



# Telemetry Control Unit (TCU800) Pump Controller Upgrade for Indian River County, FL

Provided by:



July 2025





July 28, 2025

Duke Hawkins  
Utilities Water Distribution and Wastewater Collection Manager  
Indian River County, FL

Dear Duke,

Data Flow Systems (Data Flow or DFS) is pleased to submit this proposal to provide Indian River County with the costs associated with upgrading its current Telemetry Control Unit (TCU001) units to the more advanced TCU800 pump controller.

This proposal is based on Data Flow's established 'Trade-up Program'. This program allows an organization to upgrade at a discounted price to the latest pump controller, driving better performance, improved efficiency, and enhanced pump maintenance and management capabilities. Additional discounts over a multi-year period are being provided in consideration of the number of units Indian River County will be upgrading over the next few years.

Strengths of the TCU800 are noted below. A full comparison of the TCU800 versus the TCU001 can be found in the Appendix of this proposal.

- A 5" touchscreen graphical user interface, faster processing power, and additional onboard inputs for increased monitoring and motor protection capabilities.
- Additional pump maintenance, protections, and management features, including Current Monitoring with optional Current Transformers and configurable Seal Fail and High Temp inputs for motors so equipped.
- Versatility to move between VFD and conventional motor starter sites, with the VFD code built-in and ready to use in existing VFD TCU locations.
- 3-year return to factory warranty on all field DFS labeled components, including lightning damage, and an emergency loaner program is available.

We look forward to the opportunity to discuss this proposal with you in more detail.

Sincerely,

*Frederick Toone*

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Solutions Consultant  
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## EXECUTIVE SUMMARY

Data Flow has been providing Indian River County with Lift Station Monitoring and Control solutions since 1996. DFS has provided a solution that has scaled with the County for almost 30 years, with new features and hardware always designed to be backward compatible with your existing installations.

As you know, the TCU001 has been retired after more than two decades in production. Although it is no longer in production, we are committed to providing long-term service and support for many years to come, including repair services and warranty replacements for TCU001 units at our Melbourne, FL facility, however end users need to prepare for the transition to the TCU800.

Indian River County currently has approximately 270 TCU001 units, including those installed at lift stations and additional spare units in inventory. The TCU800 is a direct plug-and-play replacement for the TCU001, requiring minimal time and resources to upgrade in the field. In consideration of our long-standing relationship and the capital planning and expenditures of upgrading, DFS is providing trade-up and quantity discounts for this upgrade equivalent to 32% off MSRP. DFS can commit to providing this percent discount over the upgrade cycle to provide a meaningful discount from each year's stated MSRP. We believe upgrading to the TCU800 will deliver the latest technology with feature enhancements and be the most economic approach, both short-term and long-term, when looking at the total cost of ownership.

## QUALIFICATIONS

### Notable Data Flow Differentiators

- More than three hundred (300) utility customers, including over 11,000+ RTUs installed and operating in Florida alone.
- Designed, manufactured, tested, and service provided in-house at the Data Flow facility in Melbourne, FL, since 1981.
- Designed to be installed, configured, operated, and maintained by the end user, with training and assistance directly from Data Flow.
- 24/7/365 technical support and service from dedicated Data Flow full-time employees with remote access and troubleshooting capability.
- Able to integrate Network, Radio, and Cellular communication, or even redundancy, with two methods of communications per RTU as backup.
- Forward and backward-compatible solutions that extend the product lifespan, ensuring that customers can fully benefit from our latest innovations and improvements.
- Mobile access to deliver a quick and easy diagnosis of the SCADA server status.

