Automatic Transfer Switch Controller

PRODUCT SPECIFICATION B37944 Rev. E

DTSC-200A

- Premium ATS Controller
- Reliability and Durability
- Improves Operational Efficiency
- Maintenance optimized
- Modbus TCP communication [1]

The ultimate ATS controller for dependable power transfers in critical applications

The DTSC-200A (Digital Transfer Switch Control) is a premium Automatic Transfer Switch (ATS) controller designed for environments where uninterrupted power is essential, such as hospitals, data centers, office buildings, and manufacturing plants. It ensures safe and reliable electrical power transfer between sources, offering unparalleled versatility with multiple configurations, advanced monitoring, and customizable features. Built on a field-proven platform, the DTSC-200A combines cutting-edge technology, intuitive operation, and robust configurability to address the unique challenges of critical power systems while enhancing efficiency, safety, and user experience.

Improves System Safety

- **In-Phase Monitoring:** Ensures transfers occur within a safe phase angle difference, reducing risks during source switching.
- **Secure Overlap Control:** Shunt trip signals / remote breaker tripping prevent sources from being paralleled for longer than desired, ensuring safe operation. [2]
- **Prioritize critical loads** by shedding non-essential ones during power shortages. [2]
- **Elevator Pre-Signal:** Delivers a configurable timed warning signal to elevator systems prior to power transfers, enhancing building safety. [3]

Improves Operational Efficiency

- **Reduced Downtime:** Intelligent limit switch feedback ensures plausibility before initiating transfers, minimizing errors and delays.
- **Protect sensitive equipment** by disconnecting motor loads during power transfers [3]
- **Optimize power usage** by prioritizing your preferred energy source. [2]
- **Routine Health Checks:** engine exerciser programs (load tests) ensure emergency sources are regularly tested and ready for operation.

[1] available in Package 2

[2] via internal conditions or remote command

[3] neutral delay timers (1 to 6500 s), elevator pre-signal timers (1 to 6500 s), motor load disconnect timers (1 to 6500 s), stable timers (1 to 6500 s), outage timers (0.1 to 99.9 s), engine start delay timers (1 to 300 s)

Reduces Installation and Maintenance Complexity

› **Global, Field-Proven Design:** Built on the trusted DTSC-200 platform, offering multilingual support including English, German, Spanish, Polish, Russian, and French to meet the needs of diverse users worldwide.

› **Quick and Secure Setup:** simply configure the system using Woodward's free software ToolKit™ connecting via USB or directly through the HMI panel, both with password protection for enhanced security. [4]

› **Expandable I/O:** Supports additional discrete inputs and outputs via external Woodward IKD modules, providing flexibility for system expansions.

› **Improved troubleshooting** based on event recorder with real time clock

› **Maintenance-Free Hardware:** Eliminates the need for servicing traditional device internal backup batteries by using maintenance-free super capacitors, ensuring reliable performance during power failures.

Simplifying Complex ATS Configurations

› **Wide Application Support**: Easily configurable for Utility-to-Generator, Generator-to-Generator, or Utility-to-Utility systems using circuit breakers or latching contactors.

› **Programmable Logic**: LogicsManager™ enables custom transfer schemes without external relay logic or separate PLCs, reducing system complexity and cost.

› **Vector Group Adjustment:** safeguarding system stability by minimizing risk of phase conflicts between power sources that involve transformers or generators with different phase configurations

Ensuring Reliability and Durability

› **Uninterrupted Power for Critical Applications:** Prevents outages in environments where "lights out" is not an option, such as hospitals and data centers.

› **Multiple Transfer Modes:** Supports open (break-before-make), delayed + timed neutral position (break-before-make) transition. Furthermore, also the:

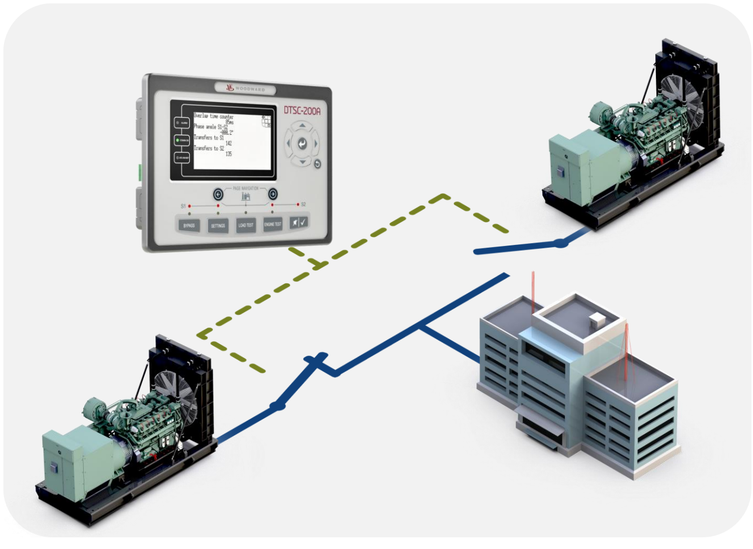
› **Fast and Secure** closed transitions (make-before-break)[5] in less than 100ms with in-phase monitoring (synch check) to ensure safe and reliable transfers or extended parallel times for soft loading applications.

