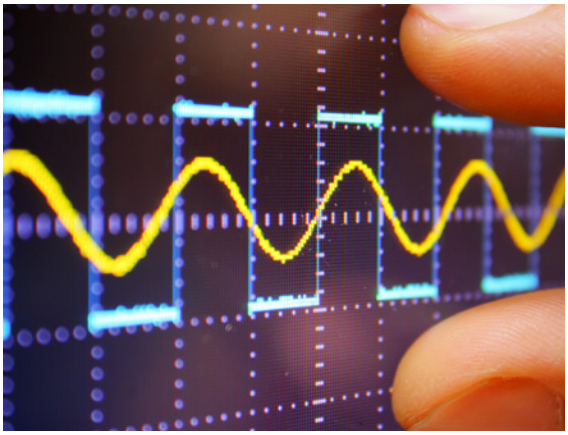
HIGH PRECISION CURRENT TRANSDUCERS

# Test & Measurement












**PRODUCT SELECTION GUIDE**

Precision current measurement for signal analysis, design optimization, conformity testing, diagnostics, and reference-unit use.

DANISENSE

# Transducer Setup and Accessories

## Current Output

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Transducer

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Interface

**DSSIU-xx**



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Current Output

## Integrated Voltage Output

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Transducer

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**DSSIU-xx**



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Voltage Output

## Add-On Voltage Output Module

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**DSUBx**



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Interface

**DSSIU-xx-V**



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Voltage Output Module

VOM

↓

Voltage Output



## Current Transducer Range Overview

| Output Type | Family Name | Rated Primary Current (A rms) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 50 | 100 | 200 | 300 | 400 | 500 | 600 | 1000 | 1200 | 2000 | 5000 | 10000 |
| Current | DT Series | ■ | ■ | ■ | | | | | | | | | |
| | DS Series | ■ | | ■ | ■ | ■ | | ■ | | | | | |
| | DQ Series | | | | | | | | ■ | | | | |
| | DN Series | | | | | | | | | ■ | | | |
| | DM Series | | | | | | | | | | ■ | ■ | |
| | DL Series | | | | | | | | | | | | ■ |
| | DR Series | | | | | | | | | | | | ■ |
| Voltage | DS Series | ■ | | ■ | ■ | ■ | | ■ | ■ | | | | |
| | DW Series | | | | | | ■ | | | | | | |
| | DM Series | | | | | | | | | ■ | | | |
| | DL Series | | | | | | | | | | ■ | | |
| | DR Series | | | | | | | | | | | ■ | ■ |

## Current Output Product Range

| | | DT50ID | DS50ID | DT100ID | DT200ID | DS200ID | DS300ID | DS400ID | DS600ID |
|---|---|---|---|---|---|---|---|---|---|
| | |  |  |  |  |  |  |  |  |
| **Measuring range** | IPM | 75 A | 150 A | | 285 A | 370 A | 500 A | 600 A | 1000 A |
| **Nominal AC current** | IPN_AC | 50 A rms | | 100 A rms | 200 A rms | | 300 A rms | 400 A rms | 600 A rms |
| **Nominal DC current** | IPN_DC | 50 A | 75 A | 100 A | 200 A | 300 A | 450 A | 600 A | 900 A |
| **Overload capacity** (non measured, 100ms) | IOL/0.1s | 250 A | 1500 A | 500 A | 1000 A | 1500 A | | 3000 A | 4500 A |
| **Nominal secondary current** | ISN | 100 mA | 150 mA | 100 mA | 200 mA | 600 mA | 450 mA | 300 mA | 600 mA |
| **Primary/ secondary ratio** | (n1 :n2) | 1:500 | 1:500 | 1:1000 | 1:1000 | 1:500 | 1:1000 | 1:2000 | 1:1500 |
| **Linearity error** | ℰL | 1.5 ppm | 1 ppm | | 1 ppm | | | | |
| **Initial Electric offset** | IOE (ℰC) | 100 ppm | 60 ppm | 50 ppm | 25 ppm | 15 ppm | 14 ppm | 9 ppm | 7 ppm |
| **DC Total Accuracy** | accℰ | 102 ppm | 61 ppm | 51 ppm | 26 ppm | 16 ppm | 15 ppm | 10 ppm | 9 ppm |
| **Offset temperature coefficient** | TCIOE | 0.8 ppm/°C | 0.4 ppm/°C | 0.3 ppm/°C | 0.2 ppm/°C | 0.1 ppm/°C | | | |
| **Offset stability with time** | IOE/time | 0.1 ppm/month | 0.4 ppm/month | 0.1 ppm/month | 0.1 ppm/month | | | | |
| **Bandwidth** (-3dB) | f(.3dB) | 2 MHz | 1 MHz | 2 MHz | 2 MHz | 1 MHz | 650 kHz | 300 kHz | 450 kHz |
| **Operating temp. range** | Ta | -40°C to +85°C | | | | -40°C to +85°C | | | |
| **Power supplies** (positive/ negative current consumpt. excluding Is) | UC | +/- 15V+/-5% (+40 mA / -35mA) | ±15 V±5% (+104 mA/-96 mA) | +/- 15V+/-5% (+40 mA / -35mA) | +/- 15V+/-5% (+40 mA / -35mA) | +/- 15V+/-5% (+40 mA / -35mA) | | | |
| **Diameter of aperture** | Φ | 20.7 mm | 27.6 mm | 20.7 mm | 20.7 mm | 27.6 mm | | | |
| **External dimensions (approximate)** | WxHxD | 76 x 64.5 x 35 mm | 121.4 x 107.5 x 44.5 mm | 76 x 64.5 x 35 mm | 76 x 64.5 x 35 mm | 121.4 x 107.5 x 44.5 mm | | | |
| **Connection** | | DSUB 9-pin | | | DSUB 9-pin | | | | |
| **Calibration (Test) winding** | | None | Optional | None | None | Optional | | | |
| **Weight (approximate)** | M | 150 g | 600 g | 150 g | | 600 g | | | |