Additional DFS features and services include

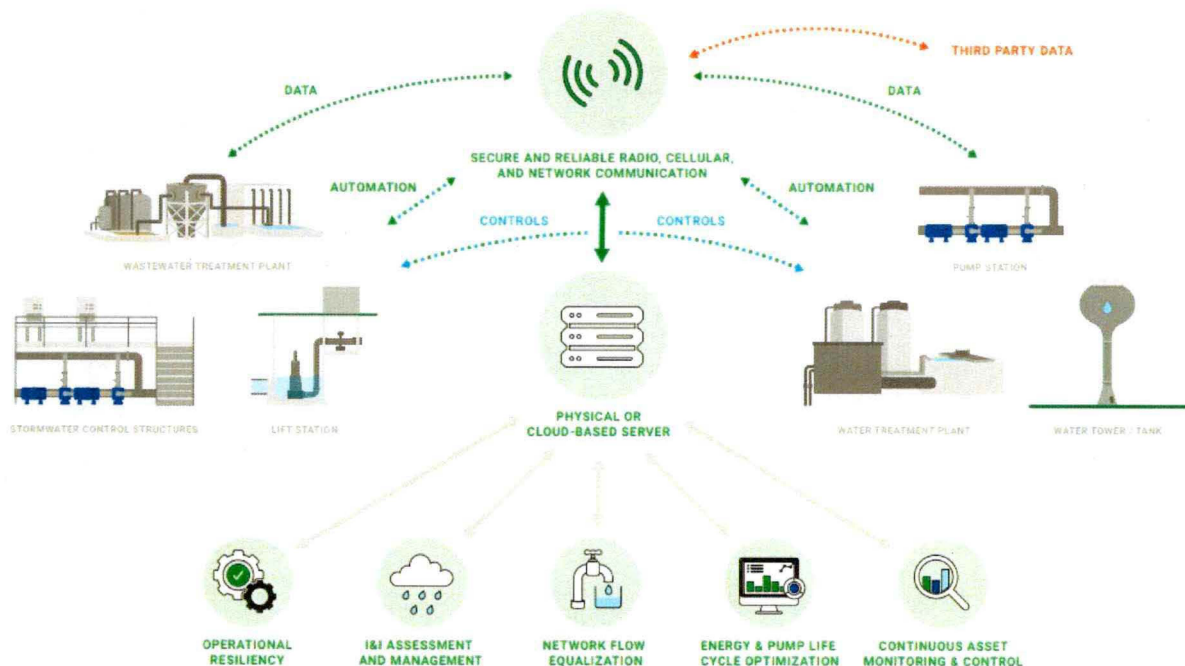


- No access limits or charges for additional user seats
- No annual user fees
- No annual software license fees
- No incremental group rates for future points or tags
- No annual maintenance fees or annual service contract required
- No cost for SCADA software and/or module firmware revisions for life - All revisions and updates are available free of charge
- No cost for telephone-based technical support
- SCADA Server remote access connection (secure VPN by owner) permits our technicians to troubleshoot in real-time alongside your operators and technicians
- Multiple communication/protocol drivers and system/user partitioning
- Three (3) year warranty on DFS hardware (including radio) against lightning and surge damage.

## Our SCADA Approach

Data Flow is recognized as an industry leader providing remote monitoring and control for water, wastewater, and stormwater utilities. From design to implementation, Data Flow delivers reliable and cost-effective distributed control systems for utilities of any size.

Our end-to-end approach to managing remote infrastructure is shown below:





## Our Complete SCADA System

Manufactured completely in the U.S., the Data Flow SCADA system includes hardware, software, integration, and 24/7 support. Noted elements are shown below.

### Telemetry Control Unit (TCU800)

- An automatic lift station pump controller that supports the operation of up to 3 pumps using level input from floats and/or pressure transducers. Includes motor protection features such as monitoring three-phase power, pump current, seal failures, and overload contacts.



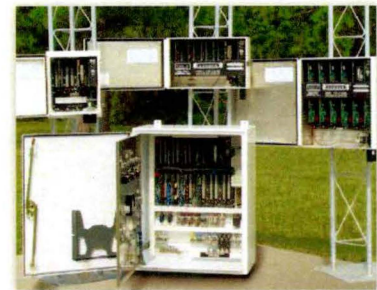
### HyperTAC HMI Software & Hyper SCADA Server

- Browser-based graphical user interface with statuses, historical data, reports, alarm notifications, and trending. No I/O point count license restrictions, no database license required, and includes virtually unlimited client seats.



### 200 Series Remote Terminal Unit

- Modular 'building block' architecture using a passive backplane that provides power, communications, I/O, and a PLC. No tools or handling of signal wires are required to replace a module with a spare.



### Multiple Communication Methods

- Secure and reliable radio, cellular, and network communication. The TCU800 supports simultaneous communication modes.

## SCOPE OF WORK

This proposal offers the TCU800 Pump Controller to replace the existing TCU001 unit. The County will perform the replacements, however DFS can provide support / installation services where needed. All elements of the existing TCU001 installations, such as mounting and wiring can remain as they are, excluding any stations where the County may choose to upgrade the enclosure as well. Each TCU800 and/or enclosure assembly will include a P3 Connector for additional input capabilities and a TCU800 USB Drive for saving station and address configurations. The TCU001 address strap is not used with the TCU800, however it's recommended the existing address strap be maintained inside the enclosure, should a TCU001 be reinstalled. TCU001 configurations must be manually transferred / entered into the TCU800 initially. This process can be completed ahead of time by downloading the TCU001's configurations via the PLC Editor (HT4 App), then

manually entering the configurations into the TCU800 prior to visiting each site. If a copy of station configurations is kept at each lift station, manual transfer of configurations can be done upon arrival at each site.