› **Transfer commit:** Prevent interruptions by committing to a transfer once initiated.

Typical application

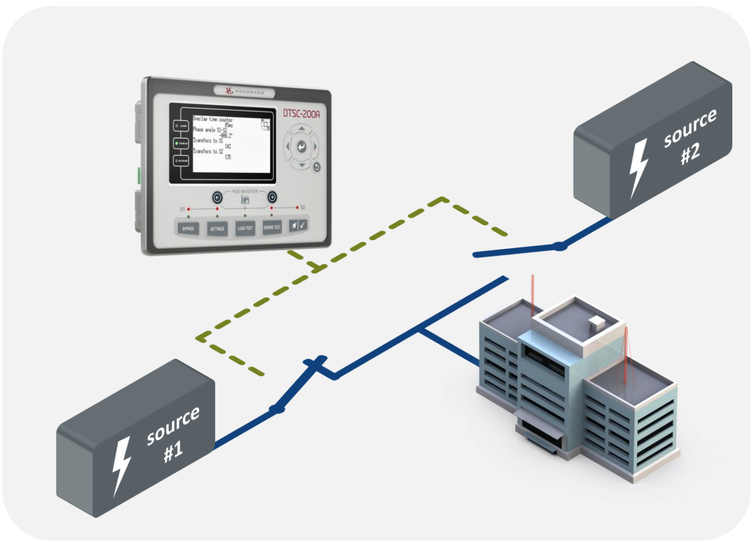
› utility to generator

› generator to generator
(2 start signals)



› utility to utility
(configurable phase angle)

› Source 1 to Source 2



[4] Configuration software 'Toolkit' available for free at Woodward.com or at product documentation site, http://wwdmanuals.com/dtsc-200a

[5] Optimized to achieve short parallel (< 100ms) or extended long parallel as per LM status

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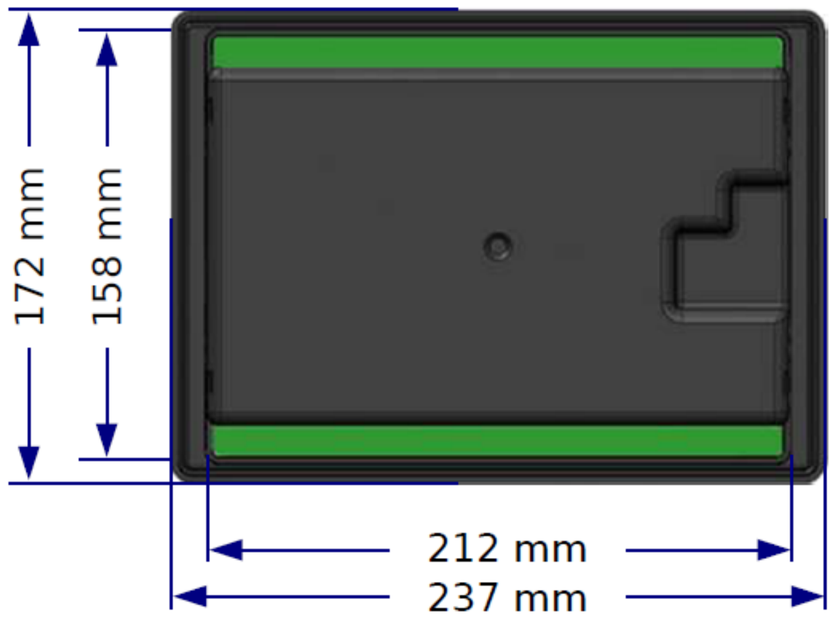
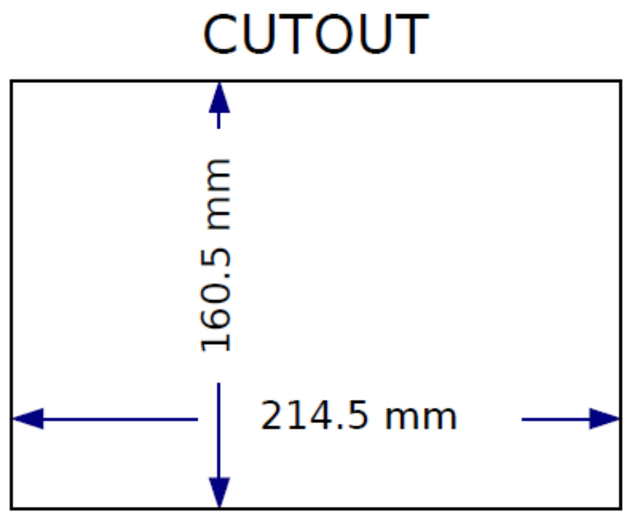
Ordering Part Number

