COMPUTER CONVERSIONS CORPORATION
EAST NORTHPORT, N.Y. 11731
(516) 261-3300 • TWX 510-226-0448

T-75-35-01

DC ANGLE TO SYNCHRO CONVERTERS
LDS 500 SERIES

DESCRIPTION

The LDS series are high accuracy, drift free, DC angle to synchro or resolver converters designed for military and industrial simulation and control applications. They will accept a DC voltage representing angle and convert it into 3 wire synchro or 4 wire resolver signals. Up to 3 size 11 torque receivers can be positioned with standard units. Accuracy of up to ±6 minutes can be proved. These printed circuit mounted units feature hybrid power amplifiers, and output Scott "T" transformer isolation for trouble free system operation. Only standard ±15 and +5v power is required for any of the units in this series.

FEATURES

* High Accuracy and Resolution
* Transformer Isolated Output and Reference
* Synchro or Resolver Outputs, 60 or 400 Hz.
* Output Short Circuit Protected
* Can drive Torque Receivers
* Only ±15 and +5v DC Power required.
* Drift Free
* Repairable PC Card Package
* Highly Reliable

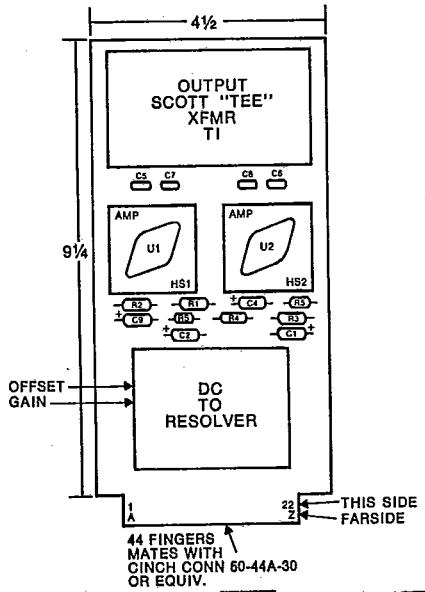
SPECIFICATIONS

MODELS:			
400 Hz		LDS 504	
60 Hz		LDS 506	
ACCURACY:		±15 minutes	
DC INPUT:	(1)	A) ±10v DC representing angles from ±180° into 20K ohms input impendance	
		B) ±100v DC representing angles from ±180° into 20K ohms input impendance	
OUTPUT VOLTAGES: (Transformer Isolated)	(2)	A) Synchro 11.8v rms L-L 400 Hz	(LDS504-L)
		B) Synchro, 90v rms L-L 400 Hz	(LDS504-H)
		C) Synchro 90v rms L-L 60 Hz	(LDS506-H)
		D) Resolver 11.8v rms L-L 400 Hz	(LDR504)
OUTPUT LOAD:	(3)	A) 3VA (-3) including torque receivers	
		B) 5VA (-5) including torque receivers	
REFERENCE INPUT (Transformer Isolated)		115v @ 1.2 ma rms 400 Hz (LDS 504-H) 26V @ 5 ma rms 400 Hz (LDS 504-L)	
DYNAMIC RESPONSE:		For a ±90° Step input, 5 ms to rated accuracy	
POWER SUPPLIES:	(4)	±15v DC @ 150 ma with 1.5 amp surge capability +5v DC @ 260 ma.	
TEMPERATURE RANGE:			
OPERATING:		0° to 70°C (LDS504-L or H-1) -55°C to +85°C (LDS504-L or H-2)	
STORAGE:		-55°C to +125°C	
SIZE:*		One 4.5" x 9.25" x 2.70"H repairable PC card with one 22 pin, double sided edge connector.	

NOTES:
(1) Other voltages and higher impedances available
(2) Different voltages and frequencies available
(3) High load capability available
(4) 5va units require ±15v with 375 ma each and 1.5 amp surge capability.

ORDERING GUIDE:
(1) Specify basic model desired
(2) Add Operating temperature range
(3) Add desired load capability
(4) To order a unit with ±10v DC input, 400 Hz, 11.8v L-L Synchro output, 3VA load capability operating from 0°C to 70°C, use part number LDS 504-L-1-3.

*Now available in 2.6" x 3.1" x 1" H module with 1.5 VA load capability.



PIN CONNECTIONS

PIN	FUNCTION	PIN	FUNCTION
1	S2	A	INT
2	S3	B	INT
3	*S4	C	INT
4	S1	D	INT
5	REF HI	E	NC
6	REF LO	F	NC
7	NC	H	INT
8	NC	J	INT
9	NC	K	INT
10	NC	L	INT
11	−15V	M	NC
12	PWR GND	N	NC
13	PWR GND	P	INT
14	NC	R	INT
15	NC	S	NC
16	NC	T	INT
17	NC	U	INT
18	PWR GND	V	NC
19	PWR GND	W	NC
20	NC	X	INPUT GND
21	NC	Y	DC IN
22	+15V	Z	+5V

INT = INTERNAL CONNECTIONS — DO NOT USE
*RESOLVER UNITS ONLY
(GNDS) CONNECTED INTERNALLY)

PART NO.	HEIGHT
LDS504 LDS506	1.30 MAX 2.70 MAX

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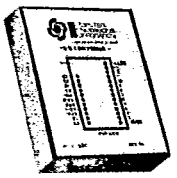


