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WOODWARD

Product Specification
B37944

DTSC-200A

DTSC-200A Unique Features
- ✓ Built on field proven DTSC-200
- ✓ New face plate with tactile buttons
- ✓ Large LCD display
- ✓ Programmable from HMI panel or service tool (USB connection)
- ✓ Shorter lead time

Automatic Transfer Switch (ATS) Controller

DESCRIPTION

The DTSC-200A (Digital Transfer Switch Control) controls the transfer of electrical power from one source to another for hospitals, data centers, office buildings, manufacturing plants and similar where lights out is not an option. The extremely versatile DTSC-200A ATS controller is easily configured for a wide range of automatic transfer switch applications including Main-Gen, Gen-Gen or Main-Main systems using circuit breakers or latching contactors. Source transfer can be performed as open, delayed, or closed transition with in-phase monitoring (synch check) that can be enabled for all transition types to ensure safe transfer. The closed transition overlap time can be limited to less than 100ms for momentary, make-before-break transfers, or extended indefinitely for paralleling via discrete input. “Custom” features like transfer inhibit, source selection, load shed/restore, elevator pre-signal and engine test programs come standard.

LogicsManager™ - Programmable Boolean logic functions along with ample, expandable discrete I/O allows for complex transfer schemes without using external relay logic or a separate PLC!

FlexApp™ - Easily configures the DTSC-200A for: Utility-to-Generator, Generator-to-Generator or Utility-to-Utility applications

DynamicsLCD™ - The adaptive and interactive 4.3”, 480 x 272-pixel TFT LC display with tactile buttons and a clear menu structure ensure intuitive user operation and navigation.

FEATURES

- True R.M.S. 3-phase voltage measuring for both Source 1 and Source 2
- True R.M.S. 3-phase load current/power
- Software configurable for wide range of ATS applications:
  - Utility-to-Generator: Utility is preferred with a generator as emergency source
  - Generator-to-Generator: One genset is preferred with a second genset as backup
  - Utility-to-Utility: Utility is preferred with second utility as the emergency source
- Incorporates several monitoring features for a secure transfer: Source, Load, Switch, Battery, In-phase, and parallel time monitor
- Intelligent limit switch feedback monitoring to ensure plausibility before initiating a transfer
- Fully configurable transfer command pulse configuration
- Inhibit transfer to S1, S2, both or start emergency source but initiate no transfer
- Elevator pre-signal with timer before carrying out a transfer
- Motor load disconnect signal with timer and possibility to daisy chain multiple MLDs for load sequencing
- Source priority selection configurable via LogicsManager
- Load test and engine test to initiate routine health check of the emergency source
- In-phase monitoring ensures a transfer occurs within a phase angle difference of 7^0 or less
- Extended parallel time enables soft loading applications
- Vector group adjustment if transformers are used in the ATS system
- Shunt trip enable signal ensures both sources are not paralleled for more than desired time
- Remote control via interface (CANopen, Modbus RTU) and via discrete inputs
- I/O expansion capability (additional 16x DI and 16x DO supported via IKD1M or 3rd party modules)
- Adjustable display backlight shutdown to reduce power consumption
- Woodward ToolKit™ software for flexible setup from a single connection to the network. Supports settings file created from the DTSC-200
- Multi-lingual capability: English, German, Spanish, Polish, Russian, other languages upon request

- **Premium ATS control for complex transfer switch applications for critical power assets. Supports,**
  - **Circuit breakers or latching contactors**
  - **Open, delayed, or closed transition transfer**
  - **Make-before-break (<100ms) transfer or extended indefinitely for paralleling**
  - **In-phase monitoring (synch check) for all transition types**
- **Engine exerciser (load/no-load) routine with fully adjustable interval**
- **Load shed and restore**
- **Elevator pre-signal**
- **Transfer/return inhibit**
- **Adjustable timers and bypass**
- **Priority source selection**
- **Freely configurable, expandable discrete I/O**
- **CANopen / Modbus RTU**
- **PC and/or front display configuration with password protection**
- **CE marked**
- **UL/cUL 1008**

