WOODWARD

Product Specification
37398

# DTSC-200

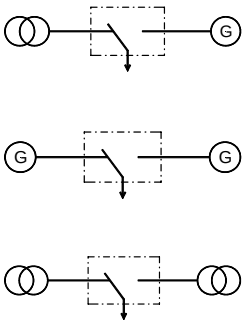
## Switchgear Control for ATS Operation

## APPLICATIONS

The DTSC-200 provides a high degree of flexibility in a user friendly and intuitive design for use in multiple applications. The graphic display permits the user to interface easily with the controller.

*FlexApp™* - This innovative feature provides the flexibility to easily configure the control for multiple applications. The DTSC-200 can easily be configured for use in:

- Utility-to-Generator Application
  The utility is supplying the load with a generator as the emergency source
- Generator-to-Generator App.
  A generator is supplying the load with a second generator as the emergency source
- Utility-to-Utility Application
  The utility is supplying the load with a second utility as the emergency source




*DynamicsLCD™* - The graphic LCD provides soft-keys with functions that adapt to the application and operation function.

A galvanically isolated CAN bus port is provided for configuration, communication, and visualization utilizing the CANopen protocol; additional discrete I/O may be added by utilizing the Woodward IKD 1 expansion cards (P/N 8440-141, request detailed information from our sales department).

An RS-485 Modbus RTU Slave full-duplex communication port is also provided for communication and visualization.

*LogicsManager™* - The *LogicsManager* permits the user to create completely customized internal operations and control sequences.

Various measuring values, inputs and internal states or constant values may be logically combined using Boolean operators and programmable timers. This enables the user to create and/or modify monitoring and control functions.

## DESCRIPTION

### I/Os

- *FlexRange™* - True R.M.S. 3-phase voltage measuring inputs for source 1 and source 2:
  - Rated 120 Vac (max. 150 Vac) *and*
  - Rated 480 Vac (max. 600 Vac) *in 1 unit*
- True R.M.S. 3-phase load current/power
- Up to 12 configurable discrete inputs
- *LogicsManager™* - up to 9 programmable discrete outputs
- CANopen communication port
- RS-485 Modbus RTU Slave interface port

### Monitoring (ANSI #)

- Source monitoring
  Adjustable fail and restore limits
  - Overvoltage / undervoltage (59/27)
  - Overfrequency / underfrequency (81O/U)
  - Voltage asymmetry (47)
  - Field rotation
- Load monitoring
  - Overload (32)
  - Overcurrent (50/51)
- Switch monitoring
  - Switch position plausibility feedback
  - Transfer failure
- Synch check (inphase monitoring) (25)
- Battery overvoltage / undervoltage
- Parallel time monitoring

### Features

- *FlexApp™* Technology (3 application modes)
- *DynamicsLCD™* - 128×64 pixel interactive graphic LC display with softkeys
- Elevator pre-signal
- Motor load disconnect signal
- Configurable trip levels/delays
- Configurable via PC and/or front panel
- 4 status LEDs for source availability and breaker state
- Multi-level password protection
- Multi-lingual capability (2 languages in 1 unit configurable: English, German, other languages on request)
- Event recorder (300 events, FIFO) with real time clock (battery backed; min. 6 years)
- IKD 1 DI/DO expansion board connectivity
- Modem connectivity with DPC cable (P/N 5417-557)
- Remote control via RS-485/CAN / discrete input signals
- Test & no load test mode
- Power seeking

