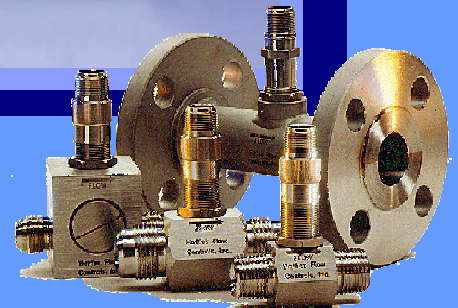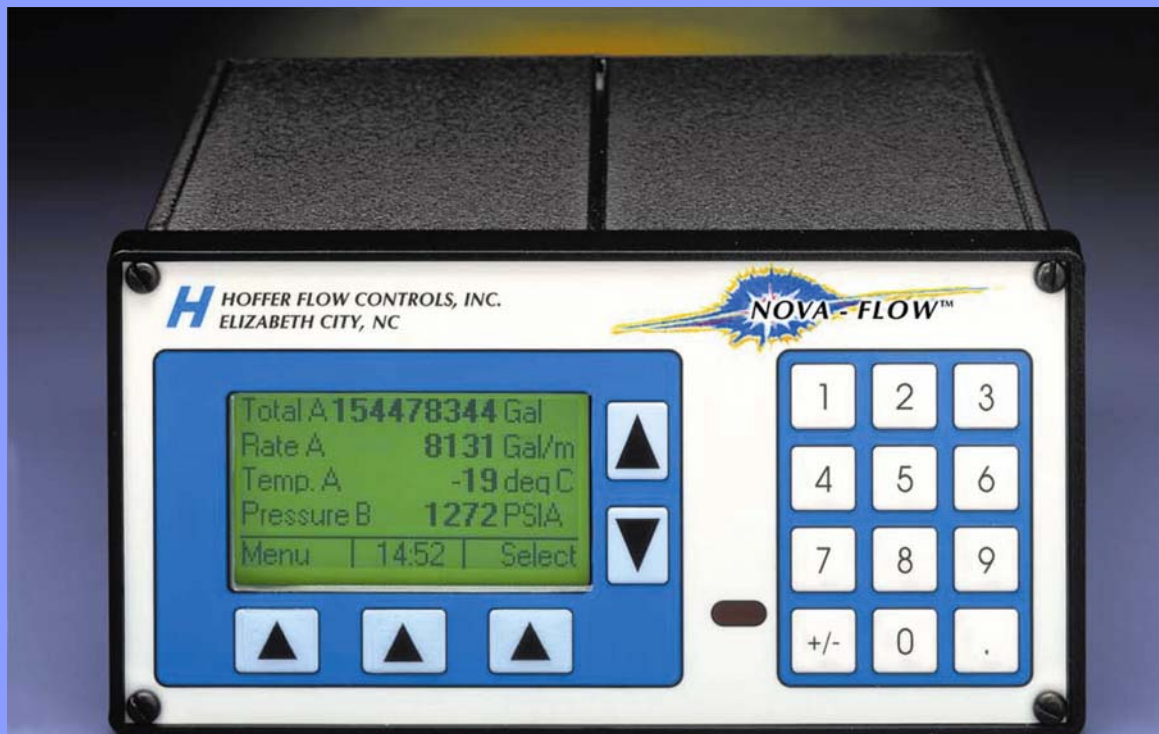# Flow Computers by Hoffer

NOVA-FLOW SERIES

"Plug-n-Flow" Architecture

**Single & Multi-Channel Flow Computers
Batch Controllers
Energy Calculators**

HOFFER FLOW CONTROLS, INC.
**www.hofferflow.com**

Nova-Flow

Introduction:

The Nova-Flow Series of flow computers is a family of highly flexible, modular flow computers designed for basic rate and total flow display, batch control for liquid and gas flow measurement, as well as for thermal energy measurement. With more than 500,000 unique configurations possible, the potential applications for these devices is almost limitless. Up to 4 different flowmeter inputs and multiple temperature, pressure and density inputs are supported by one or more versions. A wide range of outputs and control interfaces are available along with as many as three serial communication ports per computer. System schematics for each of the three basic versions of the Nova-Flow Series, summary descriptions of primary specifications along with a chart of some of the more popular features for each version are shown in this brochure. For assistance with full specification of a Nova-Flow computer for your exact application, please contact our local Hoffer Flow Controls' representative or factory.

