ACLARA STAR NETWORK AMR/AMI SYSTEM

ASK THE EXPERTS

OSC is your Automated Meter Reading (AMR) and Advanced Metering Infrastructure (AMI) system expert. When you have questions or need assistance in selecting the proper equipment for the job, call us!
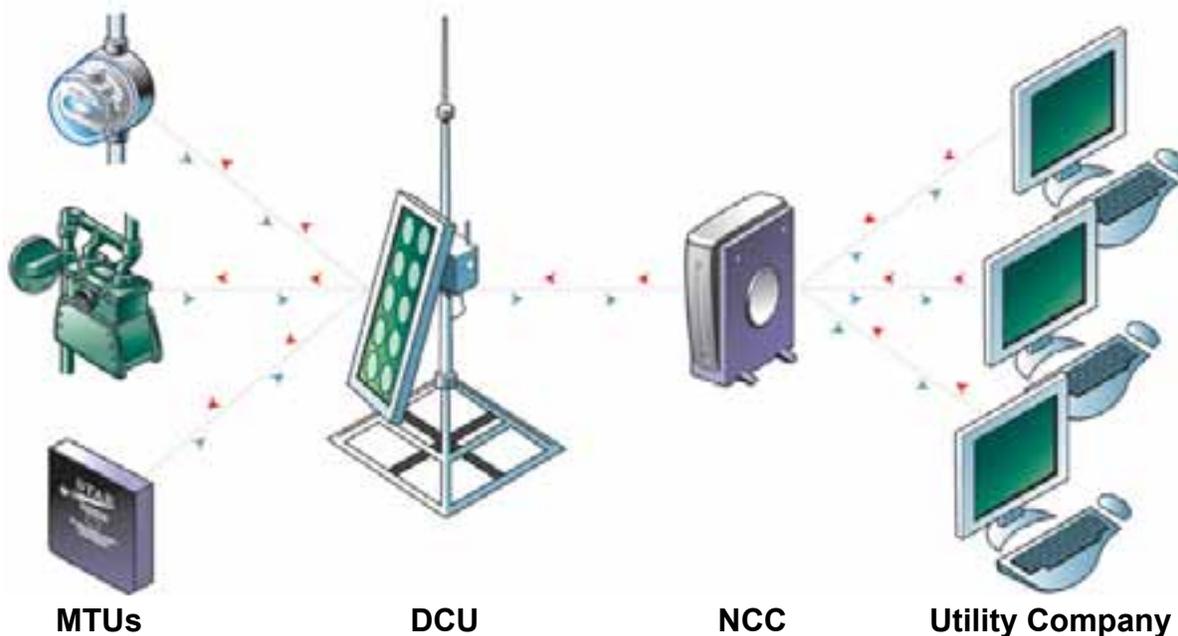
Meter Transmission Unit (MTU)

OSC offers both indoor and outdoor MTUs for gas, water, electric and other AMR applications. Single- and dual-channel models are available in many combinations of reed, pulse generator and encoder connection types.

Data Collection Unit (DCU)

The DCUs collect data transmitted by the MTUs, providing reliable and flexible communication for all your metering needs.

Network Control Computer (NCC)

The STAR Network Computer collects, validates, processes, and stores data transmitted by the STAR Network DCUs. It provides billing, customer service, operations, and other utility departments with timely access to comprehensive account information. The STAR Network system also provides a complete range of customizable management and diagnostic reports.

MTUs   **DCU**   **NCC**   **Utility Company**

A

// SUBMETERING

STAR® Network Pulse MTU

METER TRANSMISSION UNIT

INDOOR

The STAR Network pulse MTU makes meter reading more efficient and allows for reduced costs, improved billing, and managed resources.

The MTU transmits accurate meter readings on defined schedules. Its powerful, narrow-band transmitter broadcasts over FCC-licensed, 450- to 470-MHz radio frequencies. The STAR Network Pulse MTU works with gas, water, electric, and BTU meters or other devices that provide an electric pulse output.

