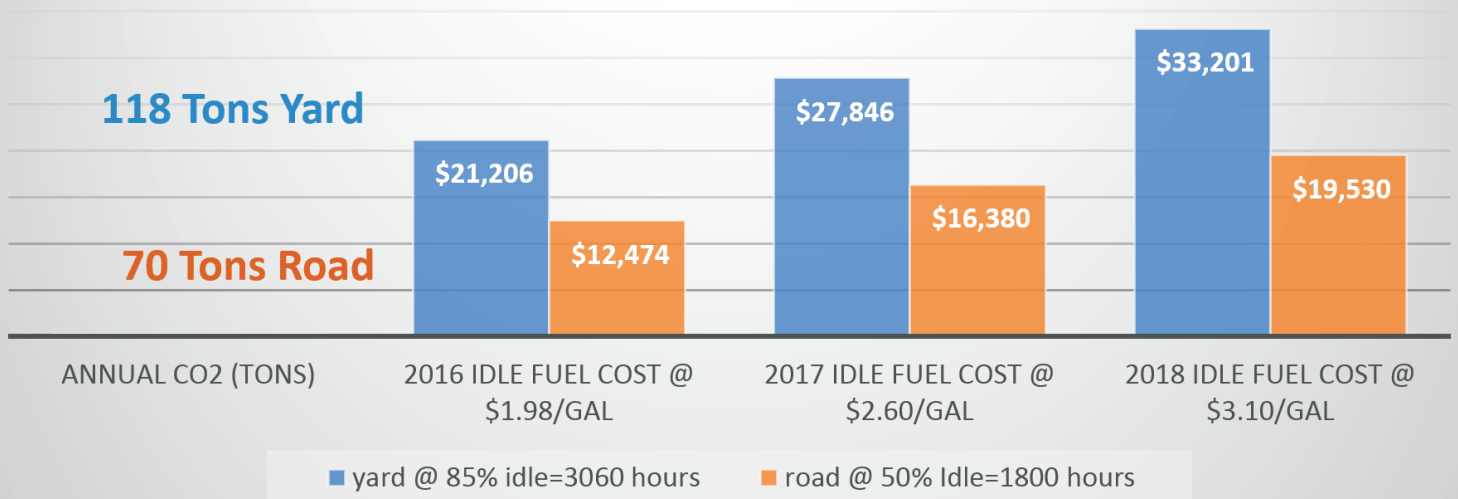
- the unit is on trail operation (isolation switch in RUN or ISOLATE/START/STOP)
- if the unit is on lead operation and the isolation switch is in ISOLATE/START/STOP

Not Working - **AST** Keeps It Ready – \$ Save Your Fuel

EPA¹ shows benefits from reducing long-duration idling also includes:

- Decreasing engine maintenance costs;
- Extending engine life & overhauls;
- Improving operator well-being by decreasing noise levels;
- Decreasing emissions that are harmful to the environment; and
- Improve community relations

POTENTIAL FUEL SAVINGS - WINTER 150 DAYS



¹ <https://www.epa.gov/verified-diesel-tech/learn-about-idling-reduction-locomotives>

*Idling of locomotives is no longer an option.
Let us show how your road can achieve
your goal of reducing GHG, noise and
maintenance all year round with our
self-powered Idling Stop Technology.*

