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Find the *DDC SR-202* at our website: *Click HERE*

SR/HSR-102A & SR/HSR-202

ILC DATA DEVICE CORPORATION

SYNCHRO AND RESOLVER ANGLE INDICATORS
Convert Synchro and Resolver Signals to BCD Angle



Replaced by SR-103/SR-203 Series for new designs

DESCRIPTION

The SR-102A and SR-202 are high quality angle indicators intended to meet the demand for compact precision synchro and resolver test equipment. These instruments can be easily interfaced with external digital control equipment for such applications as information translators in quality control inspection systems, production testing of synchros and resolvers, aircraft navigation systems, machine tool control, and antenna positioning. The HSR-102A and HSR-202 are higher accuracy versions of the SR-102A and SR-202, respectively.

The SR-102A is normally supplied in a standard half-rack mount enclosure. It is designed mainly for dedicated applications, since it must be programmed remotely or by jumpers at the rear connector.

The SR-202, on the other hand, is an enclosed bench-type instrument with a carry handle which also can serve as a tilt stand. Input selection, status and fault tests may be controlled either manually by front panel switches or remotely via signals to the rear connector. A single switch transfers control between the front panel and the rear connector. Front panel and rear connector signal inputs are fully isolated and can be multiplexed with the local/remote switch.

Both instruments are available in two accuracy grades: ±0.03° (prefix SR), and ±0.01° (prefix HSR). Resolution is ±0.01°, with parallel digital outputs. Control logic includes a Converter Busy output; an Inhibit input which stops tracking for data read-out, and a Data Enable input which enables the parallel output data at the rear connector. All logic is TTL/DTL compatible.

A BITE logic signal indicates a fault or failure to maintain tracking; at the user's option the display can be blanked to signal the BITE condition. The display has five seven-segment LED digits, equipped with a polarizing filter for better readability.

An internal 400 Hz reference excitation source may be ordered as an option for the SR-102A. This instrument may then be used as a shaft encoder in conjunction with a suitably accurate resolver or synchro.

The angle indicator SR-202 and its sister instrument, the angle simulator SR-400, together provide a complete synchro/resolver measurement and stimuli capacity for automatic and semi-automatic test equipment (ATE).

FEATURES

- *PROGRAMMABLE SYNCHRO OR RESOLVER INPUTS: Selectable 90V, 26V, or 11.8 signal voltage levels for a full 47 – 1000 Hz carrier frequency range, and for a 10 – 130V reference voltage range*
- *WORST CASE ACCURACY: ±0.03° (SR) or ±0.01° (HSR)*
- *TRANSFORMER ISOLATION FOR SIGNAL AND REFERENCE INPUTS*
- *TYPE II SERVO TRACKING LOOP; NO VELOCITY LAG AND CONTINUOUSLY AVAILABLE OUTPUT FOR RATES UP TO 3 RPS (1080°/SEC)*
- *LOGIC CONTROL WITH CONVERTER BUSY, INHIBIT, DATA ENABLE AND LAMP TEST*
- *FAULT MONITOR INDICATES FAILURE TO TRACK*
- *NO ADJUSTMENTS OR CALIBRATIONS; NO WARM UP, DRIFT, OR JITTER*
- *OPERATES WITH TRANSFORMER ISOLATION FROM LINE VOLTAGE: 115/230V; 47 – 440 Hz*

SR/HSR-102A and SR/HSR-202

DDC
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SPECIFICATIONS

PARAMETER	VALUE
RESOLUTION	0.01°
ACCURACY (ALL CAUSES)	
SR-102A and SR-202	±0.03°
HSR-102A and HSR-202	±0.01°
ANGLE RANGE	000.00° to 359.99°, continuous rotation
DISPLAY	5-Digit, 7-Segment LED with polarizing filter
REFERENCE INPUT	
Input Type	Transformer isolation
Voltage	10 to 130V
Frequency	47 to 1000Hz
Input Impedance	25K ohms min
Allowed Phase Shift	±20° relative to signal, for full accuracy
Breakdown Voltage	±500VDC to Logic Gnd
SIGNAL INPUT	
Input Type	Synchro or Resolver, transformer isolation
Voltage	11.8V, 26V, or 90V Line-to-Line
Frequency	Same as Reference
Impedance	750KΩ min
Tolerances:	
Voltage	±20%
Harmonics	±10%
Breakdown Voltage	±500VDC to Logic Gnd
DYNAMICS	
Tracking Rate, no error	1080°/sec Hi Bandwidth, 250°/sec Lo Bandwidth
Synchronizing Time	0.3 sec
DIGITAL SIGNALS (DTL & TTL Compatible)	
Inputs:	
Loading	3 Standard TTL loads
Inhibit	"1" or open = Normal tracking "0" or GND = Hold (Freeze)
Data Enable	"1" or open: Remote–output digital data = input angle "0" or GND: Remote–output digital data = 000.00°
Lamp Test	"1" or open = Normal display operation "0" or GND = all display segments "on" = (888.88°)
Outputs:	
Drive Capability	5 Standard TTL loads with buffered output
BCD Angle	5 BCD decades, 18 data lines total, positive true logic, continuously available: 200°, 100°, 80°, 40°, 20°, 10°, 8°, 4°, 2°, 1°, 0.8°, 0.4°, 0.2°, 0.1°, 0.08°, 0.04°, 0.02°, 0.01°
BITE	"1" = Fault or loss of tracking "0" = Normal tracking
Converter Busy	"0" = Busy (Counter is being updated) "1" = Data Stable
FRONT PANEL CONTROLS (SR-202 only)	
Track/Freeze	Inhibits converter tracking
Bandwidth – Hi/Lo	Optimizes loop bandwidth; Hi = 360–1000Hz, Lo = 47 – 1000Hz carrier frequency
Local/Remote	Transfers control of the unit from manual (Front Panel) to remote (Rear Connector)
Lamp Test	Displays all 8's for seven segment display test
L-L Voltage	Selects either 11.8V, 26V or 90V L-L operation
Mode – Syn/Rslvr	Selects either synchro or resolver inputs
Power – On/Off	Main power control