Each STAR Network Pulse MTU delivers

Long-lasting performance
Contains a 15-year permanent battery

Secure and reliable technology
Ensures data and system security

Long-range power
Transmits meter data over a range of at least one mile

Dual-port operation (optional)
Handles compound meters or multiple-meter installations including gas and water combinations
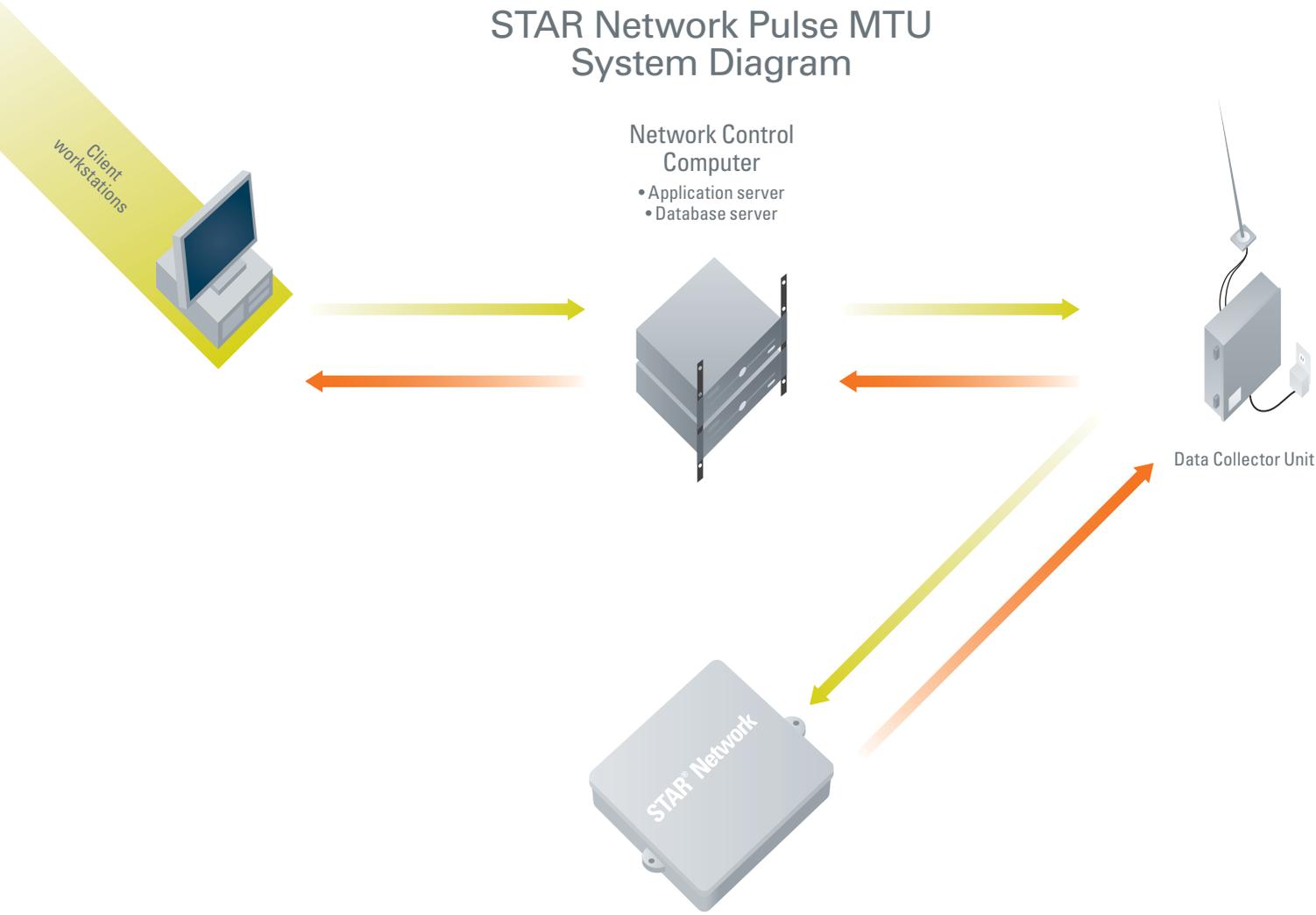
Additional data
Reports data such as account information, battery condition, and tamper and error status in addition to meter readings

Pulse input
Allows connection to meter or device with Form A contact closure and less than three pulses per second

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National distributor ACLARA SUBMETERING products

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PHONE: (614) 777-1005 * FAX: (614) 777-4511
800-853-2537 WWW.OSCSUBMETERING.COM

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STAR Network Pulse MTU
System Diagram

Client
workstations

Network Control
Computer
• Application server
• Database server

Data Collector Unit

STAR® Network

STAR® Network

Pulse MTU

* Pulse - Form A contact closure

The pulse MTU links the meter to the STAR Network system, capturing valuable data and providing the benefits of reliable AMI.

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ACLARA™

STAR® Network Encoder MTU

METER TRANSMISSION UNIT

INDOOR

The STAR Network encoder MTU makes meter reading more efficient and allows for reduced costs, improved billing, and managed resources.