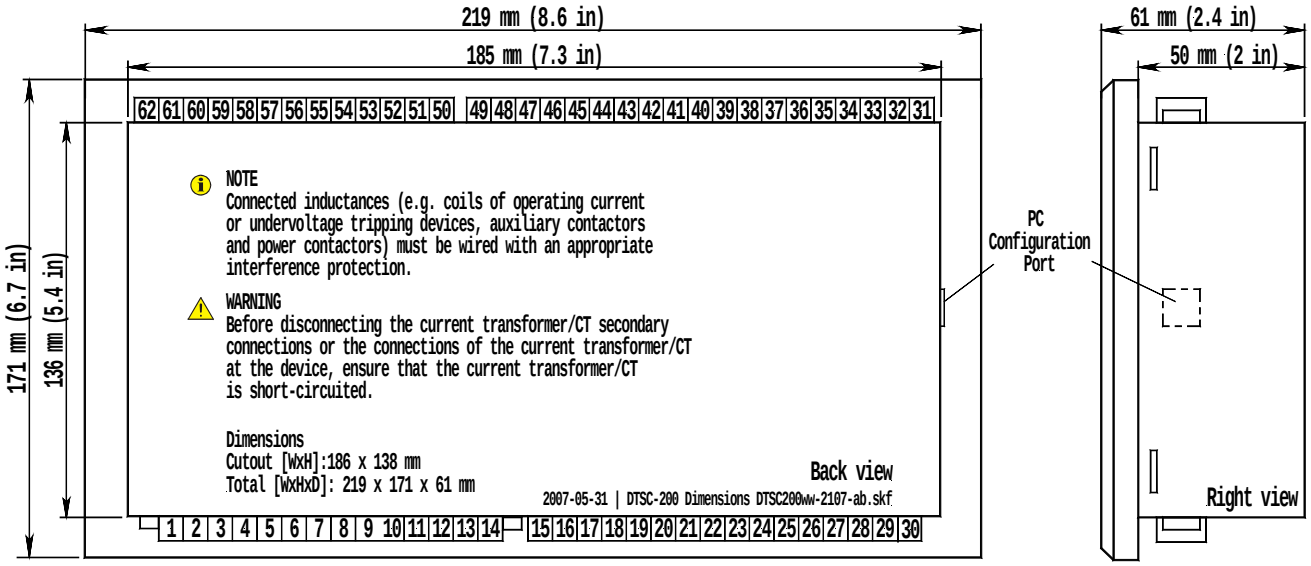
- *FlexApp™* Technology
- For use with breakers and transfer switches
- Transfer inhibit features
- Flexible and multifunctional *DynamicsLCD™*
- True R.M.S. voltage sensing with *FlexRange™*
- True R.M.S. current/power sensing
- Freely configurable discrete inputs
- Fully adjustable timers
- Freely programmable discrete outputs with *LogicsManager™*
- PC and/or front panel configurable
- Status LEDs for source availability and breaker state
- CANopen communication
- Modbus RTU Slave communication
- 6.5 to 40.0 Vdc power supply
- Flush panel mounting
- CE marked
- UL/cUL Listed

# SPECIFICATIONS

Power supply ..... 12/24 Vdc (6.5 to 40.0 Vdc; not buffered)
Inrush current ..... max. 50 A peak, 1 ms
Input capacitance ..... 2000 µF
Intrinsic consumption ..... max. 8 W
in power save mode (backlight, relays off) ..... 3 W
Ambient temperature (operation) ..... -20 to 60 °C / -4 to 140 °F
Ambient temperature (storage) ..... -30 to 80 °C / -22 to 176 °F
Max. operating altitude ..... 2000 m (6,500 ft)
Ambient humidity ..... 95 %, non-condensing
Voltage ..... (both ranges within one unit on different terminals, Y/Δ)
*100 Vac [1]* Rated ($V_{rated}$) ..... 69/120 Vac
Max. value ($V_{max}$) ..... 86/150 Vac
Rated ($V_{phase-ground}$) ..... 150 Vac
Rated surge volt.($V_{surge}$) ..... 2.5 kV
*and 400 Vac [4]* Rated ($V_{rated}$) ..... 277/480 Vac
Max. value ($V_{max}$) ..... 346/600 Vac
Rated ($V_{phase-ground}$) ..... 300 Vac
Rated surge volt.($V_{surge}$) ..... 4.0 kV
Accuracy ..... Class 1
Measurable alternator windings ..... 3p-3w, 3p-4w, 1p-2w, 1p-3w
Setting range ..... primary ..... 50 to 650,000 Vac
Linear measuring range ..... $1.25 \times V_{rated}$
Measuring frequency ..... 50/60 Hz (40 to 70 Hz)
Input resistance per path ..... [1] 0.498 MΩ, [4] 2.0 MΩ
Max. power consumption per path ..... < 0.15 W
Current Rated ($I_{rated}$) ..... [1] ../1 A or [5] ../5 A
Linear measuring range ..... $I_{source} = 3.0 \times I_{rated}$,
Burden ..... < 0.15 VA
Rated short-time current (1 s) ..... [1] $50 \times I_{rated}$, [5] $10 \times I_{rated}$