PARAMETER	VALUE
TEMPERATURE RANGE	
Operating, Standard	0°C to +50°C
Optional	-55°C to +85°C
Storage	-65°C to +125°C
POWER INPUT	
Voltage	115/230V RMS ±10%
Power Frequency	47 to 440Hz
Fuse (on Rear Panel)	Buss, GMW -1, 1 Amp
Isolation	Transformer
PHYSICAL CHARACTERISTICS	
SR-102A	
Size	9-1/2 x 1-3/4 x 12-5/8 in. (24.1 x 4.4 x 32.1 cm)
Weight	6 lb (2.7 kg)
SR-202	
Size	8-1/8 x 3-1/2 x 14-1/2 in. (20.6 x 8.9 x 36.8 cm)
Weight	9 lb (4.1 kg)

ORDERING INFORMATION

All instruments are supplied with a mating connector, a detachable line cord, and an instruction manual.

1. Order the SR-102A or HSR-102A as follows:

SR-102A – DBA-488

- DBA-488: IEEE-488 Data Bus Adaptor:
  - Blank = SR-102A or HSR-102A only.
  - DBA-488 = SR-102A or HSR-102A mounted together with DBA-488 on a 3½" high, 19" wide rack mounting panel, including cable connections.
- Accuracy (worst case, all causes):
  - SR = ±0.03°
  - HSR = ±0.01°

2. Order the SR-202 or HSR-202 as follows:

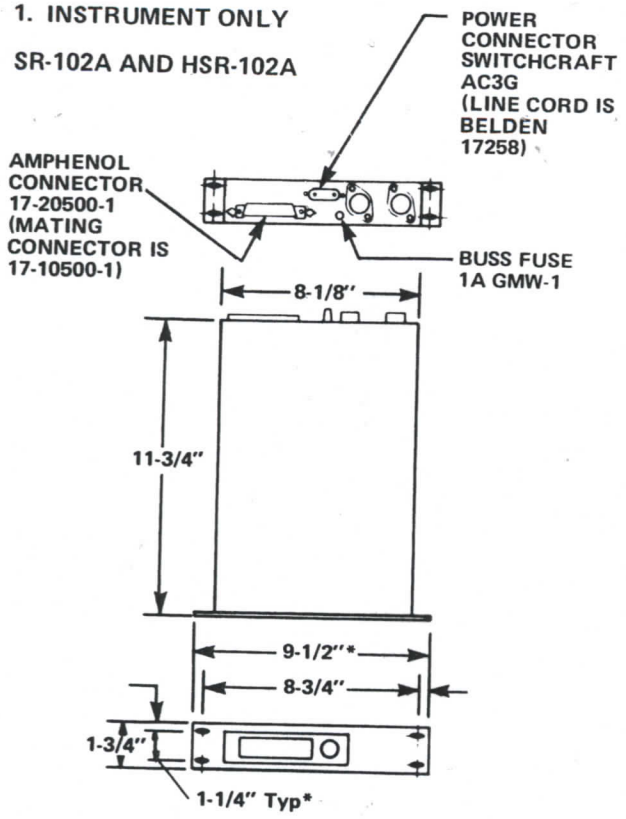
SR-202 – DBA-488

- DBA-488: IEE-488 Data Bus Adaptor:
  - Blank = SR-202 or HSR-202 only.
  - DBA-488 = SR-202 or HSR-202 with a DBA-488 mounted with a bracket at the rear of the instrument, including cable connections.
- Accuracy (worst case, all causes):
  - SR = ±0.03°
  - HSR = ±0.01°