SPECIFICATIONS

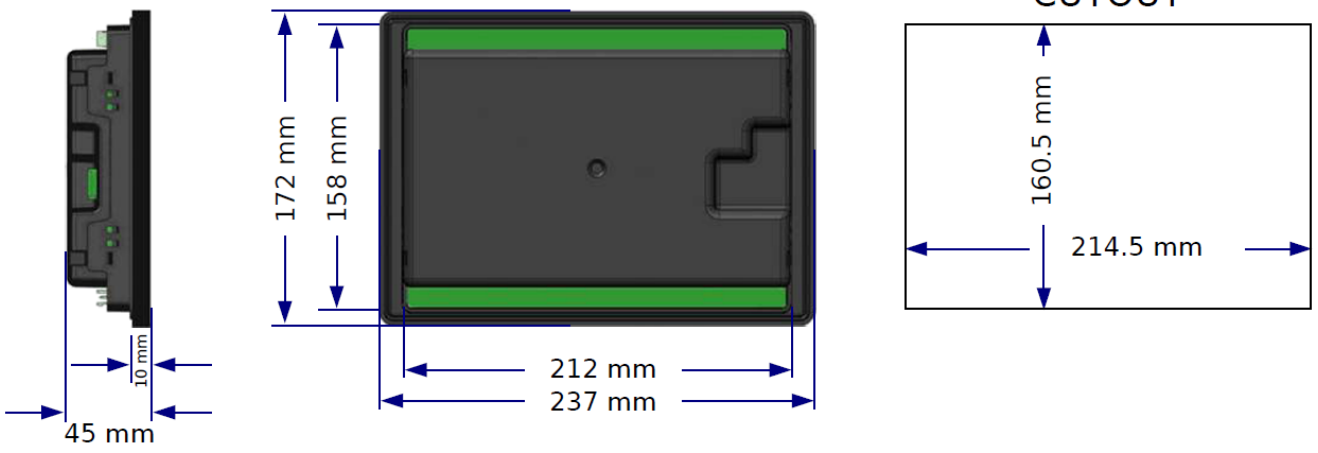
Power supply ..... 12/24 V_{DC} (8 to 35 V_{DC})
Intrinsic consumption ..... max. 6 W (standby max. 5 W)
Ambient temperature (operation) ..... -25 to 70 °C / -13 to 158 °F
Ambient temperature (storage) ..... -25 to 70 °C / -13 to 158 °F
Ambient humidity ..... 93%, non-condensing
Voltage ..... ⅄/Δ
Rated (V_{rated}) ..... 277/480 V_{AC}
Max. value (V_{max}) ..... 358/620 V_{AC}
Max. value (V_{max}) according to UL6200 ..... 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}
$I_{mains/ground}$ = 1.5×I_{rated}
Rated short-time overcurrent (1 s) ..... 10×I_{rated}
Accuracy ..... Class 1
Discrete inputs group A [DI 1-7] ..... non isolated
Low level threshold ..... Approx.... 1.3 V_{DC}
High level threshold ..... 1.7 V_{DC}
Max. input voltage ..... 60 V_{DC}
Min. input voltage ..... 0 V_{DC}
Discrete inputs group B [DI 8-12] ..... non isolated
Low level threshold ..... Approx.... 1.3 V_{DC}
High level threshold ..... 1.7 V_{DC}
Max. input voltage ..... 24 V_{DC}
Min. input voltage ..... 0 V_{DC}
Display .....
..... 480 × 272 TFT LCD with backlight
.....Wear resistant and scratch resistant LCD due to hard acrylic screen

Discrete outputs group A [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 UL6200)
Discrete output [R 5] ..... isolated
.....Rated 7 A_{AC}, 250 V_{AC} voltage free output, resistive GP
Discrete outputs group B [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 UL6200)
Discrete output group C [R 8-9] ..... isolated
.....Rated 7 A_{AC}, 250 V_{AC} voltage free output, resistive GP
Interfaces .....
USB service port .....
Max. allowed cable length ..... 1.5 m