The MTU transmits accurate meter readings on defined schedules. Its powerful, narrow-band transmitter broadcasts over FCC-licensed, 450- to 470-MHz radio frequencies. The device works with encoder-register water meters that provide electronic output.

Each STAR Network Encoder MTU delivers

Long-lasting performance
Contains a 15-year permanent battery

Secure and reliable technology
Ensures data and system security

Long-range power
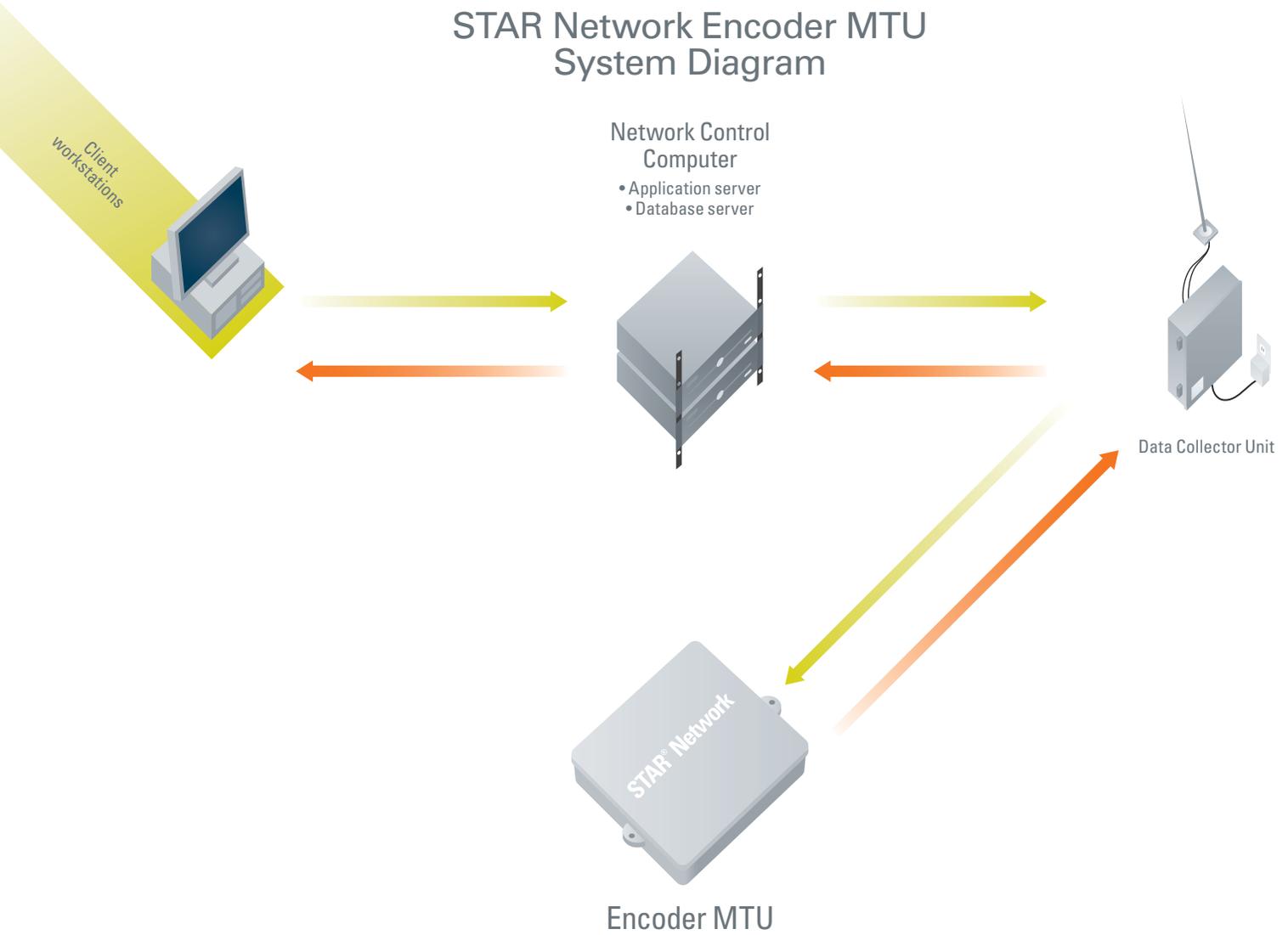Transmits meter data over a range of at least one mile

Dual-port operation (optional)
Handles compound meters or multiple-meter installations including gas and water combinations

Additional data
Reports data such as account information, battery condition, and tamper and error status in addition to meter readings

STAR Network Encoder MTU
System Diagram

Client
workstations

Network Control
Computer

• Application server
• Database server

Data Collector Unit

STAR® Network

Encoder MTU

The encoder MTU links the meter to the STAR Network system, capturing valuable data and providing the benefits of reliable AMI.

