

NATCO LRC-II

Smart interface

APPLICATIONS

- Dehydration and desalting using the NATCO DUAL FREQUENCY* electrostatic treater
- Desalting using the BILECTRIC HF* high-frequency AC desalter
- Electrodynamic desalting using the NATCO ELECTRO-DYNAMIC DESALTER* electrostatic desalting technology
- Modulated dual-polarity dehydration using the NATCO DUAL POLARITY* electrostatic treater

ADVANTAGES

- Ability to interface with distributed control system using MODBUS® TCP/IP
- Higher tolerance for conductive crude oils
- Supervisory, dialogue, reporting, and control (SRDC)
- Faster change of operating parameters without the need to stop the dehydration process
- Interface rag handling through rag-buster routine
- Improved desalting process through voltage modulation
- Storage of up to 30 different crude slates, which are all user editable
- Touch screen
- Qualification to Atmosphères Explosibles (ATEX) and UL
- MODBUS communication
- Optional cooler and heater



LRC-II smart interface under operator control.

In a conventional dehydration or desalting system, the power unit compensates for process upsets by lowering the output voltage, which reduces the treater operating performance. The NATCO* LRC-II* smart interface regulates the flow of electric current, providing full power regulation even during process upsets.

The LRC-II smart interface consists of three key components:

- standard control electronics
- panel PC
- board.

An optional sync board is also available.

The LRC-II smart interface panel is responsible for

- setting the operating parameters for each power unit
- starting and stopping the power units
- logging and storing messages for easy retrieval
- interfacing with user fail-safe circuits.

The sync board is used to synchronize two or more power units in operation on a single vessel.

NATCO LRC-II

The heart of the LRC-II smart interface is the board, which interacts with the LRC-II panel PC and power units. Its main functions are to

- process the parameter changes requested by the user
- monitor the power unit(s) performance and pass appropriate information to the LRC-II smart interface panel PC
- monitor arcing inside the treater vessel and safely reset the power unit, when required
- provide warning or caution messages whenever upsets are reported by the power units.

LRC-II smart interface panel

- Panel: NEMA 4X
- Voltage: 110 VAC single phase
- Dimensions (width × height × depth): 24 in × 30 in × 10 in
- Weight: 60 lbm [27.2 kg]

Note: depth and weight depend on configuration.

The LRC-II panel PC has nine main screens:

1. **Configuration screen**
2. **Status screen** that shows the number of power units (maximum 3) and the system status for all power units connected
3. **Power unit performance screen** that shows the power unit status, active control settings, and feedback signals from the power unit
4. **Message screen** that logs up to 99 messages, warnings, and system upsets for the current power unit
5. **Performance summary screen** that displays voltage and current feedback for all power units
6. **Control settings screen** that uses two columns for active and edits screens, displays the six parameters controlling the performance of the treater in the Active Slate screen, and enables editing of the parameters in the Edit Screen
7. **Power unit settings screen**, where the power unit details are entered and displayed
8. **Systems screen** that stores current data and time info
9. **About screen** that displays the LRC-II smart interface and sync board firmware versions.



LRC-II smart interface panel.