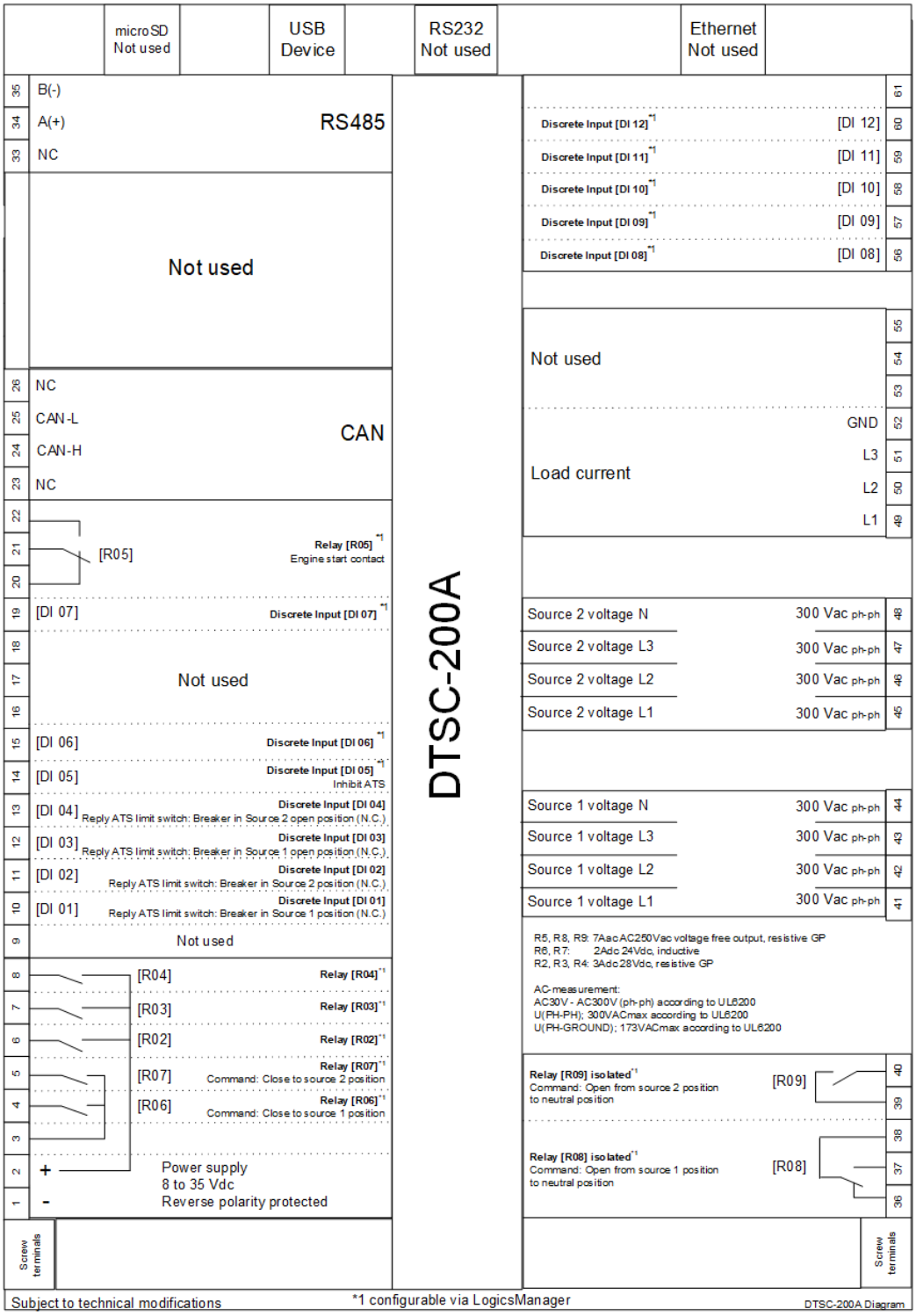
RS-485 interface ..... isolated
Insulation voltage ..... 500 V_{AC}
Max. allowed cable length ..... 1000 m

CAN bus interface ..... isolated
Insulation voltage ..... 500 V_{AC}
Internal line termination ..... 120 Ohm
Housing Front panel flush mounting ..... Plastic housing
Dimensions WxHxD ..... 237 × 172 × 45 mm
Front cutout WxH ..... 214.5 × 160.5 mm
Connection ..... screw/plug terminals 2.5 mm²
Front ..... insulating surface
Sealing Front ..... IP65 (with screw fastening)
Back IP20
Weight ..... approx. 0,850 g
Disturbance test (CE) .....tested according to applicable IEC standards
Listings .....CE, UL1008 (File No: E527936)

DIMENSIONS



TERMINAL DIAGRAM



RELATED PRODUCTS

- I/O Expansion Board **IKD1** (Product spec. # 37171)
- **ToolKit** (Product spec. # 03366)
- Genset controller **easYgen-3200XT** & **easYgen-3500XT** (Product spec. # 37582 and #37583)
- Circuit breaker controller **easYgen | LS-6XT** (Product spec. #37913)
- CANbus to Fiber Optic Converters (Application note # 37598):
  DL-CAN P/N 8445-1049 and **DL-CAN-R** P/N 8445-1048
- Remote Access Gateway (with HMS Netbiter **EasyConnect EC250** and **EC350**)
- Phoenix expansion CAN Couplers

Released

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Digital Transfer Switch Controller		DTSC-200A
Measuring		
True R.M.S. Source voltage (3phase/4-wire)	Source 1	✓
	Source 2	✓
Load current (3phase/4-wire, true RMS)	.../5 A	✓
Breaker Control		
Open transition (break-before-make)		✓
Delayed transition (break-before-make) + timed neutral position		✓
Closed transition (make-before-break) #1		✓
Application	*FlexApp™*	
Utility to generator		✓
Utility to utility (configurable phase angle)		✓
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		
Tactile keys (advanced LC display)	*DynamicsLCD™*	✓
Configuration via PC #4		✓
Event recorder with real time clock		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 (in-phase monitoring)	25	✓
Parallel time monitoring		✓
I/Os		
Discrete inputs (configurable)		12
Discrete outputs (configurable)	*LogicsManager™*	8
USB service port #4		✓
CANopen communication bus (isolated)		✓
RS-485 Modbus RTU Slave half-duplex (isolated)		✓
Listings/Approvals		
UL/cUL 1008 Listed		✓
CE Marked		✓
Part numbers		
Front panel mounting with display, 5A CT input #5		8440-2297
Spare connector kit		10-004-675

#1 Optimized to achieve short parallel (< 100ms) or extended long parallel as per LM status
#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 Configuration software 'Toolkit' available free at Woodward.com or at product documentation site, http://wwdmanuals.com/dtsc-200a
#5 a screw and a clamp kit are delivered with the unit for fastening