	Package 1	Package 2
Ethernet port Modbus TCP	⊗	✓
	8440-2297	8440-2323

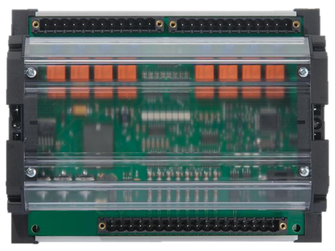
Dimensions





Accessories

Digital Expansion Boards



IKD1-M

IKD-IN-16

IKD-OUT-16

DTSC-200A SUPPORTED I/O EXTENSIONS	MAX. UNITS
IKD-OUT-16 and **IKD-IN-16**	1 / 1
IKD-1M	2

Software

ToolKit .
IKD Configuration Tool .

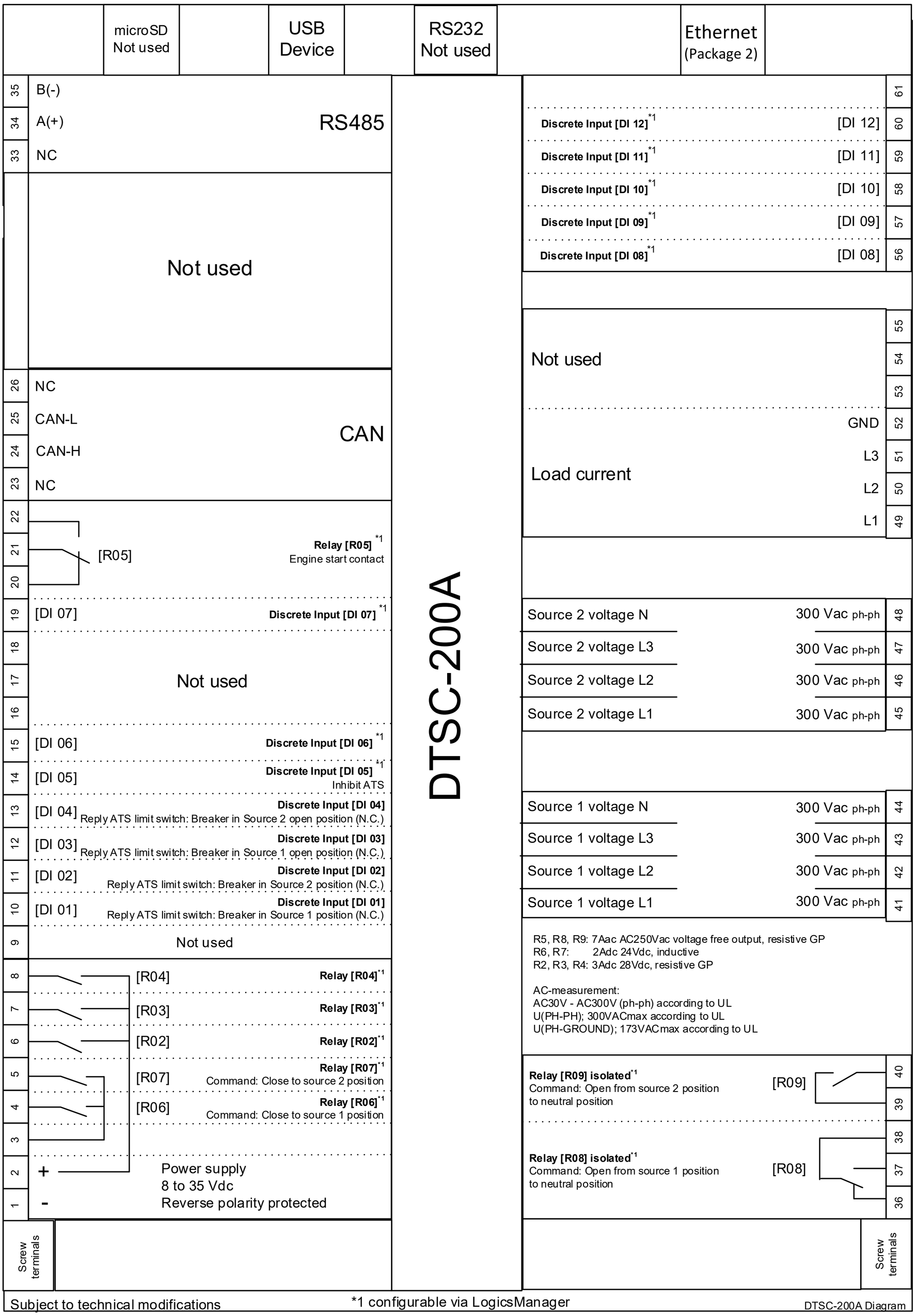
Spare Parts

Spare Connector Kit	10-004-675
Spare Mounting Kit	10-062-608

Internal I/Os	
Discrete inputs (configurable)	12
Discrete outputs (configurable)	8
External I/Os via IKD	
Discrete inputs (configurable)	Up to 16
Discrete outputs (configurable)	Up to 16
USB service port	✓
Highly accurate Measuring	
True R.M.S. Source voltage (3phase/4-wire)	Class 1 for current and voltage
Load current (3phase/4-wire, true RMS)	5 A

Monitoring	**ANSI**
Source: voltage	59/27
Source: frequency	81O/81U
Source: voltage asymmetry	47
Source: rotation field	✓
Load: overload	32
Load: overcurrent	50 / 51
Switch: plausible switch position	✓
Switch: transition failure	✓
Battery: voltage	✓
Synch check (in-phase monitoring)	25
Parallel time monitoring	✓

Terminal Diagram



Hardware Specifications

Power supply	12/24 V_{DC} (8 to 35 V_{DC})
Intrinsic consumption	max. 6 W (standby max. 5 W)
Ambient temperature	
Operation	-25 to 70 °C | -13 to 158 °F
Storage	-25 to 70 °C | -13 to 158 °F
Ambient humidity	95%, non-condensing
Voltage	Y / Δ
Rated (V_{rated})	277 / 480 V_{AC}
Max. value (V_{max})	358 / 620 V_{AC}
Max. value (V_{max}) according to UL	173 / 300 V_{AC}
Accuracy	Class 1
Linear measuring range	1×V_{rated}
Measuring frequency	50/60 Hz (40 to 85 Hz)
High Impedance Input Resistance per path	4.0 MΩ
Max. power consumption per path	< 0.2 VA

Current (Isolated)	
Rated (I_{rated})	5A