Discrete inputs ..... isolated
Input range ..... 12/24 Vdc (8 to 40.0 Vdc)
Input resistance ..... approx. 20 kΩ
Discrete outputs Group A [R 1-4] ..... isolated
Contact material ..... AgCdO
Load (GP) ..... 2.00 Aac@250 Vac / 2.00 Adc@24 Vdc
Discrete output Engine Start [R5] ..... isolated
Contact material ..... AgNi 90/10
Load (GP) ..... 10.00 Aac@250 Vac
Discrete outputs Group B [R 6-9] ..... isolated
Contact material ..... AgNi 90/10
Load (GP) ..... 10.00 Aac@250 Vac
RS-485 interface ..... isolated 500 Vac
CAN bus interface ..... isolated 500 Vac
Housing Flush ..... Type easYpack
Dimensions Flush ..... 219×171×61 mm (8.6x6.7x2.4 in)
Front cutout Flush ..... 186 [+1.1]×138 [+1.0] mm
Material ..... glass fiber-reinforced plastic
Connection ..... screw/plug terminals AWG 14 / 2.5 mm²
Front ..... insulating surface
Protection system ..... with proper installation
Front ..... IP54 (with clamp fastening)
Front ..... IP65 (with screw fastening)
Back ..... IP20
Weight ..... approx. 800 g (1.75 lb)
Disturbance test (CE) ..... tested acc. to applicable EN guidelines
Listings ..... UL/cUL listed, Ordinary Locations, File No.: 231544

