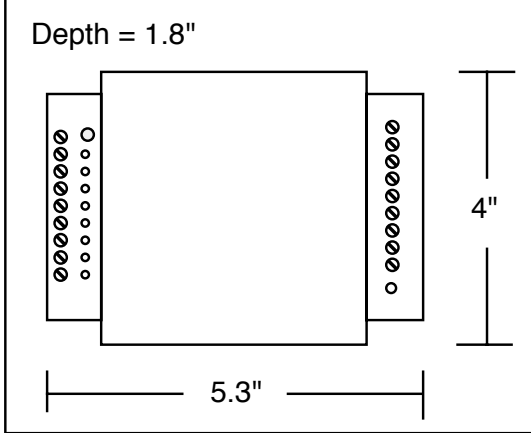
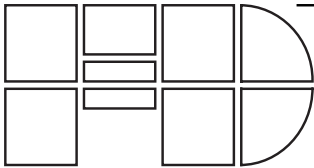


FUNCTIONAL DEVICES INC.
POWER-LINE CARRIER



MODEL CS8DC
1-WAY
COMMAND SYNTHESIZER



DESCRIPTION

The CS8DC Command Synthesizer interfaces with and polls up to 8 digital outputs of an EMS controller. It transforms a particular hard-wired EMS output (open or closed relay, switch, NPN optoisolator or voltage *) into an OFF or ON command addressed to a particular Responder (PLC receivers, which are located at the load). The CS8DC controls only one-way Responders.

The CS8DC is wired to CTME Command Transmitter, which uses existing ac wires or separate dedicated twisted pair for the PLC communication link to Responders.

A unique digital code or identity (ID) is assigned to each EMS controller output. These same IDs are assigned to RC-type Responders by setting positions of switches on the Responders. A relay within the Responder ultimately controls the load. The PLC signal put out by the Command Synthesizer contains ON/OFF commands as well as the ID. The requirements for ON vs. OFF commands are determined by the EMS controller.

Diagnostic LEDs indicate which ID is being commanded, whether the controller is requesting an ON or OFF and the presence of outgoing PLC.

Normally, when the controller outputs a contact closure the CS8DC transmits an ON command. There is a provision (see drawing on page 2 of D324) for inverting the logic so that a contact closure causes an OFF command to be transmitted.

FEATURES

- Continuous refresh transmission of desired status to all 8 Responder IDs
- Diagnostic LEDs
- Interfaces with controller via direct wires, point per point
- Ability to invert state of sensed contact

- Power in is 24 Vac (max. = 30 Vac, min. = 20 Vac), which is wired from provided 120 Vac to 24 Vac plug-in transformer (100 mA)
- Contact inputs are relay, switch, NPN optoisolator or voltage* with open circuit voltage of +5 volts on common connections and 5 mA required to represent a closed contact
- Controls 8 ID codes for one-way Responders
- PLC communication has confirmation means, redundancy, and continuous refresh commands
- Operating temperature range 32° F to 120° F, storage temperature range -40° F to 185° F
- Humidity range 5 to 95% (noncondensing)
- Contains externally visible LEDs, which indicate ID being commanded, ON or OFF desired status of EMS, presence of outgoing PLC signal, and availability of ac power
- Maximum delay in commanding any Responder = 4 seconds
- One-piece housing 4" X 4" X 1.8" of 94-5V flame retardant ivory plastic mountable via screw mounts (terminals protrude)
- UL listed under Standard 916 Energy Management Equipment

* For voltage input of DO to CS8DC use an IM24.

TABLE OF RESPONDERS USED WITH CS8DC SYNTHESIZER

THIS COLUMN IS RELAY NUMBER IN RC412C

SWITCH POSITION 9 IS NOT USED FOR ADDRESS IN RC412C

SWITCH 9 IS START ON/OFF OF RELAY #2 IN RC412C

TAKE ACTION ON LOSS OF SIGNAL—OPEN = YES, CLOSED = NO

START ON/OFF OF RELAY #1—OPEN = START ON, CLOSED = START OFF

SWITCH
0 = Open
1 = Closed

LOAD	SWITCH 12345678	9	9	11	12	TYPE OF RESPONDER	BO-BINARY OUT LOAD DESCRIPTION	LOCATION
1	00000000	0						
2	00000000	1						
3	00000001	0						
4	00000001	1						
5	00000010	0						
6	00000010	1						
7	00000011	0						
8	00000011	1						