Any existing RIO-032/128 connected to a TCU001 can be utilized as installed. If the RIO-032/128 is controlled by the TCU001's VFD Mode Program, the swap to a TCU800 may require manual transfer of configuration data. However, if the RIO-032/128 is connected to the TCU001 for expanded I/O points, manual entry of the Modbus register data will be required. The exact Modbus register data must be documented on the TCU001 and manually added to the TCU800 from the onboard touchscreen or laptop interface.

#### TCU001 to TCU800 Checklist

- Ensure retaining clips are removed from P1, P2, P3 and P4 connectors
- Ensure TCU001 address strap is placed to the rear of the enclosure- not needed with TCU800
- Locate a place in the enclosure to secure the TCU800 Configuration USB mount. Protect from presence of H2S where necessary
- It is recommended the Alarm Light and Alarm Horn are powered through isolation relays
- Verify all surge protection is properly installed and functional through use of LED's and/or fuses
- If a station is 480V and the TCU800 will monitor 3-phase power with a 480V kit, replace existing resistors and jumpers (100K/Jumper) with three (3) 49.9 Ohm resistors



## COST PROPOSAL

### TCU800 UPGRADE COST (BASED ON 270 UNITS)

Indian River County Pricing Totals				
Item	Description	Unit Price	Qty	Extended
*DFS-00540-008-21	TCU800 Pump Controller	\$6,054	270	\$1,634,580
Trade-Up Discount	IRC Discount (32%)	(\$1,937)	270	(\$522,990)
DFS-00540-108-07	P3 Connector & USB Drive	\$118	270	\$31,860
Freight	Shipping to Indian River County	\$15	270	\$4,050
Subtotal:				<b>\$1,147,500</b>
OPTIONAL ADDER				
008-0078 (X3)	Three (3) 100 Amp CTs	\$390	<b>270</b>	\$105,300
Adder Total:				<b>\$105,300</b>
Total				<b>\$1,252,800</b>

\* - Current 2025 Pricing

## QUOTATION NOTES:

1. Only those parts specifically listed above are included in this quotation.
2. DFS will accept the trade-in commitment for TCU001 via comment on your purchase order, and the trade-in units can be shipped to DFS after installation.
3. DFS can provide the trade-in discount of 32% off Manufacturers Suggested Retail Price (MSRP) at the time of purchase order for the TCU800 Pump Controller (DFS-00540-008-21) through December 31, 2028.
4. This quotation does not include onsite services.
5. All applicable taxes must be added to the quotation total.
6. The estimated ship dates are 45 days after receipt of the order. Ship dates are subject to change based on component availability or global supply chain constraints.
7. All items shipped will be billed at the time of shipment. Shipping charges are quoted.
8. Pricing is subject to the [Data Flow Systems Terms and Conditions](#). DFS reserves the right, upon notice to Customer, to revise selling prices to adjust for changes in laws, such as changes to taxes, tariffs, fees, trade penalties, or any and all other

government required duties on goods or services.

9. DFS-branded products carry a one (1) year warranty against defects in material and workmanship. All Plug-in Function Modules, Telemetry Control Units, Power Supply Modules, and Radio Interface Modules carry an extended two (2) year return-to-factory warranty and are covered against damage due to lightning and surge for the entire warranty period when installed per factory-approved requirements.



## APPENDIX



### TCU001

- **Processing Core:** Dual-20 MHz 8051 Microcontroller
- **Current:** 150 mA (typical); 200 mA (maximum)
- **Display:** 4-line LCD User Interface display, with membrane type keypad
- **Integrated Radio:** 2W @ 200 MHz Radio; 5W @ 400 MHz Radio
- **Integrated Network:** Ethernet
- **Integrated Cellular:** Cellular (Verizon)
- **Simultaneous Communication Modes:** Not available
- **Service Port:** RJ-11 Modular
- **Digital Monitoring:**
  - (3) Motor run status
  - (6) Float contacts
  - (1) External phase monitor bypass
  - (1) Auxiliary input (pulse-counting capable)
  - (1) Alarm silence override
- **Analog Input Rating:**
  - 4-20 mA @ 250  $\Omega$
  - 1-5 V @ 100 k $\Omega$
  - 12-bit precision
- **Analog Monitoring:**
  - Analog1 Voltage or current mode
  - Analog2 Current mode only
- **DC Bias:** 24 VDC, 100 mA