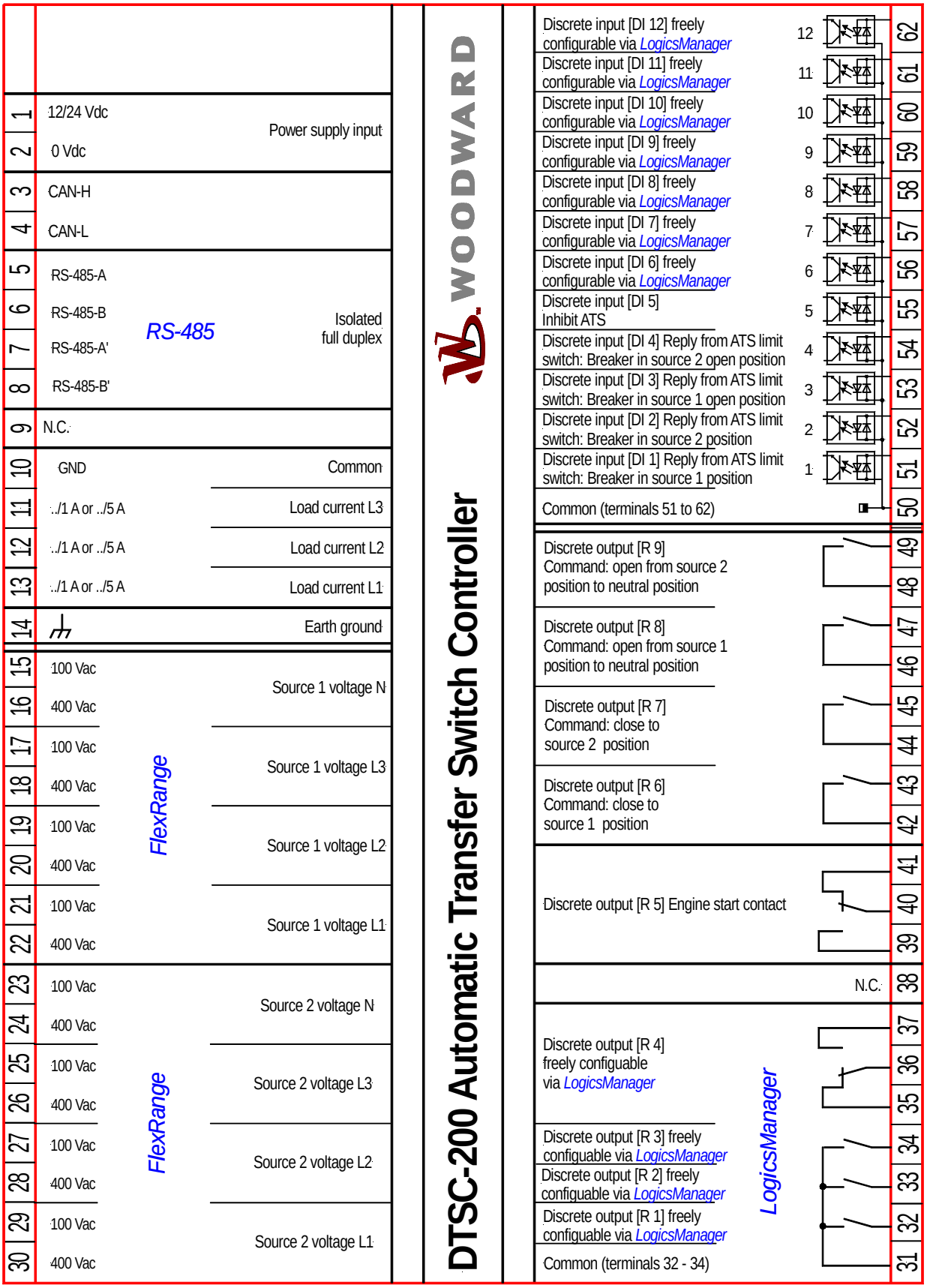
# DIMENSIONS




# PART NUMBERS AND ORDER CODES

| Model | Rated PT secondary *FlexRange™* | Rated CT secondary | Part Number (P/N) | Description |
|---|---|---|---|---|
| 200 | 69/120 Vac *and* 277/480 Vac | ../5 A | 8440-1779 | DTSC-200-55B |
| | | ../1 A | 8440-1778 | DTSC-200-51B |

# WIRING DIAGRAM



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www.woodward.com/power

For more information contact:



37398 - 2007/12/Stuttgart

# FEATURES OVERVIEW

| Digital Transfer Switch Controller | | DTSC-200 |
|---|---|---|
| **Measuring** | | |
| Source voltage (3phase/4-wire) | rated 69/120 Vac | ✓ |
| - True R.M.S. | max. 86/150 Vac | ✓ |
| - *FlexRange™* | rated 277/480 Vac | ✓ |
| | max. 346/600 Vac | ✓ |
| Load current #1 (3phase/4-wire, true RMS) | ../1 A or ../5 A | ✓ |
| **Breaker Control** | | |
| Open transition (break-before-make) | | ✓ |
| Delayed transition (break-before-make) + timed neutral position | | ✓ |
| Closed transition (make-before-break) | | ✓ |
| **Application** | | |
| Utility to generator | | ✓ |
| Utility to utility | | ✓ |
| Generator to generator (2 start signals) | | ✓ |
| **Features** | | |
| Programmable elevator pre-signal | | ✓ |
| Programmable motor load disconnect signal | | ✓ |
| Transfer commit | | ✓ |
| Test modes #2 | | ✓ |
| Transfer mode selector #2 | | ✓ |
| Load shed #2 | | ✓ |
| Shunt trip enable #2 | | ✓ |
| Extended parallel time #2 | | ✓ |
| Automated display backlight shutdown selectable | | ✓ |
| Daylight saving time | | ✓ |
| Source priority selection #2 | | ✓ |
| Vector group adjustment for in-phase monitoring | | ✓ |
| Fully adjustable timers #3 | | ✓ |
| Status LEDs for source availability and breaker state | | ✓ |
| **Accessories** | | |
| Soft-keys (advanced LC display) | *DynamicsLCD™* | ✓ |
| Configuration via PC #4 | | ✓ |
| Event recorder with real time clock (battery backup) | | 300 |
| Flush-mounting (screw or clamp fastening) | | ✓ |
| **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 (inphase monitoring) | 25 | ✓ |
| Parallel time monitoring | | ✓ |
| **I/Os** | | |
| Discrete inputs (configurable) | | 12 |
| Discrete outputs (configurable) | *LogicsManager™* | 9 |
| Direct configuration interface #4 | | ✓ |
| CANopen communication bus (isolated) | | ✓ |
| RS-485 Modbus RTU Slave full/half-duplex (isolated) | | ✓ |
| **Listings/Approvals** | | |
| UL/cUL Listed | | ✓ |
| CE Marked | | ✓ |

#1 Selection during order; both ../5 A (standard) or both ../1 A (alternatively)
#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 10.0 s), engine start delay timers (1 to 300 s)
#4 Cable incl. software necessary (DPC = Part Number P/N 5417-557)