Data are for informative purposes only, please consult individual datasheets on Danisense website for most up-to-date values (**) reinforced insulation, OV Cat III, pollution degree 2

## Current Output Product Range

| | | DQ640ID-B<br><br>configurable (*) | DN1000ID<br> | DM1200ID<br> | DL2000ID<br> | DR5000IM<br> | DR10000IM<br> |
|---|---|---|---|---|---|---|---|
| **Measuring range** | IPM | 640 A | 1500 A | 1800 A | 3000 A | 8000 A | 11000 A |
| **Nominal AC current** | IPN_AC | 28 A to 452 A rms<br>(step 14 A rms) | 1000 A rms | 1200 A rms | 2000 A rms | 5000 A rms | 7000 A rms |
| **Nominal DC current** | IPN_DC | 40 A to 640 A (step 20 A) | 1000 A | 1500 A | 3000 A | 8000 A | 10000 A |
| **Overload capacity**<br>(non measured, 100ms) | IOL/0.1s | 4500 A | 5000 A | | 10000 A | 20000 A | |
| **Nominal secondary current** | ISN | 1000 mA | 667 mA | 1000 mA | 2000 mA | 3200 mA | 4000 mA |
| **Primary/ secondary ratio** | (n1 :n2) | 40 A to 640 A step 20<br>1:40 to 1:640 | 1:1500 | | 1:1500 | 1:2500 | |
| **Linearity error** | ℰL | 3 ppm | 1 ppm | | 1 ppm | | |
| **Initial Electric offset** | IOE (ℰC) | 10 ppm | 5 ppm | | 6 ppm | 3 ppm | |
| **DC Total Accuracy** | accℰ | 13 ppm | 7 ppm | 6 ppm | 7 ppm | 4 ppm | |
| **Offset temperature coefficient** | TCIOE | 0.1 ppm/°C | | | 0.1 ppm/°C | | |
| **Offset stability with time** | IOE/time | 0.1 ppm/month | | | 0.1 ppm/month | | |
| **Bandwidth** (-3dB) | f(.3dB) | 300 kHz | 400 kHz | | 300 kHz | 80 kHz | |
| **Operating temp. range** | Ta | 0°C to +55°C | -40°C to +85°C | | -40°C to +65°C | head: 0 to + 70°C / controller: 0 to +45°C | |
| **Power supplies**<br>(positive/ negative current consumpt. excluding Is) | UC | ±15 V±5%<br>(+105 mA/-96 mA) | ±15 V±5%<br>(+/-81 mA) | ±15 V±5%<br>(+145 mA/-135 mA) | ±15 V±5%<br>(+185 mA/-170 mA) | AC 100 ~ 240 V - 50/60 Hz or<br>DC 127 V ~ 417 V | |
| **Diameter of aperture** | Φ | 28.1 mm | 41 .2 mm | 45.0 mm | 68.0 mm | 150.0 mm | 140.0 mm |
| **External dimensions (approximate)** | WxHxD | 104 x 106 x 49 mm | 132 x 112 x 44 mm | 179 x 17 4 x 58 mm | 239.8 x 230 x 82 mm | head: 420 x 325 x 122 mm<br>controller: 483 x 88.1 x 241 mm | |
| **Connection** | | DSUB 9-pin | | | DSUB 9-pin | Banana plugs | |
| **Calibration (Test) winding** | | 100 turns/0.1 A | Optional | | Optional | | |
| **Weight (approximate)** | M | 600 g | 800 g | 1.8 kg | 5.7 kg | head: 17 kg (DR10000/ 19 kg) ; controller: 6 kg | |