STAR® 3300 Water MTU

METER TRANSMISSION UNIT

Delivers two-way communication and a time-synchronized network to provide a utility with a snapshot of system water consumption at a single point in time.

The 3300 water MTU uses the efficient, low-power, high performance STAR Network RF technology to transmit hourly, interval usage data, and two-way communication to the utility. The MTU supports up to 8-digit registers and delivers time-stamped reads on a time-synchronized network, allowing for advanced water distribution management.

Time Synchronization

The 3300 water MTU features time synchronization to ensure that all system clocks are set to the same time. This allows a utility to take a complete system read and use the data to reconcile the amount of water entering the system to the billable water that is consumed, thus identifying the probability of system leaks.

Each STAR Network Water MTU delivers

Long-lasting performance
Contains a 20-year lithium-ion battery

Two-way communication

Captures hourly meter data

Provides system-wide time synchronization

Supports up to 8-digit registers

Operates over FCC-licensed radio frequencies

Hourly Reads

The 3300 water MTU delivers hourly, time-stamped reads, providing detailed information about water usage and identifying anomalies such as potential leaks and meter tampering.

System Data Support

The STAR Network system provides full data support from the meter to your utility office. The system's Network Control Computer (NCC) manages and searches MTU data, tracks MTU installations, configures system settings and user roles, and creates reports to monitor MTUs in logical groups or by individual accounts.

Standard System Reports
- Duplicate meter serial number request
- Duplicate MTUs report
- Reception report
- Tamper report
- Total consumption
- Zero consumption
- Missing reads
- MTU:DCU redundancy

Specifications

Network type	Two-way[1]
Transmit/receive frequency	450-470 MHz (FCC licensed)
Antenna	Internal
Installation locations	Interior wall mount, exterior wall mount, pit/vault[2]
Read interval	Hourly–top of the hour readings default
Transmit interval	Four times per day default
Inputs	Single or dual
Wire length	12 feet-22 AWG solid wire
Battery life	20 years[3,4]
End point to end point time difference	< 1 min
Physical characteristics	6.38" W x 4.25" H x 1.44" D
Weight	1 lb
Color	Gray
Operating temp range	-30°C to +70°C
Operating humidity	0% - 100% condensing
Transmit power options	Standard and extended range available
Approvals	FCC part 90 : Industry Canada RSS-119
Warranty	20 years[5]
Meter compatibility	All major manufactures of water meters
Network topology	STAR Network
Network compatibility	Aclara DCU IIJ
Handheld interface	Windows Mobile handheld
Meter interface	Pulse or encoder
Data resolution	4-8 digits[6]
Maximum meter pulse frequency	Three pulses per second[7]

Notes:
1: Two-way communication for time synchronization and time management
2: Pit/vault installation under non-metallic lid
3: Battery life is stated at default settings
4: Standard range
5: Refer to Aclara standard warranty for details
6: Reports all digits that are electronically available from register
7: Pulse input only

Specifications are subject to change without notice.

STAR® Network Gas MTU

METER TRANSMISSION UNIT

OUTDOOR

The STAR Network system provides the largest number of direct-mount gas MTUs in the industry, ensuring accurate meter reads and supporting gas-conservation efforts.

The gas MTU contains a powerful narrowband transmitter that sends meter readings over FCC-licensed, 450- to 470-MHz radio frequencies at regularly scheduled intervals. Compatible with almost all commercially available gas meters, the STAR Network gas MTU provides the benefits of the industry's most reliable AMI/AMR product to gas customers.

Each STAR Network Gas MTU delivers

Long-lasting performance
Contains a 20-year lithium-ion battery

Ease of installation
Direct mounts in the field without interrupting a customer's gas service. Indirect-mount versions are also available

Secure and reliable technology
Ensures data and network security

Long-range power
Transmits meter data over a range of at least one mile

Hermetically sealed design
Stands up to harsh basement and outdoor installations

Theft detection and monitoring
Signals to alert of possible meter tampering with optional magnetic detection