VS



### TCU800

- + **Processing Core:** GHz ARM Cortex A8 Microprocessor
- + **Current:** 300 mA (typical); 750 mA (maximum)
- + **Display:** 5" 800X480, TFT Touchscreen Graphical User Interface (GUI), with 750 nits brightness for viewing outdoors
- **Integrated Radio:** 2W @ 200 MHz Radio; 5W @ 400 MHz Radio
- **Integrated Network:** Ethernet
- + **Integrated Cellular:** Cellular (Verizon); **Physical HSS & Cloud-Server**
- + **Simultaneous Communication Modes:**
  - Integrated Radio AND External Cellular**
  - Integrated Radio AND Network**
  - Integrated Cellular AND Network**
- + **Service Port:** **Dual USB 2.0 Allows Users to download newly released Firmware and update TCU's locally**
- + **Digital Monitoring:**
  - (3) Motor run status
  - (6) Float contacts
  - (1) External phase monitor bypass
  - (1) Auxiliary input (pulse-counting capable)
  - (1) Alarm silence override
  - (3) Seal failure trip**
  - (3) High temperature trip**
- + **Analog Input Rating:**
  - 4-20 mA @ 250  $\Omega$
  - 1-5 V or **0-10 V @ 120 k $\Omega$**
  - 15-bit precision**
- + **Analog Monitoring:**
  - Analog1 Voltage or current mode
  - Analog2 Current mode only
  - Analog3 Voltage or current mode**
  - Analog4 Voltage or current mode**
- + **DC Bias:** 24 VDC, **300 mA**



### TCU001

vs

### TCU800

- **3-Phase Current Monitoring:** Not available
- **Battery Backup:** Supports external 12V sealed lead-acid battery
- **Input Protection:** MOV, TVS, Opto-Isolated
- **RS-232 port:** 9600 baud (MODBUS Server)
- **RS-485:** 9600 baud (MODBUS Client)
- **Ethernet:** 10 Mbit/s
- **Station Addressing:** Address Strap
- **Local I/O Expandability:** Expandable with RS485 modules (RDP, RIO, etc.)
- **Environmental Protection:** Factory-applied acrylic conformal coating
- **Environmental Rating:** Relative Humidity: 0-100%; Atmosphere Pressure: 75-106 Kpa; Pollution Degree 2
- **Voltage:** 120VAC, 60Hz
- **Digital Input Reading:** 10-30 VDC/VAC; 30-300 VDC/VAC with external resistors
- **Digital Input Impedance:** 6 kΩ
- **H-O-A Switch:** 3 x 3-position switches for Hand-Off-Auto operation
- **Pump Output Rating:** 120-240 VAC, 60 Hz, 1 A, Pilot Duty
- **Alarm Output Rating:** 120 VAC, 60 Hz @ 0.5 A; 24 VDC @ 1 A
- **3-Phase Voltage Monitoring:** 240VAC single- or three-phase; 480VAC three-phase using external resistors
- **Control Programming:** Fixed Speed motor/pump control **OR** User selectable VFD Mode control (Optional Expandable I/O required)
- **Operating Temperatures:** -10°C (14°F) to 60°C (140°F); (up to 50°C when using recommended backup battery)
- **Dimensions:** 5.75" x 8.75" x 5.45"
- **Enclosure:** Black Anodized Aluminum

- + **3-Phase Current Monitoring:** Configurable 0-250A per-phase using external current transformers
- **Battery Backup:** Supports external 12V sealed lead-acid battery
- + **Input Protection:** MOV, TVS, **on-chip transformer isolation; Tested to IEC 61000-4-5 (Level 4)**
- + **RS-232 port:** **9600-115200 baud** (MODBUS Server)
- + **RS-485:** **9600-115200 baud** (MODBUS Client)
- + **Ethernet:** **100 Mbit/s**
- + **Station Addressing:** **USB Configuration Stick**
- + **Local I/O Expandability:** Expandable with RS485 modules (RDP, RIO); **Extension card slot for future integrated I/O products**
- + **Environmental Protection:** **Sealed enclosure with EPDM rubber gaskets**
- **Environmental Rating:** Relative Humidity: 0-100%; Atmosphere Pressure: 75-106 Kpa; Pollution Degree 2
- **Voltage:** 120VAC, 60Hz
- **Digital Input Reading:** 10-30 VDC/VAC; up to 300 VDC/VAC with external resistors
- **Digital Input Impedance:** 5.5 kΩ
- **H-O-A Switch:** 3 x 3-position switches for Hand-Off-Auto operation
- **Pump Output Rating:** 120-240 VAC, 60 Hz, 1 A, Pilot Duty
- **Alarm Output Rating:** 120 VAC, 60 Hz @ 0.5 A; 24 VDC @ 1 A
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