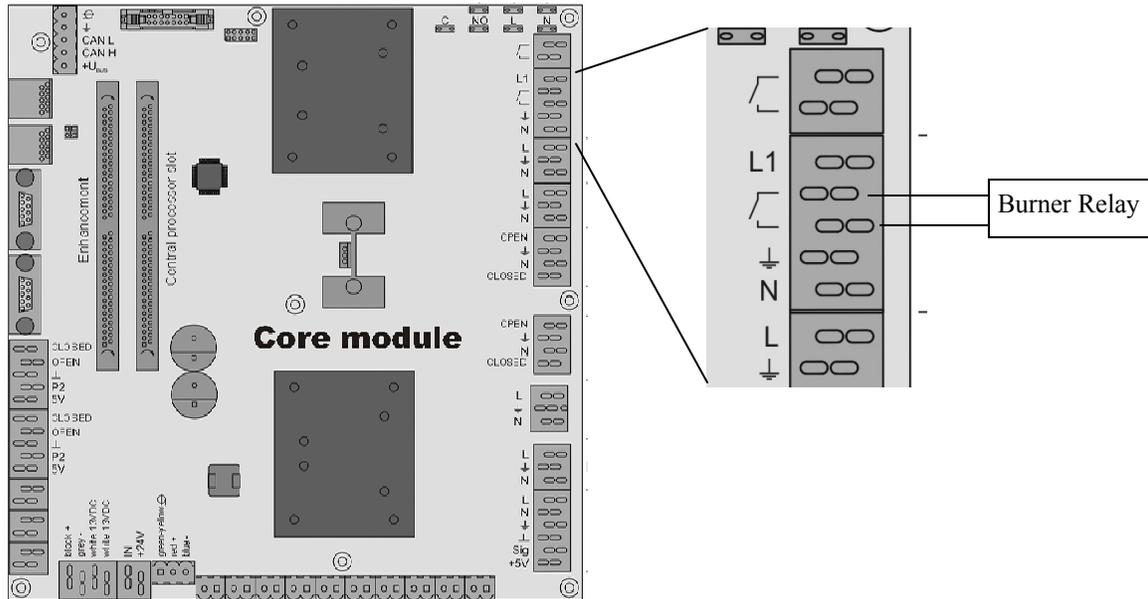**Summary:** This bulletin explains how to utilize the burner relay contacts on Fröling P4 boilers to control a back-up boiler or an alarm device such as an auto-dialer.
The burner relay switch is located on the core module (Fig. 1).

Fig. 1

Instructions: To activate the burner relay, the boiler must be set to Hydraulic System 2 or Hydraulic System 4; if 4 sensor tank monitoring is used. They will activate the Boiler 2 parameters which are needed to control the burner relay switch.

The burner relay can be used two ways: It can be used as an emergency contact if the P4 boiler goes into fault and both the storage tank and boiler have dropped below their pre-determined temperatures. In this scenario, the P4 and back-up (standby) boiler cannot operate at the same time. The second way the relay can be used is to control a back-up boiler to maintain the storage tank at a pre-determined temperature. Both the P4 and the back-up (standby) boiler can operate at the same time.

The burner relay contacts will not always close immediately. **All** parameters must be met before they will close.

Settings:
Menu: System → System Selection
System Selection: **Hydraulic System 2 or Hydraulic System 4**
→ Isolating valve installed: **NO**
→ Standby boiler blocking off: **YES:** Both boilers can operate at the same time. The back-up (standby) boiler will operate if the storage tank temperature falls below its pre-determined minimum temperature.
→ Standby boiler blocking off: **NO:** Only one boiler is able to run. The back-up (standby) boiler will only run if the pellet boiler is in fault and both the storage tank, boiler, and time delays have been satisfied.

A key parameter to set depending on which way the burner relay is to be set is "standby boiler blocking".

        Example: The pellet boiler runs out of fuel and goes into fault. The storage tank and boiler falls below its predetermined 60º C temperature and the standby boiler start delay time of 10 minutes (explained below) has expired. The burner relay contacts will now close.

If the blocking is set to "YES"
Menu: Boiler 2 → Temperatures
      → Standby boiler start, if storage tank top temperature is below: the default is 20º C
      (This is low, **60º C** is a better default temperature).

Menu: Boiler 2 → Temperatures
      → Standby boiler start delay: default 10 minutes (This time starts after the storage has
      dropped below the temperature above).

Menu: Storage Tank → Storage Tank 01
      → Times: The default is 06:00-22:00. We recommend changing this to **00:00-24:00**.
      The boilers **will not** operate outside of this time range.

All of the above parameters must be met before the burner relay contacts will close.

The back-up (standby) boiler will stop when the storage tank top temperature is met or falls outside of the storage tank times.

If the blocking is set to "NO"
Menu: Boiler → Temperatures
      → Minimum boiler temperature to release all pumps: The default is 35ºC (A good rule
      of thumb is to set this to 20º C below the boiler set-point). The pellet boiler must be
      below this temperature to satisfy this parameter.

Menu: Boiler 2 → Temperatures
      → Standby boiler start, if storage tank top temperature is below: the default is 20º C
      (This is low, **60º C** is a better default temperature).

Menu: Boiler 2 → Temperatures
      → Standby boiler start delay: default 10 minutes (This time starts after the storage has
      dropped below the temperature above).

Menu: Storage Tank → Storage Tank 01
      → Times: The default is 06:00-22:00. We recommend changing this to **00:00-24:00**.
      The boilers **will not** operate outside of this time range.

All of the above parameters must be met before the burner relay contacts will close.