Dual-port operation
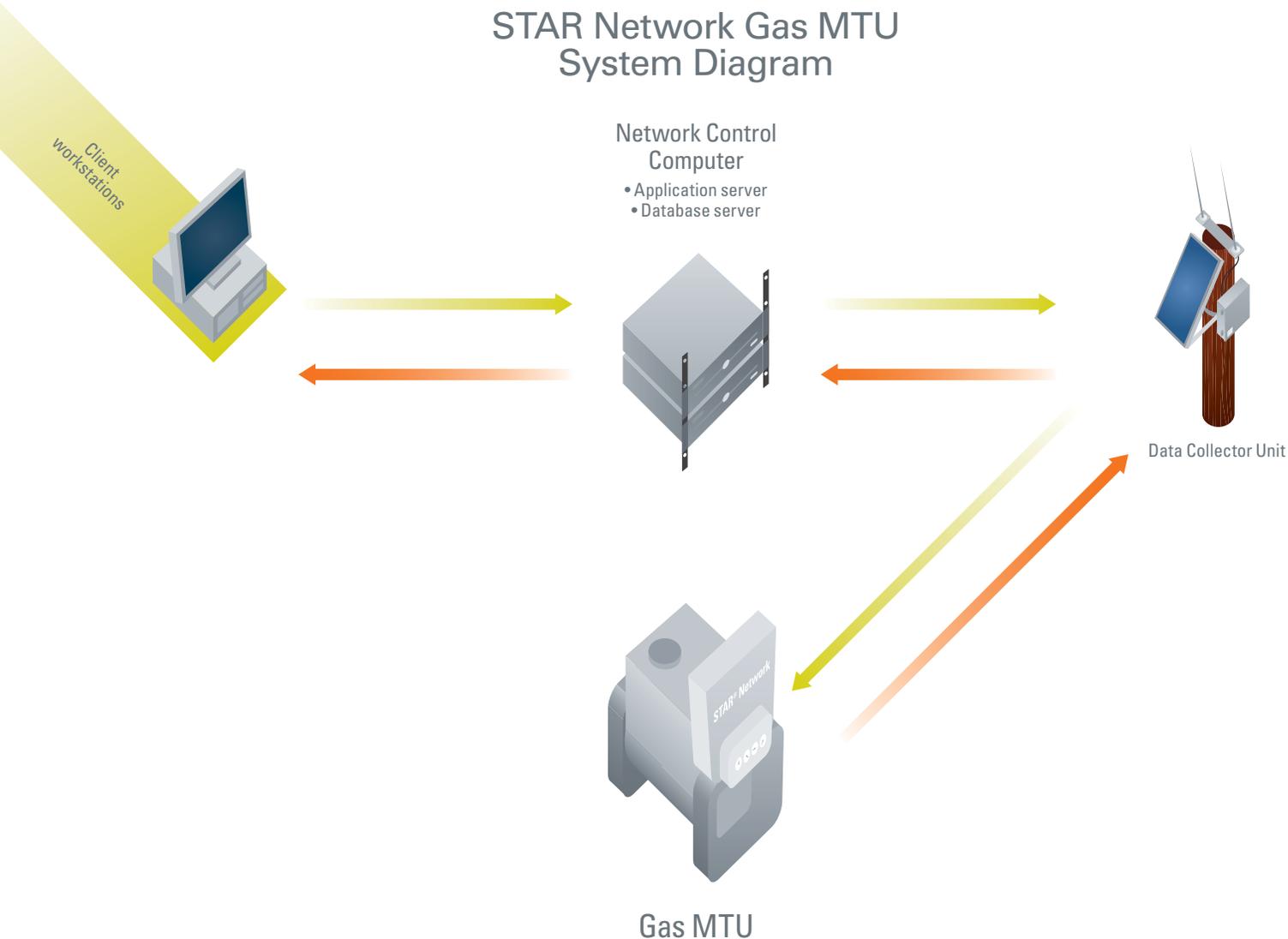Adapts to multiple-meter installations, including gas and water combinations

Safety in hazardous conditions
Delivers Factory Mutual approval as a non-incendiary device

Additional data
Reports account information, meter identification, meter reading, battery condition, and tamper status

STAR Network Gas MTU
System Diagram

Client workstations

Network Control Computer
• Application server
• Database server

Data Collector Unit

Gas MTU

The gas MTU links the meter to the STAR Network system, capturing valuable data and providing the benefits of reliable AMI.
STAR Network MTUs are capable of one- or two-way communications.

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STAR® Network Water MTU

METER TRANSMISSION UNIT

OUTDOOR

The STAR Network water MTU makes meter reading more efficient and allows reduced costs, improved billing, and managed resources.

The MTU transmits accurate meter readings on defined schedules. Its powerful, narrowband transmitter broadcasts over FCC-licensed, 450- to 470-MHz radio frequencies. The STAR Network MTU works with all pulse- and encoder-register water meters that provide electronic output.

