

Proven Performance and Reliability
Used in more than 20 Countries
Un-matched Controller Options in the Industry
Custom Application Flexibility
Switch or Circuit Breaker Type



Contactor-Switch Type



Sizes 100 through 5000 amps- 2, 3, & 4 pole configurations.

- 3 Controller options, so you only pay for what you need.
- Available 120 to 480VAC
- Double-throw Switch, inherently interlocked construction
- Mechanically held, electrically operated.
- Manual operating handle.
- Rated for emergency and standby applications.
- Powder Painted Enclosures.
- NEMA 1 and 3R Ratings.
- Corrosion Resistant Tin Plated Control Wires
- High Durability Wire Markers

Circuit Breaker Type

Sizes 600 through 5000 amps- 3 & 4 pole configurations.

- Controller options from simple Open Transition to Pick Shaving.
- Available 220VAC to 25 KV
- Suitable for use as Service Equipment
- Rated for emergency and standby applications.
- Mechanically held, electrically operated Circuit Breakers.
- Mechanically Interlocked
- Corrosion Resistant Tin Plated Control Wires
- Powder Painted Enclosures
- NEMA 1 and 3R Ratings
- High Durability Wire Markers



Controller Options

DEEPSEA 705



The 705 is an Automatic Transfer Switch controller which will monitor the incoming AC mains (utility) supply. Should a Mains (utility) failure occur the 705 will instruct the genset to start and take load.

It utilizes advanced surface mount construction techniques to provide a compact yet highly specified module.

Operation of the module is via three pushbuttons mounted on the front panel with 'Manual off load', Manual on load and AUTO positions. Selection of the 'Auto' mode is confirmed by LED indicator, and monitors the incoming mains (utility) supply (3 phase or single phase). Should the incoming AC mains (utility) supply fall below a configurable pre-set limit (180V default), the generator will be requested to start, and load transferred to the genset. When the AC mains (utility) supply returns within limits, the module will wait for a configurable, stabilization period, and then transfer load back to the mains.

The engine will be requested to stop after a cool-down period.

The module's microprocessor provides a comprehensive list of timers

and functions, and access to the settings is via a small Configuration Switch on the rear of the module. Parameter settings can be adjusted using the front panel pushbuttons once in Configuration Mode.

The module monitors the engine and provides the following functions:

- Mains (utility) failure detection with configurable fail and return timers.
- Adjustable Warming and cooling timers.
- Adjustable Mains (utility) Fail voltage level.
- Changeover contactor control with LED mimic.
- Generator available indication (from genset frequency).
- Engine Start signal.
- Optional Weekly Exerciser

Issues such as environmental compliance and EMC have been carefully engineered into the design. Advanced features such as Protected Solid State Outputs mean that there are no moving parts or contacts to burn out.

WOODWARD DTSC-50



The DTSC-50 is intended for emergency stand-by applications with a single generator. When it detects a utility failure it commands the generator to start and transfers the load to the emergency source. When utility power is restored it performs an open-transition re-transfer and allows the engine to cool-down before stopping. It can be used in 1Ph2W, 1Ph3W, 3Ph3W and 3Ph4W Systems.

The DTSC-50 displays voltage and frequency values for each phase, as well as engine hours, maintenance hours and number of

transfers. Active alarms are annunciated via the seven segment LED display. Seperate LEDs show breaker status and source availability. Sealed soft-keys enable the user to start the generator and operate the transfer switch manually.

Protection & Monitoring

Protection

Configurable fail and restore limits/timers for:

Over / under voltage	ANSI (59/27)
Over / under frequency	ANSI (81O/U)
Voltage balance	ANSI (47)
Phase rotation	

Switch monitoring

Switch position feedback
Transfer failure

Features

Open transition transfer
6-digit, 7-segment LED for
display of measuring values (V, f)
display of counters
display of alarms
Configurable trip levels/delays
15 entry event log
Customizable display using paper-strips
Counters for:
Operation hours
Maintenance
Number of starts
Number of transfers
Removable terminal blocks for easy wiring
Configurable via PC and/or front panel
Password protection

WOODWARD DTSC-200



The extremely flexible DTSC-200 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 smooth transfer. The closed transition overlap time can be limited to less than 100 ms for momentary, make-before-break transfers, or extended indefinitely for parallel-ing via discrete input. "Custom" features like

transfer inhibit, source selection, load shed/restore, elevator pre-signal and engine test programs come standard.