Data are for informative purposes only, please consult individual datasheets on Danisense website for most up-to-date values
(*) rating configurable by PCB pattern layout for DP model and by DSUB21 connector for DQ model
(**) reinforced insulation, OV Cat III, pollution degree 2

## Voltage Output Product Range

| | | DS50UB-10V | DS50UB-1V | DS200UB-10V | DS200UB-1V |
|---|---|---|---|---|---|
| **Measuring range** | IPM | 55 A | 100 A | 220 A | 330 A |
| **Nominal AC current** | IPN_AC | 36 A rms | 50 A rms | 140 A rms | 200 A rms |
| **Nominal DC current** | IPN_DC | 50 A | 75 A | 200 A | 300 A |
| **Overload capacity** (non measured, 100ms) | IOL/0.1s | 500A | 1500 A | 500A | 1500 A |
| **Nominal secondary voltage** | VSN | 10 V | 1.5 V | 10 V | 1.5 V |
| **Primary / secondary conversion ratio** | (n1 :n2) | 200 mV/A | 20 mV/A | 50 mV/A | 5 mV/A |
| **DC Total Accuracy** | ℰL | 145 ppm | 121 ppm | 82 ppm | 60 ppm |
| **Bandwidth** (-3dB) | f(.3dB) | 500 kHz | | | |
| **Linearity error** | ℰL | 5 ppm | 24 ppm | 10 ppm | 10 ppm |
| **OFFSET ERROR** | | | | | |
| Initial | VOE | 90 ppm | 72 ppm | 22 ppm | 20 ppm |
| Versus temperature | TCVOE | 1 ppm/°C | 1 ppm/°C | 0.25 ppm/°C | 0.1 ppm/°C |
| Versus time | IOE/time | 0.2 ppm/month | 1 ppm/month | 0.2 ppm/month | 0.3 ppm/month |
| **RATIO ERROR** | | | | | |
| Initial | ℰC | 50 ppm | 25 ppm | 50 ppm | 5 ppm |
| Versus temperature | TCℰC | 3 ppm/°C | | | 1 ppm/°C |
| Versus time | ℰC/time | 10 ppm/month | 0.3 ppm/month | 10 ppm/month | 5 ppm/month |
| **Operating temp. range** | Ta | -40°C to +85°C | | | |
| **Power supplies** | UC | ±15 V±5% | | | |
| **Diameter of aperture** | Φ | 27.6 mm | | | |
| **External dimensions** | WxHxD | 121.4 x 107.5 x 44.5 mm | | | |
| **Weight** | M | | | | |
| **Output connector** | | BNC | | | |
| **Calibration (Test) winding** | | Optional | | | |



| DS300UB-10V | DS300UB-1V | DS400UB-10V | DS400UB-1V | DW500UB-2V | DS600UB-10V |
|---|---|---|---|---|---|
| 330 A | 450 A | 440 A | 600 A | 750 A | 660 A |
| 210 A rms | 300 A rms | 280 A rms | 400 A rms | 500 A rms | 424 A rms |
| 300 A | | 400 A | 600 A | 500 A | 600 A |
| 1500 A | | 3000 A | 1500 A | | |
| 10 V | 1.5 V | 10 V | 1.5 V | 2V | 10 V |
| 33.3 mV/A | | 25 mV/A | 2.5 mV/A | 4 mV/A | 16.67 mV/A |
| 45 ppm | 170 ppm | 75 ppm | 55 ppm | 15 ppm | 70 ppm |
| 500 kHz | | | 300 kHz | 15 ppm | 300 kHz |
| 15 ppm | | 10 ppm | 15 ppm | 80 ppm | 10 ppm |
| | | | | | |
| 10 ppm | 15 ppm | 10 ppm | 80 ppm | | 10 ppm |
| 1 ppm/°C | 0.2 ppm/°C | 1 ppm/°C | 0.2 (2) ppm/°C | | 0.2 ppm/°C |
| 0.3 ppm/month | 0.2 ppm/month | 0.3 ppm/month | | | 0.2 ppm/month |
| | | | | | |
| 5 ppm | 50 ppm | 5 ppm | 50 ppm | | |
| 2 ppm/°C | 3 ppm/°C | 2 ppm/°C | 3 ppm/°C | | |
| 3 ppm/month | 10 ppm/month | 3 ppm/month | 0.3 ppm/month | | 10 ppm/month |
| -40°C to +85°C | | | | | |
| ±15 V±5% | | | AC 85 to 265 V - 50/60 Hz | | ±15 V±5% |
| 27.6 mm | | | 25.0 mm | | 27.6 mm |
| 121.4 x 107.5 x 44.5 mm | | | head: 128x92x42 mm Box: 194x11 0x50 mm | | 121.4 x 107.5 x 44.5 mm |
| 600 g | | | 1.5 kg | | 600 g |
| BNC | | | | | |
| Optional | | | | | |