Each STAR Network Water MTU delivers

Long-lasting performance
Contains a 20-year permanent battery

Secure and reliable technology
Ensures data and system security

Long-range power
Transmits meter data over a range of at least one mile

Hermetically sealed design
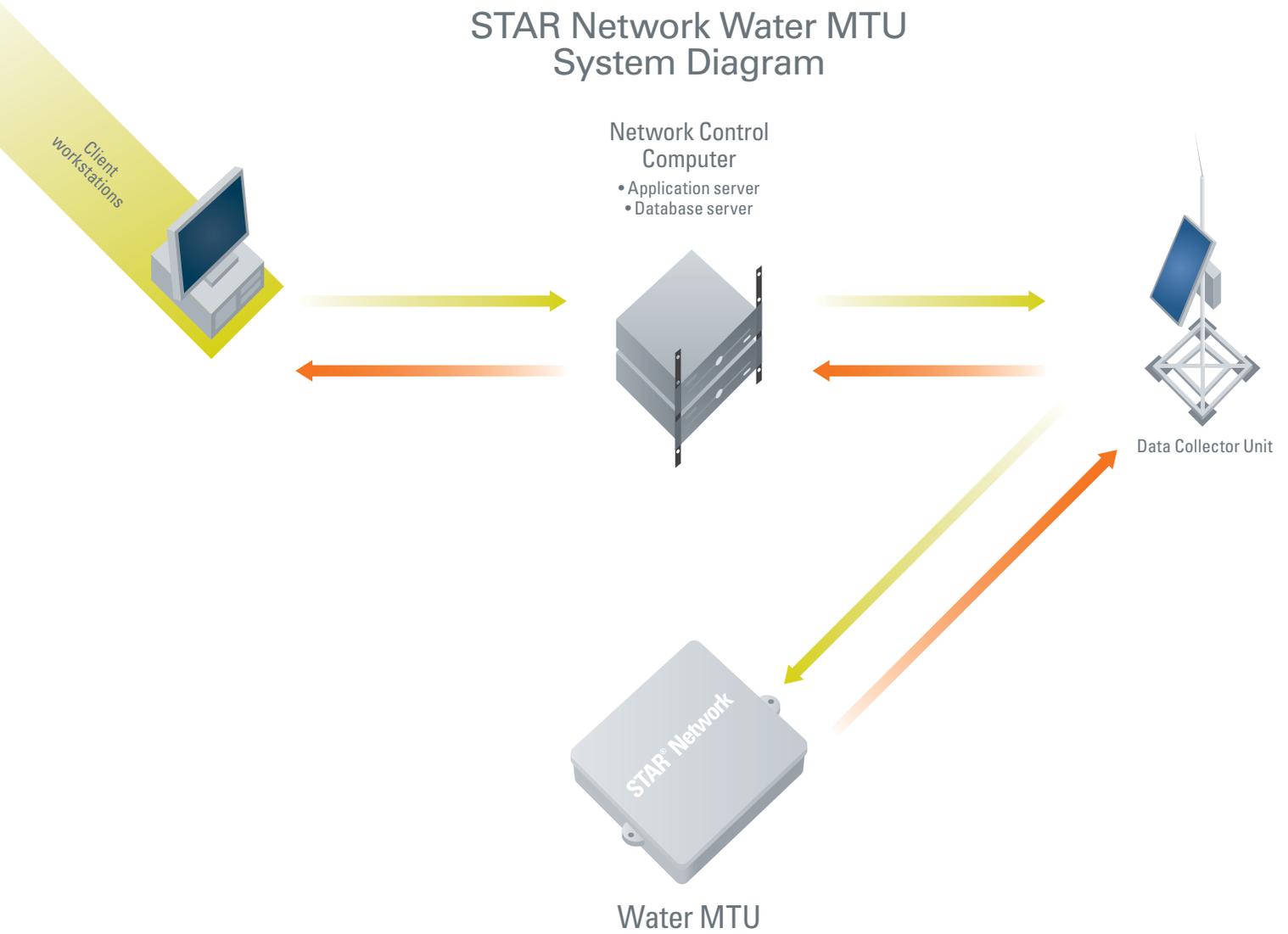Stands up to harsh basement and pit installations

Dual-port operation
Handles compound meters or multiple-meter installations including gas and water combinations

Additional data
Reports data such as account information, battery condition, and tamper and error status in addition to meter readings

STAR Network Water MTU
System Diagram

Client workstations

Network Control Computer
• Application server
• Database server

Data Collector Unit

STAR® Network

Water MTU

The water MTU links the meter to the STAR Network system, capturing valuable data and providing the benefits of reliable AMI. STAR Network MTUs are capable of one- or two-way communications.