SOLID STATE CONTROL DIFFERENTIAL TRANSMITTER SCDX SERIES

T-71-35-07

DESCRIPTION

The SCDX series are low cost, miniature, solid state control differential transmitters and resolver transmitters designed for military and industrial control applications. They will directly replace electro-mechanical control differential transmitters (CDX) & thus provide digital control to existing analog servo systems. They simultaneously accept a 3 wire synchro input, (θ) (or 4 wire resolver) and a digital angle input (Ø), and provide as an output the sine and cosine of the difference of the two input angles (K sin wt sin (θ − Ø) and K sin wt cos (θ − Ø) ("wt" is the synchro excitation frequency). The input is transformer isolated and accuracy applies over the operating temperature range and with ±10% input amplitude and frequency variations. The operational amplifier outputs are not transformer isolated, and can be driven into external power amplifiers and Scott "T" transformers for 3 wire synchro outputs. A typical application of this series is in a conventional positioning servo system as a complex error processor. The use of the solid state CDX makes possible the design of servo systems that can be digitally programmed by direct computer input to the digital input of theSCDX.

FEATURES

* Hi accuracy & resolution.
* Low cost.
* Insensitive to input amplitude & frequency variations.
* Allows digital control of existing analog servo systems.
* No adjustments.
* Input transformer isolated.
* PC board mounting.
* Replaces electro-mechanical CDX
* Resolver transmitter available.

SPECIFICATIONS

MODELS	14 Bit	12 Bit	10 Bit
400 Hz.	SCDX40	SCDX412	SCDX410
60-Hz.	SCDX60	SCDX612	SCDX610
ACCURACY (1)	±4 minutes	±15 minutes	±30 minutes
RESOLUTION	14 Bits	12 Bits	10 Bits
CODING:	Natural Binary Angle	*	*
DIGITAL INPUT:	Parallel, positive logic, TTL/DTL Compatable	*	*
SYNCHRO INPUT (2):	11.8V rms L-L, 400 Hz. into 10K ohms, L-L balanced (SCDX40-L)	*	*
	90V rms L-L, 400 Hz. into 600K ohms, L-L balanced. (SCDX40—H)	*	*
(Transformer isolated)	90V rms in 60 Hz. into 600K ohms, L-L balanced (SCDX60-H)	*	*
RESOLVER INPUT:	26V rms L-L, 400 Hz. into 10K ohms L-L balanced (RCDX40)	*	*
OUTPUT VOLTAGES (3):	9.2K (Ø) sin (θ − Ø) sin wt. θ = synchro input angle (7V rms)	*	*
	9.2K (Ø) Cos (θ − Ø) sin wt. Ø = digital input angle (7Vrms) (KØ)=1 ± .08	*	*
OUTPUT IMPEDANCE:	10 ohms max. ∠-90°	*	*
POWER SUPPLIES:	+15V @ 90 ma., -15V @ 25 Ma., +5V @ 75 ma.		
TEMPERATURE RANGE: OPERATING:	0°C to 70°C (-1)	*	*
	-55°C to +85°C (-2)	*	*
STORAGE:	-55°C to +125°C	*	*
SIZE:	(A) 2.6" x 3.1" x 1"H (B) 2.6" x 3.1" x .82"H(-D) (C) 60 Hz. units have external input Scott "T" (2.2" x 1.2" x .82"H)		

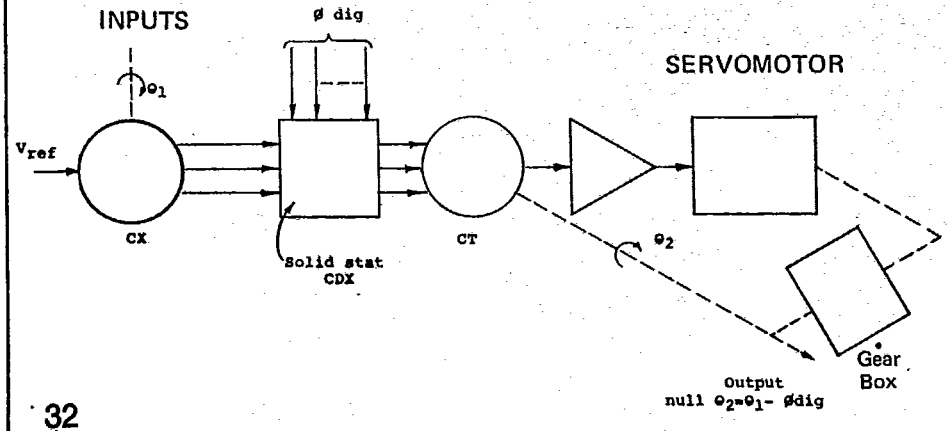
NOTES:
(1) Accuracy applies over operating temperature range, ±10% amplitude and frequency variations, ±5% power supply variations, 10% signal harmonic distortion.
(2) Different input voltages and frequencies available.
(3) Different output voltage and external power stages and Scott "T" transformers available.

ORDERING GUIDE:
(1) Specify basic model desired.
(2) Add operating temperature range (-1 or -2).
(3) To order a 14 bit, 400 Hz., 11.8V synchro input unit to operate from 0°C to 70°C use Pt. No. SCDX40-L-1

*Same as SCDX40

Specifications subject to change without notice.

TYPICAL SERVO APPLICATION



MECHANICAL—SCDX