## Voltage Output Product Range

| | | DS600UB-1V | DS1000UB-10V | DM1200UB-10V | DM1200UB-1V |
|---|---|---|---|---|---|
| | |  |  |  |  |
| **Measuring range** | IPM | 950 A | 1100 A | 1320 A | 1800 A |
| **Nominal AC current** | IPN_AC | 600 A rms | 700 A rms | 850 A rms | 1200 A rms |
| **Nominal DC current** | IPN_DC | 900 A | 1000 A | 1200 A | |
| **Overload capacity** (non measured, 100ms) | IOL/0.1s | 1500 A | | | |
| **Nominal secondary voltage** | VSN | 1.5 V | 10 V | | 1 V |
| **Primary/ secondary conversion ratio** | Conv.Ratio | 1.67 mV/A | 10 mV/A | 8.33 mV/A | |
| **DC Total Accuracy** | accℰ | 55 ppm | 45 ppm | 75 ppm | 35 ppm |
| **Bandwidth** (-3dB) | f(.3dB) | 300 kHz | | | 400 kHz |
| **Linearity error** | ℰL | 40 ppm | 35 ppm | 15 ppm | |
| **OFFSET ERROR** | | | | | |
| Initial | VOE | 10 ppm | | | |
| Versus temperature | TCVOE | 0.1 ppm/°C | 2 ppm/°C | 0.2 ppm/°C | 0.1 ppm/°C |
| Versus time | IOE/time | 0.3 ppm/month | | 0.2 ppm/month | 0.3 ppm/month |
| **RATIO ERROR** | | | | | |
| Initial | ℰC | 5 ppm | | 50 ppm | 10 ppm |
| Versus temperature | TCℰC | 1 ppm/°C | | 3 ppm/°C | 1 ppm/°C |
| Versus time | ℰC/time | 5 ppm/month | | 10 ppm/month | 3 ppm/month |
| **Operating temp. range** | Ta | -40°C to +85°C | | | |
| **Power supplies** | UC | ±15 V±5% | | | |
| **Diameter of aperture** | Φ | 27.6 mm | | | |
| **External dimensions** | WxHxD | 121.4 x 107.5 x 44.5 mm | | 179 x 174 x 58 mm | |
| **Weight** | M | 600 g | | 1.8 kg | |
| **Output connector** | | BNC | | | |
| **Calibration (Test) winding** | | Optional | | | |