True R.M.S. 3-phase voltage measuring
True R.M.S. 3-phase load current/power
RS-485 Modbus RTU Slave interface port

Protection & Monitoring

Source monitoring

Configurable fail and restore limits/timers for:

Over / under voltage	(59/27)
Over / under frequency	(81O/U)
Voltage balance	(47)
Phase rotation	

Load monitoring

Overload	(32)
Overcurrent	(50/51)

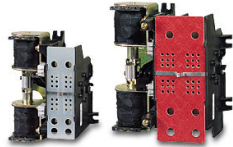
Switch monitoring

Switch position feedback
Transfer failure

Synch check (in-phase monitoring)	(25)
Battery over / under voltage	
Parallel time monitoring	

Features

Open, delayed or closed transition transfer
In-phase monitoring (synch check)
Make-before-break overlap time < 100 ms
Extended parallel
Preferred source selection
Transfer and/or retransfer inhibit
Load shed and/or restore
Elevator pre-signal
Engine exerciser (load/no-load) test
Configurable via PC and/or front panel
Multi-level password protection
Multi-language capability (English & German included, other languages upon request)
IKD-1 DI/DO expansion board connectivity
Modem connectivity
Remote control via RS-485 / CAN / discrete input signals



Switch Contact Ratings



Switch Rating Amps	Change Over Time	Withstand Rating Peak	Mechanical Life	Electrical Life	Switch Frequency
100-2Pole	0.09 sec.	25 KA	250.000 Transfers	50.000 Transfers	150 times/Hour
100-3Pole	0.08 sec.	12.5 KA	250.000 Transfers	50.000 Transfers	150 times/Hour
200-2Pole	0.09 sec.	25 KA	250.000 Transfers	50.000 Transfers	150 times/Hour
200-3Pole	0.08 sec.	12.5 KA	250.000 Transfers	50.000 Transfers	150 times/Hour
400	0.08 sec.	30 KA	250.000 Transfers	50.000 Transfers	150 times/Hour
600	0.08 sec.	37.5 KA	250.000 Transfers	50.000 Transfers	150 times/Hour
800	0.15 sec	50 KA	10.000 Transfers	10.000 Transfers	100 times/Hour
1000	0.15 sec	50 KA	50.000 Transfers	10.000 Transfers	100 times/Hour
1200	0.15 sec	55 KA	50.000 Transfers	10.000 Transfers	100 times/Hour
1600	0.15 sec	55KA	50.000 Transfers	10.000 Transfers	100 times/Hour
2000	0.15 sec	105 KA	10.000 Transfers	5.000 Transfers	100 times/Hour
2500	0.15 sec	105 KA	10.000 Transfers	5.000 Transfers	100 times/Hour
3200	0.15 sec	105 KA	7.500 Transfers	4.000 Transfers	100 times/Hour
4000	0.15 sec	127 KA	7.500 Transfers	4.000 Transfers	100 times/Hour
5000	0.15 sec	127 KA	7.500 Transfers	4.000 Transfers	100 times/Hour

Dimensions

Switch Rating Amps	Width Inches	Height inches	Depth Inches	Shipping Weight (Aprox)
100-2 Pole	18	18	9	60
100-3 Pole	18	18	9	
200-2 Pole	18	18	9	67
200-3 Pole	18	24	9	
200-480 VAC	24	30	12	105
400	24	36	12	105
400-480 VAC	24	36	12	
600	28	38	15	115
800	40	48	15	220
1000	40	48	15	785
1200	36	72	24	800
1600	36	72	24	850
2000	32	72	40	970
2500	32	72	40	1050
3200	52	80	60	1700
4000	52	80	60	1550
5000	52	80	60	1550