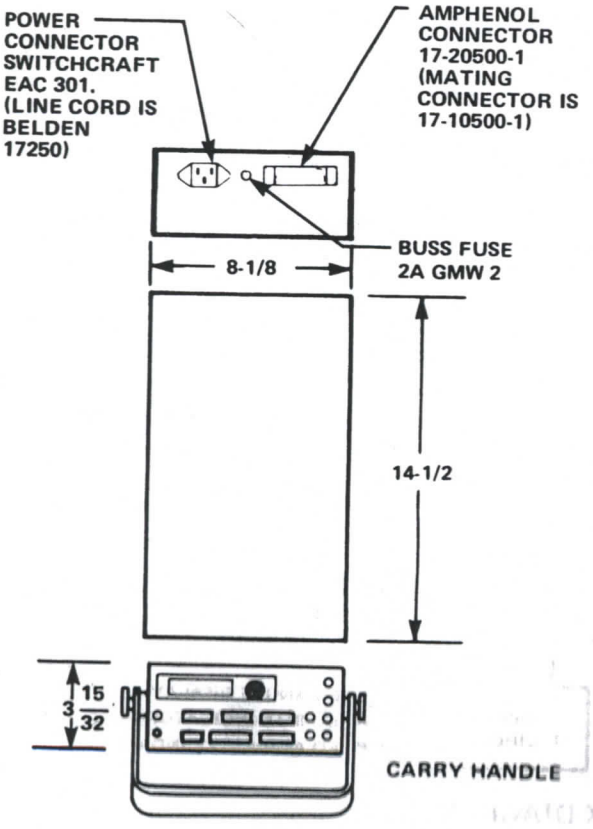
MECHANICAL OUTLINES

1. INSTRUMENT ONLY

SR-102A AND HSR-102A



SR-202 AND HSR-202

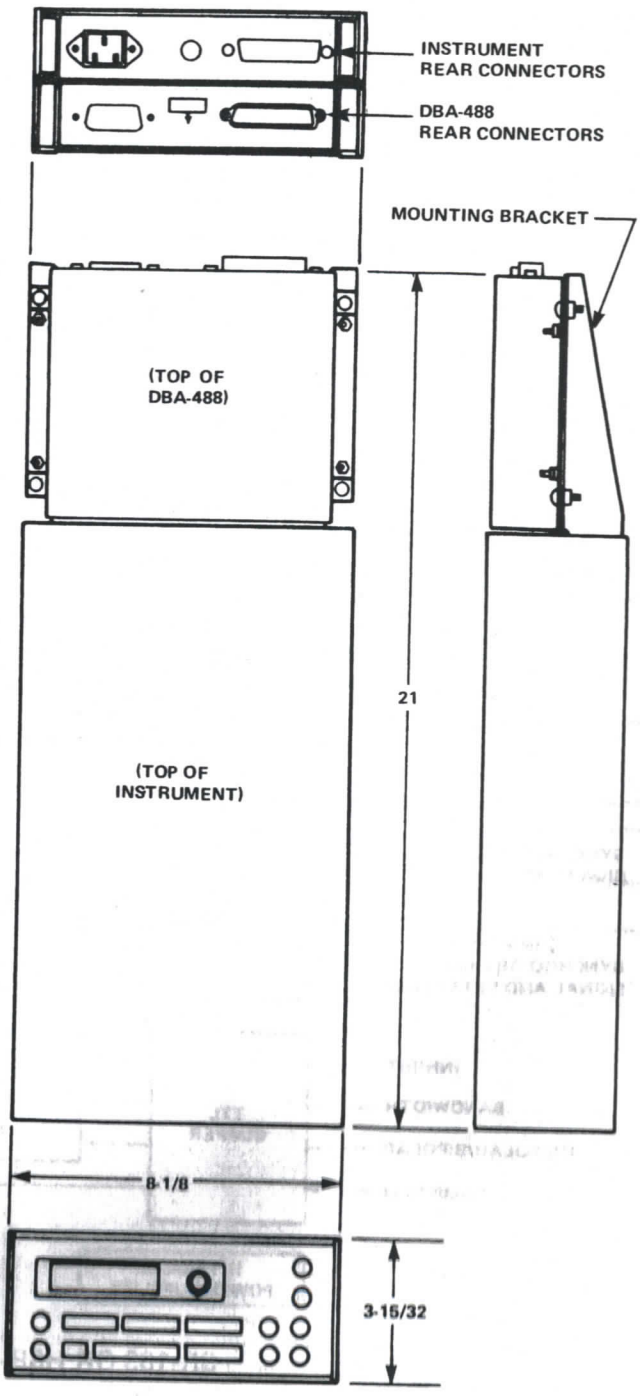


2. INSTRUMENT WITH DBA-488 DATA BUS ADAPTOR

SR-102A AND HSR-102A

The mechanical outline is the same as for the SR-103 instrument mounted with a DBA-488 on a 19" rack panel. Refer to the diagram shown in the Mechanical Outline section of the SR-103.

SR-202 AND HSR-102



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