| | DL2000UB-10V | DL2000UB-1V | DR5000UX-10V/5000A | DR5000UX-10V/7500A | DR10000UX-10V |
|---|---|---|---|---|---|
| |  |  |  |  |  |
| **Measuring range** | 2200 A | 3000 A | 5500 A | 8000 A | 11000 A |
| **Nominal AC current** | 1414 A rms | 2000 A rms | 3600 A rms | 5000 A rms | 7000 A rms |
| **Nominal DC current** | 2000 A | 3000 A | 5000 A | 7500 A | 10000 A |
| **Overload capacity** (non measured, 100ms) | 10000 A | | 20000 A | | 35000 A |
| **Nominal secondary voltage** | 10 V | 1.5 V | 10 V | | |
| **Primary/ secondary conversion ratio** | 5 mV/A | 0.5 mV/A | 2 mV/A | 1.33 mV/A | 1 mV/A |
| **DC Total Accuracy** | 108 ppm | 106 ppm | 23 ppm | 44 ppm | 23 ppm |
| **Bandwidth** (-3dB) | 300 kHz | | 100 kHz | 80 kHz | 100 kHz |
| **Linearity error** | 30 ppm | 80 ppm | 7 ppm | | |
| **OFFSET ERROR** | | | | | |
| Initial | 8 ppm | 6 ppm | 11 ppm | 7 ppm | 11 ppm |
| Versus temperature | 0.1 ppm/°C | | 0.3 ppm/°C | | |
| Versus time | 0.1 ppm/month | | | | |
| **RATIO ERROR** | | | | | |
| Initial | 100 ppm | | 5 ppm | 30 ppm | 5 ppm |
| Versus temperature | 1 ppm/°C | | 1.5 ppm/°C | | |
| Versus time | 5 ppm/month | | 20 ppm/month | 10 ppm/month | 20 ppm/month |
| **Operating temp. range** | -40°C to +65°C | | head: 0 to +60°C controller: 0 to +45°C | | head: 0 to +50°C controller: 0 to +45°C |
| **Power supplies** | ±15 V±5% | | AC 100 ~ 240 V - 50/60 Hz or DC127 V ~ 417 V | | |
| **Diameter of aperture** | 150.0 mm | 68.0 mm | 150.0 mm | | 140.0 mm |
| **External dimensions** | 239.8 x 230 x 82 mm | | head: 420 x 325 x 122 mm controller: 483 x 88 x 241 mm | | |
| **Weight** | 5.7 kg | | head: 17 kg cotroller: 6 kg | | head: 19 kg controller: 6 kg |
| **Output connector** | BNC | | mini XLR | | mini XLRw |
| **Calibration (Test) winding** | Optional | | | | |

# System Interface Units
# Power Supplies and Cables






## System Interface Units

| Number of Channels | | | |
|---|---|---|---|
| **Output Type** | **1** | **4** | **6** |
| **Current Output** |  **DSSIU-1** |  **DSSIU-4-1U** |  **DSSIU-6-1U** |
| **Voltage Output** |  **DSSIU-1-V** | **N.A** |  **DSSIU-6-1U-V** |
| Current Transducers | | | |
| **DT series** | YES | YES | YES |
| **DS series** | YES | YES | YES |
| **DQ series** | YES | YES | YES |
| **DN series** | YES | YES | YES |
| **DM series** | YES | YES | YES |
| **DL series** | **NO** | YES | YES* |

(*) 4 max for 110VAC power supply

## System Interface Units

| Number of Channels | | |
|---|---|---|
| **Output Type** | **1** | **6** |
| **Voltage Output** |  DSSIU-1-V |  DSSIU-6-1U-V |
| **Voltage Output Module (VOM)** | | |
| **VOM0100-10** | YES | YES |
| **VOM0300-10** | YES | YES |
| **VOM0400-10** | YES | YES |
| **VOM0667-10** | YES | YES |
| **VOM0800-10** | YES | YES |
| **VOM00100-1** | YES | YES |
| **VOM0333-1** | YES | YES |
| **VOM1333-10** | **NO** | YES |
| **VOM0300-1** | YES | YES |
| **VOM0400-1** | YES | YES |
| **VOM0667-1** | YES | YES |
| **VOM0800-1** | YES | YES |
| **VOM0333-1** | YES | YES |
| **VOM1333-1** | **NO** | YES |

