



General

The HEIM DATaRec® D20fe, D120f and D200f are digital data acquisition mainframes that are equipped with signal conditioning modules according to applications. The ¼ ATR housing contains an interchangeable tape drive or solid state recording media according to speed, capacity and environmental requirements.

D20fe/D120f/D200f

| | |
|------------------------|---|
| Available module slots | 6 slots are available for signal conditioning modules, all modules can be used interchangeably |
| Total bit rate | D20fe: up to 28 Mbit/s D120f: up to 120 Mbit/s D200f: up to 240 Mbit/s (depending on modules and storage device installed) |
| Input signals | - PCM serial or different level parallel data - MIL 1553B buses - ARINC 429 buses - serial data, asynchronous and synchronous - different bandwidth analog data - Ethernet network communication - voice, compressed video - others on request |
| Dimensions | ¼ ATR size 190.5 x 193.5 x 318 mm (w x h x d) 7.5 x 7.6 x 12.5 in |
| Power supply | 20 - 36 V DC according to MIL-STD-704E Built-in battery back up module to bridge power loss and safe systems shut down |
| Power consumption | 120 W (maximum with options) |

Removable data storage cartridges

- CTA48: AIT2-drive, up to 50 Gbytes
- CSxxx: solid state drive, up to 128 Gbytes
- CSLxxx: solid state drive, up to 129 Gbytes

Built-in interfaces

Ethernet

100 Mbit/s Ethernet interface for recorder configuration
Connector 9 D-sub

Synchronization

Input and output connectors to daisy-chain up to 7 data acquisition units for synchronization purposes

GPS / general purpose serial

RS232 / RS422 asynchronous serial input and output for GPS data recording and reconstruction
Maximum baudrate 115.2 kBaud

Display

| | |
|-----------------------|---|
| Recording information | 12 character sunlight readable LED (green) |
| Recorder status | 8 character sunlight readable LED (red) |
| Status indicators | 3 x LED, for recorder, storage device and system status |
| Module status | 1 x green for data rate 1 x yellow for warning/error condition |

Technical Specification HEIM DATaRec® D20fe/D120f/D200f

Time coding

Input

| | |
|------------------|--|
| Standard codes | IRIG A, B, G, 1 pps / 10 pps and GPS time code |
| Input resolution | IRIG A: 100 µs IRIG B: 1 ms IRIG G: 10 µs |
| Signal level | 0.2 V _{pp} – 20 V _{pp} (IRIG A, B, G) RS232 (GPS), TTL (1 pps / 10 pps) |
| Input impedance | IRIG A, B, G: 100 kΩ |
| Connector | BNC for time code BNC for 1 pps / 10 pps 9-pin D-Sub for GPS |

Output

| | |
|------------------|--|
| Standard codes | IRIG A, B, G, J, 1 pps / 10 pps GPS replay as RS232 |
| Output accuracy | 2×10^{-5} s (standard) |
| Signal level | 2 V _{pp} on 75 Ω (IRIG A, B, G) RS232 (IRIG J), TTL (1 pps / 10 pps) |
| Output impedance | 75 Ω (IRIG A, B, G) |
| Synchronization | 1 pps / 10 pps output with 1 µs accuracy |
| Connector | BNC for IRIG A, B, G time code BNC for 1 pps / 10 pps 9-pin D-Sub for IRIG J and GPS |

Remote control, Data transfer

For the HEIM DATaRec® D20fe, D120f and D200f several possibilities are available to control the unit remotely

| | |
|-------------------|--|
| Power-on | when power is first applied, the recorder will start up in the default configuration (user defined) or the selected configuration set on the 9-pin D-Sub configuration connector |
| Contact | simple remote functions (record, event, and stop) with contact switches |
| Cockpit mount | control functions, recorder status and |
| Remote (optional) | recording information displays |

IRIG 106 chapter 10 option

The IRIG 106 chapter 10 option is marked with a "/1".
With this option D20fe, D120f and D200f have got the following added functionality

| | |
|----------------|--|
| Download port | IEEE 1394b, Gigabit Ethernet (only if /1 cartridge is used) |
| Remote control | IRIG 106 chapter 10 compliant |
| Status output | IRIG 106 chapter 10 compliant |

Environmental specifications

| | |
|---------------|---|
| Vibration | 10 g, MIL-STD-810E, category 4, 5 and 6 |
| Acceleration | 20 g, in all directions (continuous) |
| Shock | 20 g, MIL-STD-810E |
| Temperature | -30°C - +65°C, operating |
| Storage temp. | -40°C - +70°C, (long term) |
| Humidity | 0 - 95% relative, non-condensing |
| Altitude | 0 – 18.000 m (0 – 65.000 ft) |
| RFI | designed to MIL-STD-461D |

The environmental specifications for the complete system are depending on the installed storage media

The given values apply for the complete system only if used with a CSxxx (solid state) media cartridge
Please refer to the different technical specifications of CTAx (tape) and CSLx media cartridges

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Page 2 of 2

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