Features:	Nova-Flow	Nova-Batch	Nova-Energy
Max. Number of Flowmeter Inputs	4 2 Pulse & 2 Analog	1	2
Max. Number of Temperature & Pressure Inputs	2 of each	1 of each	2 of each
Max. Number of Density Inputs	2	1	2
Max. Number of Analog Outputs	2	2	2
Max. Number of Serial Ports	3	3	3
2 Stage Batch Control	No	Yes	No
Max. No. of Alarm/Relay Outputs	2	2	2
Max. No. of TTL/CMOS Pulse Inputs/Outputs	8	8	8
Two-Level Password Protection	Yes	Yes	Yes
Multiple Batch Modes (Manual, Auto, Auto-Continue & Remote)	No	Yes	No
Flash Memory	Yes	Yes	Yes
Infrared Optical Port/Interface (Modbus Protocol)	Optional	Optional	Optional
Max. No. of Fluid Property Tables	4	4	4
Windows-Based Setup Software	Included	Included	Included
Multi-Function Self Diagnostics	Yes	Yes	Yes
Stainless Steel Front Panel Microswitches	Yes	Yes	Yes
Audit Trails w/ Time, Date & ID Stamp	Yes	Yes	Yes
Temperature, Pressure &/or Density Compensation	Yes	Yes	Yes
20-Point Linearization	Yes	Yes	Yes

Installation Drawings:

Nova-Flow Multi-Channel Installation

Nova-Batch Installation

Nova-Energy Calculator Installation
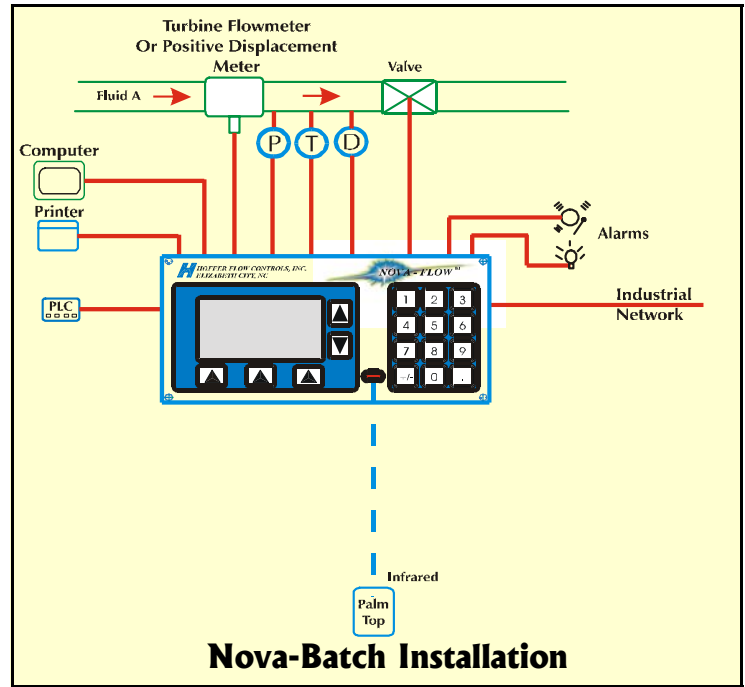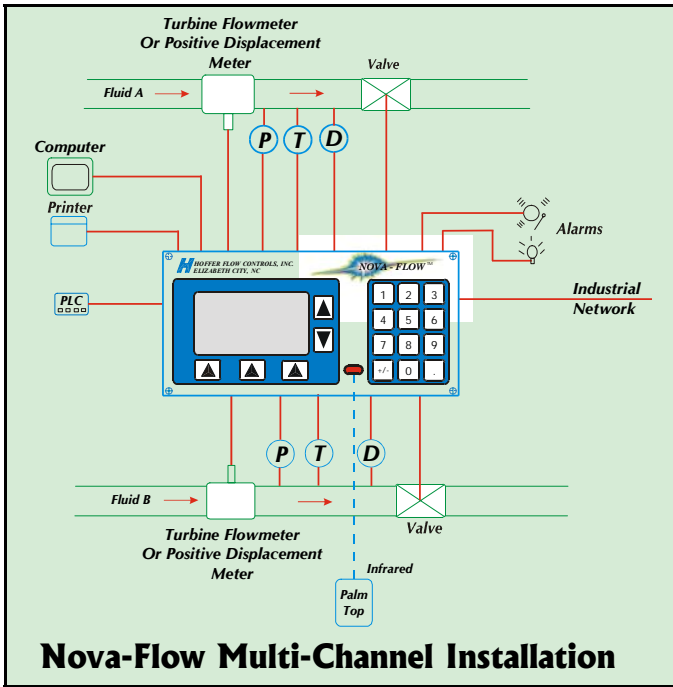
General Specifications

Display
128x64 graphical, displays 4 parameters simultaneously.
Easy scroll through matrix of 24 parameters.
LED back light.
Adjustable contrast.