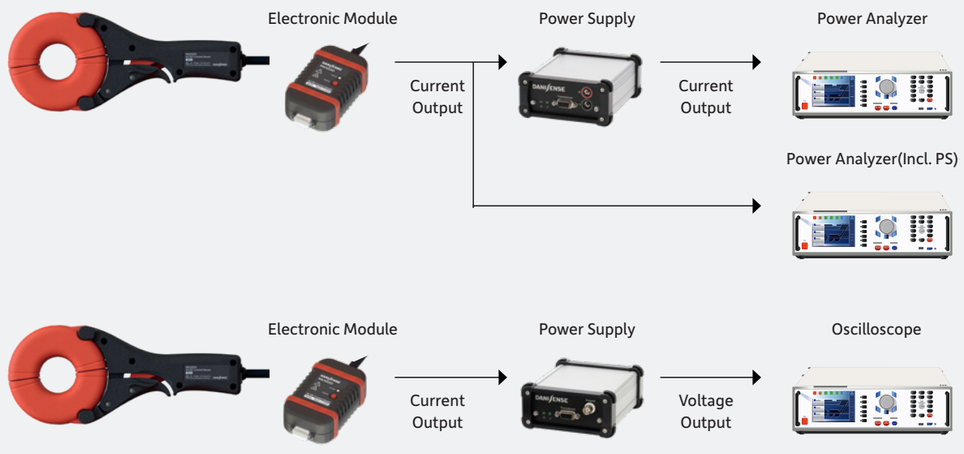
## Power Supply Cables

| Cable Length | | | | | | |
|---|---|---|---|---|---|---|
| **Family Name** | **2M** | **3M** | **5M** | **10M** | **15M** | **20M** |
|  DSUB CABLE | **DSUB2** PN: 1411100001 | **DSUB3** PN: 1411100006 | **DSUB5** PN: 1411100002 | **DSUB10** PN: 1411100003 | **DSUB15** PN: 1411100005 | **DSUB20** PN: 1411100004 |
|  DS POWER CABLE | | **DSUB-POWER** PN: 1412200002 | | | | |
|  DSID POWER CABLE | | **DSID-POWER** PN:1412200001 | | | | |
| **Power Supply Output Cables** | **2M** | **3M** | **5M** | **10M** | **15M** | **20M** |
|  XLRm **Current** | **XLRM-CURRENT** PN: 1413100002 | | | | | |
|  XLRm **Voltage** | **XLRM-VOLTAGE** PN: 1417100003 | | | | | |

## Current Clamp Setup and Configuration Options

| Output Type | Family Name | Primary Current (A rms) | | |
|---|---|---|---|---|
| | | 200 | 500 | 1000 |
| Current | MK Series | | | |




| | | MK200ID | MK500ID | MK1000ID-CP01 |
|---|---|---|---|---|
| **Measuring range** | IPM | 200 A | 500 A | 1000 A |
| **Nominal AC current** | IPN_AC | 200 A rms | 500 A rms | 1000 A rms |
| **Nominal DC current** | IPN_DC | 200 A | 500 A | 1000 A |
| **Overload capacity** (non measured, 100ms) | IOL/0.1s | 600 A | 1500 A | 1500 A |
| **Nominal DC secondary current/ voltage** | ISN_DC | 333.33 mA | | 714.29 mA |
| **Primary/ secondary ratio** | (n1 :n2) | 600 | 1500 | 1400 |
| **Linearity error** | ℰL | 20 ppm | | 40 ppm |
| **Initial Electric offset** | IOE (ℰC) | | | |
| **DC Total Accuracy** | accℰ | | | |
| **Offset temperature coefficient** | TCIOE | -40 C to +85 C | | |
| **Offset stability with time** | IOE/time | | | |
| **Bandwidth** (-3dB) | f(.3dB) | 1 MHz | | N/A |
| **Operating temp. range** | Ta | | | |
| **Power supplies** (positive/ negative current consumpt. excluding Is) | UC | +/- 15 V+/-5% | | |
| **Diameter of aperture** | Φ | 39.6 | | |
| **External dimensions (approximate)** | WxHxD | 257 x 110 x 35/27 mm | | |
| **Connection** | | DSUB 9-pin | | |
| **Calibration (Test) winding** | | | | |
| **Weight (approximate)** | M | | | |

# Danisense Calibration Lab

ISO/IEC 17025 accredited AC & DC Calibration

## AC Accredited Calibration

**Standard Calibration Points**

Standard AC calibration is performed at 10%, 25%, 40%, 55%, 70%, 85%, and 100% of the transducer's nominal AC current.

Results are reported a statement of conformity (for Danisense transducers only).

**Custom Calibration Points**

If the standard calibration points do not match your requirements, customized calibration points can be provided.

**Measuring Capability**

| | |
|---|---|
| DC | 1A - 21 kA |
| AC ratio (53 Hz) | 1A - 1.2 kA |
| AC phase (53 Hz) | 1A - 1.2 kA |




ilac-MRA DANAK CAL Reg.No. 613 Member of EA MLA

Danisense's Calibration Report example



## DC Accredited Calibration

**Standard Calibration Points**

Standard DC calibration is performed at 0, ±10%, ±25%, ±40%, ±55%, ±70%, ±85%, and ±100% of the transducer's nominal DC current.

Results are provided both with and without offset, including linearity analysis and a statement of conformity (for Danisense transducers only) on all test points.

**Custom Calibration Points**

If the standard calibration points do not match your requirements, customized calibration points can be provided.




For details, visit danisense.com/calibration-portal or email calibration@danisense.com



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