Linear measuring range	I_{gen} = 2.0 × I_{rated}
Rated short-time overcurrent (1 s)	10 × I_{rated}
Accuracy	Class 1
Discrete inputs	non isolated
Control method	connecting or disconnecting to battery minus signal

Display	
Wear resistant and scratch resistant LCD due to hard acrylic screen	480 × 272 TFT LCD with backlight

Discrete outputs [R 2-4]	isolated
	Rated 7 A_{DC}, 24 V_{DC} running standalone Rated 3 A_{DC}, 24 V_{DC} when running in parallel with other two relays 3 A_{DC}, 24 V_{DC} resistive GP (according to UL)
Discrete output [R 5]	Isolated
	Rated 7 A_{AC}, 250 V_{AC} voltage free output, resistive GP
Discrete outputs [R 6-7]	Isolated
	Rated 10 A_{DC}, 24 V_{DC} running standalone Rated 5 A_{DC}, 24 V_{DC} when running in parallel with the other relay 2 A_{DC}, 24 V_{DC} inductive (according to UL)
Discrete output [R 8-9]	Isolated
	Rated 7 A_{AC}, 250 V_{AC} voltage free output, resistive GP

Interfaces	
Package 2: Ethernet | RJ-45	Modbus TCP
USB service port Max. allowed cable length	 1.5 m
RS-485 interface Insulation voltage Max. allowed cable length	Isolated 500 V_{AC} 1000 m
CAN bus interface Insulation voltage Internal line termination	Isolated 500 V_{AC} 120 Ω

Housing	
Front panel flush mounting	Plastic housing
Dimensions (W x H x D)	237 × 172 × 45 mm
Front cutout (W x H)	214.5 × 160.5 mm
Connection	screw/plug terminals 2.5 mm²
Front	insulating surface
Sealing Front Back	 IP65 (with screw fastening) IP20
Weight	approx. 0,850 g
Disturbance test (CE)	tested according to applicable IEC standards
Approvals	File No.E527936

Commercial support
industrial.salesPG@woodward.com

Technical support
industrial.support@woodward.com

Product Documents and Files
http://wwdmanuals.com/DTSC-200A/

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