Keypad
3 softkeys; 14 assigned keys.
Embossed overlay.
Panel – NEMA 4X.
Stainless steel membrane switches, 10 million cycles life expectancy.

CPU
16 bit, 40 MHz processor.
512 kB of flash memory.
Real Time Operating System.
48 bit electronic unique identifier number.
Calendar and real time clock.

Environmental
Operating Temperature:
-20°C to 50°C.
Storage Temperature:
-40°C to 85°C.
Humidity:
0-95% Non-condensing.

Enclosure
1/2 DIN panel mount, aluminum housing.
Optional Ex proof, NEMA 4X.
Panel Cutout Dimensions:
7.250″ (184mm) x 3.570″ (91mm)

Power supply
10 to 30 Volt DC, 1.5 A max.
110/220 AC, 50/60Hz .2 A max.

Approvals and Regulatory Compliance
CE

Meets:
AGA 8/API 14.2
AGA 7
OIML Tc 8 Sc 7,
R117, R118
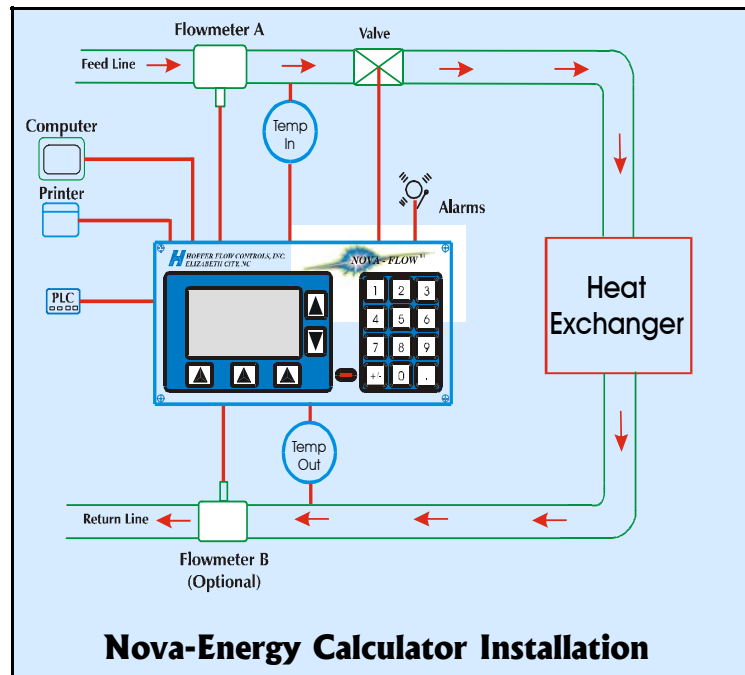ISO 6551, 7637
NIST Handbook
44, 3.37

IR Interface (Optional)
Front panel infrared transmitter/receiver for remote operation and communication.

Diagnostics
Multiple error messages.
Failure detection for RTD and all analog inputs.
System configuration and diagnostics from a personal computer through RS-232 port or IR interface. (Requires IR adapter)

Field expandable hardware and software
Easy to add/replace module.
Software configurable based on installed modules.

Alarms
Multiple visual/audio alarms.
HI/LO, HI/HI, LO/LO.

Batch, BTU
Single/Dual Stage batch operations.
Count UP/DOWN.
BTU functions (Cooling, Heating, Heat/Cool Auto Switch).

Flow compensation and calculation methods
20 point flow linearization. Multiple flowmeter calibration tables(2) including UVC. (2 channels must be analog)

Security Features
Audit Trails with Time/ Date/ID stamping for each change of configuration parameter. Double storage of process variables.

Hardware Specification
Nova-Flow construction allows for full flexibility in selecting flow computer functions. The base Nova-Flow unit provides for one flowmeter input, and 8 digital I/O lines. Seven I/O lines can be configured as Input or Output. The unit has 8 expansion slots for optional I/O modules. Almost any combination of modules can be selected to meet customers individual needs.

BASE UNIT

Flowmeter Input
Selectable: Magnetic coil, MCP coil, TTL, Open Collector, Dry Contact.
Frequency Range: 0.2 to 5,000 Hz.
Amplitude: 10mVrms to 50Vrms.