// SUBMETERING

STAR® Network Extended-Range MTU

METER TRANSMISSION UNIT

OUTDOOR

STAR Network extended-range water and gas MTUs provide high-power output in areas on the outskirts of coverage and locations with structural challenges. These MTUs make meter reading in hard-to-read locations more efficient and allow customers to reduce costs, improve billing, and manage resources.

The MTUs transmit accurate meter readings on customer-defined schedules. Powerful, narrow-band transmitters broadcast over FCC-licensed 450- to 470-MHz radio frequencies.

STAR Network extended-range MTUs direct mount to most commercially available gas meters and also work with pulse- and encoder-register water meters that provide electronic output.

Each STAR Network MTU delivers

Long-lasting performance
Contains a long-lasting lithium-ion battery

Secure and reliable technology
Protects data from unauthorized access

Long-range power
Transmits meter data over a range of at least one mile

Hermetically sealed design
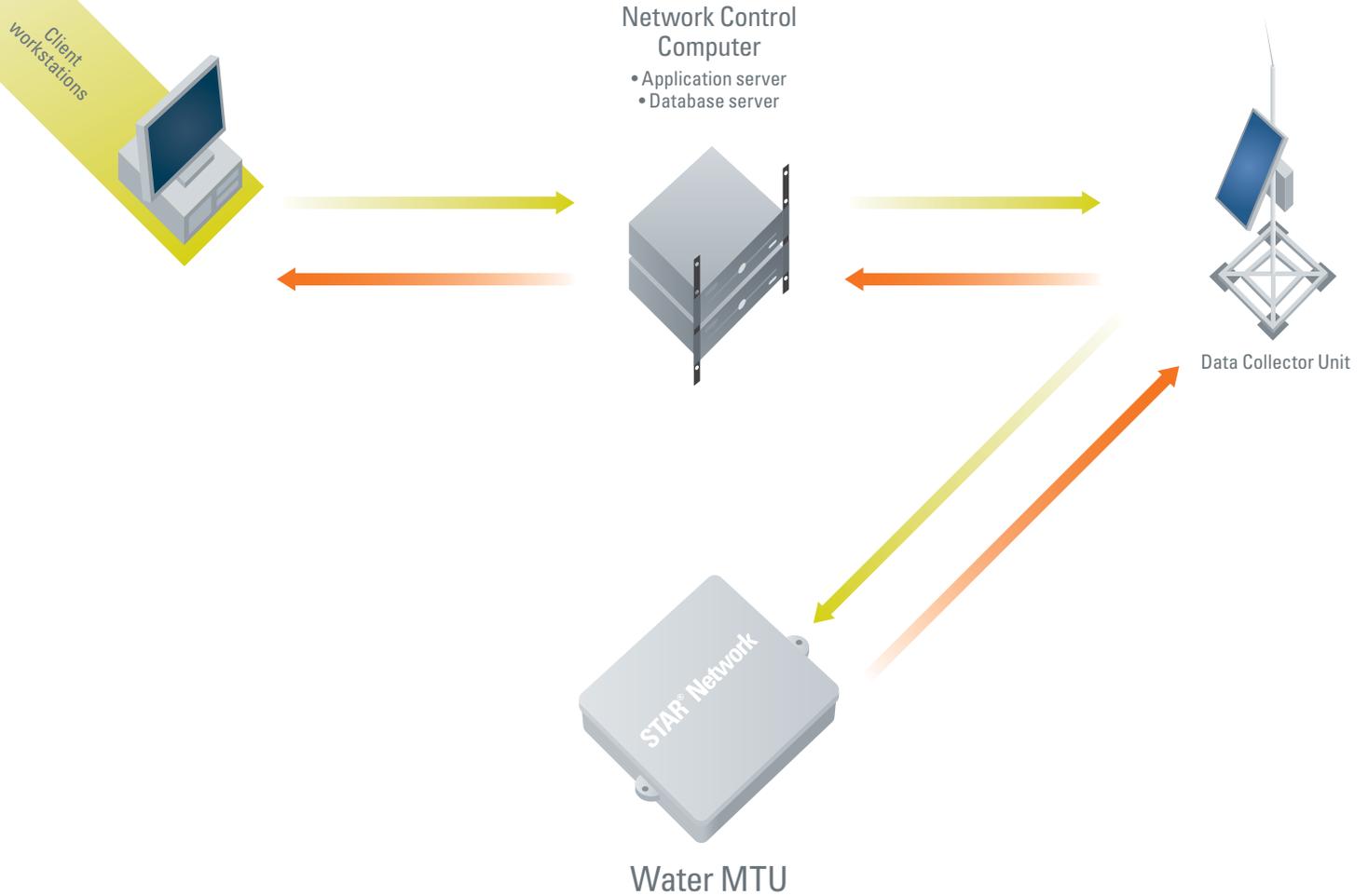Stands up to severe environments and harsh conditions in basements and pits