Digital I/O
7 digital lines selectable for input or output.
One optically isolated digital output.
Software configurable function: pulse output, remote clear, batch start/stop, batch control, alarms.
Selectable Voltage Level: 0-5V,
0-10V, or Open Collector 30Vdc, 250mA max.

I/O MODULES

Dual RTD and dual Analog Input Module
Includes two RTDs and two analog inputs.
RTD selectable for 100, 1000, 2500, and DIN 100 Ohms.
Analog inputs software configured for temperature, pressure, density, specific gravity or flow.
Accuracy: 0.025%.
Resolution: 12 bit.
Range: 4-20mA, or 1-5V.
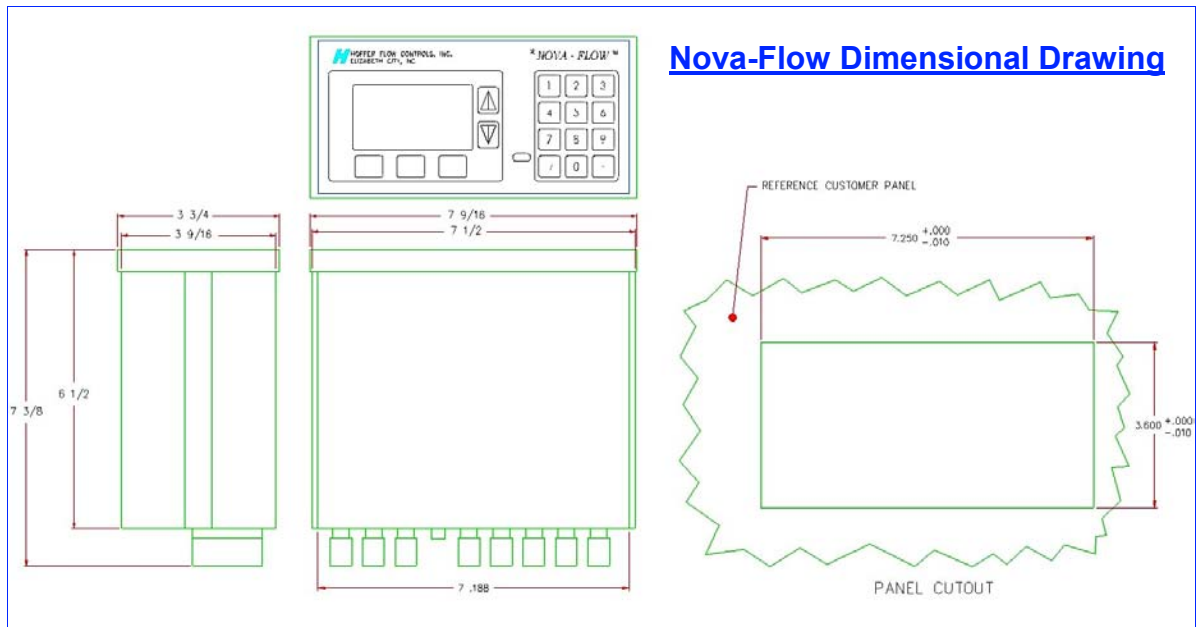Overvoltage, overcurrent protected.

Analog Output Module
Includes analog output.
12 bit true D/A.
Selectable 4-20mA, 1-5V.
Current sourcing or powered from external power supply.

Nova-Flow Dimensional Drawing

Dual Relay Module
Includes two SPDT relays.
Vmax 250 VAC, Imax 5A or
Vmax 125 VAC, Imax 10A.
Software configurable function: flow, temperature, pressure, density alarms (high and low). Optional miniature reed relays available.

RS232 Port Module
Includes one RS232 serial port, screw terminal or DB9 connector.
Printing, communication with personal computer.

RS485 Port Module
Includes one RS485 serial port, screw terminal connector.
Modbus interface.

Second Channel Flowmeter Module
Magnetic coil, MCP coil, TTL/CMOS, Open Collector, Dry Contact.
Quadrature input for magnetic coil, ISO6551 level B compliant pulse security.
Frequency range 0.2 to 5,000 Hz.
Amplitude 10mVrms to 50Vrms.

High Speed Pulse Out Module
Includes two pulse outs for output frequency above 1 to 200 Hz.
1mS pulse width.
Software configurable function: uncorrected volume, corrected volume, mass, energy.

HOFFER FLOW CONTROLS, INC.

The quality system covering the design, manufacture and testing of our products is certified to International Standard ISO 9001.

TÜV Rheinland of North America
ISO9001 Registered Company

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