Dual-port operation
Adapts some meter types to a multiple-meter configuration including gas and water combinations

Comprehensive data
Reports account information, meter identification, meter reading, battery condition, and tamper and error status
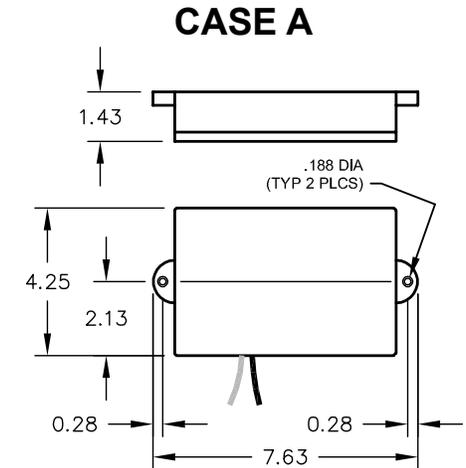
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STAR Network Extended Range MTU
System Diagram

Client workstations

Network Control Computer
• Application server
• Database server

Data Collector Unit

STAR® Network

Water MTU

The water MTU links the meter to the STAR Network system, capturing valuable data and providing the benefits of reliable AMI.
STAR Network MTUs are capable of one- or two-way communications.
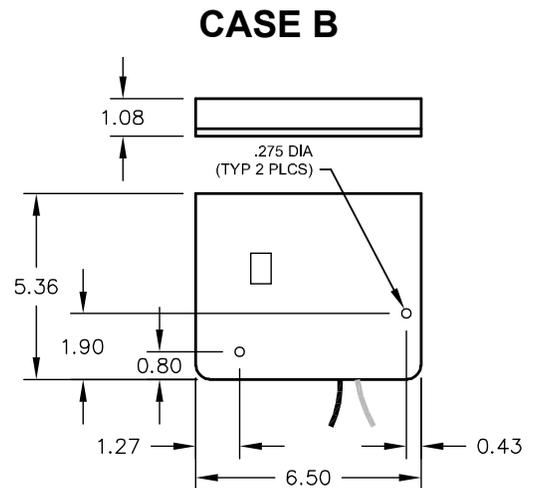
ACLARA MTU MODEL DESCRIPTIONS

Part No.	Submetering Indoor MTUs	Case
501-7150D	Single Encoder	A
501-7150R	Single Reed	A
501-7150R(A)	Single Pulse Gen.	A
501-7150DD	Dual Encoder, Encoder	A
501-7150RR	Dual Reed, Reed	A
501-7150RD	Dual Reed, Encoder	A
501-7150RR(AR)	Dual Pulse Gen, Reed	A
501-7150RR(AA)	Dual Pulse Gen, Pulse Gen	A
501-7712RB	Single Reed (High Read Rate)	B

Part No.	Utility Outdoor MTUs	Case
501-6327E	Gas Direct Mount	B
501-6327E-RO	Gas Direct Mount - Rockwell	B
501-8150D	Single Encoder	A
501-8150R	Single Reed	A
501-8150R(A)	Single Pulse Gen.	A
501-8150DD	Dual Encoder, Encoder	A
501-8150RR	Dual Reed, Reed	A
501-8150RR(AA)	Dual Pulse Gen., Pulse Gen.	A
501-8150RD	Dual Reed, Encoder	A

Part No.	3000 Series 2-Way MTUs	Case
3321-012-DB	Single Encoder, 12' wire	A
3322-012-DB	Dual Encoder, 12' wire	A
3321-012-DBW	Single Encoder, 12' wire, Ext. Range	A
3322-012-DBW	Dual Encoder, 12' wire, Ext. Range	A
3321-012-RB	Single Pulse, 12' wire	A
3322-012-RB	Dual Pulse, 12' wire	A
3321-012-RBW	Single Pulse, 12' wire, Ext. Range	A
3322-012-RBW	Dual Pulse, 12' wire, Ext. Range	A

CASE A

CASE B

Dwg# 0902-00843-B Rev A

B