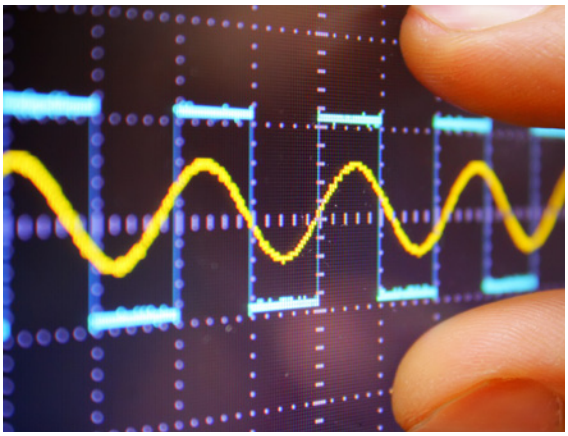
HIGH PRECISION CURRENT TRANSDUCERS

Test & Measurement



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Mess- und Prüftechnik. Die Experten.

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

Page 4-7 — Transducer: **xx..ID**

+

Page 15 — Cable: **DSUBx**

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Page 13 — Interface: **DSSIU-xx**

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Current Output

Integrated Voltage Output

Page 8-11 — Transducer: **xx..UB-xx-V**

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Voltage Output

Add-On Voltage Output Module

Page 4-7 — Transducer: **xx..ID**

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Page 15 — Cable: **DSUBx**

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Page 13 — Interface: **DSSIU-xx-V**

+ VOM

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Voltage Output

Current Transducer Range Overview

Output Type	Family Name	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												■

Rated Primary Current (A rms)

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	ƐL	1.5 ppm	1 ppm		1 ppm				
Initial Electric offset	IOE (ƐC)	100 ppm	60 ppm	50 ppm	25 ppm	15 ppm	14 ppm	9 ppm	7 ppm
DC Total Accuracy	accƐ	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	DN1000ID	DM1200ID	DL2000ID	DR5000IM	DR10000IM
		configurable (*)					
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 (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 (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 1:40 to 1:640	1:1500		1:1500	1:2500	
Linearity error	ƐL	3 ppm	1 ppm		1 ppm		
Initial Electric offset	IOE (ƐC)	10 ppm	5 ppm		6 ppm	3 ppm	
DC Total Accuracy	accƐ	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 (positive/ negative current consumpt. excluding Is)	UC	±15 V±5% (+105 mA/-96 mA)	±15 V±5% (+/-81 mA)	±15 V±5% (+145 mA/-135 mA)	±15 V±5% (+185 mA/-170 mA)	AC 100 ~ 240 V - 50/60 Hz or 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 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	ƐL	145 ppm	121 ppm	82 ppm	60 ppm
Bandwidth (-3dB)	f(.3dB)	500 kHz			
Linearity error	ƐL	5 ppm	24 ppm	10 ppm	40 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	ƐC	50 ppm	25 ppm	50 ppm	5 ppm
Versus temperature	TCƐC	3 ppm/°C			1 ppm/°C
Versus time	ƐC/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	accƐ	55 ppm	45 ppm	75 ppm	35 ppm
Bandwidth (-3dB)	f(.3dB)	300 kHz			400 kHz
Linearity error	ƐL	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	ƐC	5 ppm		50 ppm	10 ppm
Versus temperature	TCƐC	1 ppm/°C		3 ppm/°C	1 ppm/°C
Versus time	ƐC/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
2200 A	3000 A	5500 A	8000 A	11000 A
1414 A rms	2000 A rms	3600 A rms	5000 A rms	7000 A rms
2000 A	3000 A	5000 A	7500 A	10000 A
10000 A		20000 A		35000 A
10 V	1.5 V	10 V		
5 mV/A	0.5 mV/A	2 mV/A	1.33 mV/A	1 mV/A
108 ppm	106 ppm	23 ppm	44 ppm	23 ppm
300 kHz		100 kHz	80 kHz	100 kHz
30 ppm	80 ppm	7 ppm		
8 ppm	6 ppm	11 ppm	7 ppm	11 ppm
0.1 ppm/°C		0.3 ppm/°C		
0.1 ppm/month				
100 ppm		5 ppm	30 ppm	5 ppm
1 ppm/°C		1.5 ppm/°C		
5 ppm/month		20 ppm/month	10 ppm/month	20 ppm/month
-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
±15 V±5%		AC 100 ~ 240 V - 50/60 Hz or DC127 V ~ 417 V		
150.0 mm	68.0 mm	150.0 mm		140.0 mm
239.8 x 230 x 82 mm		head: 420 x 325 x 122 mm controller: 483 x 88 x 241 mm		
5.7 kg		head: 17 kg cotroller: 6 kg		head: 19 kg controller: 6 kg
BNC		mini XLR		mini XLRw
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

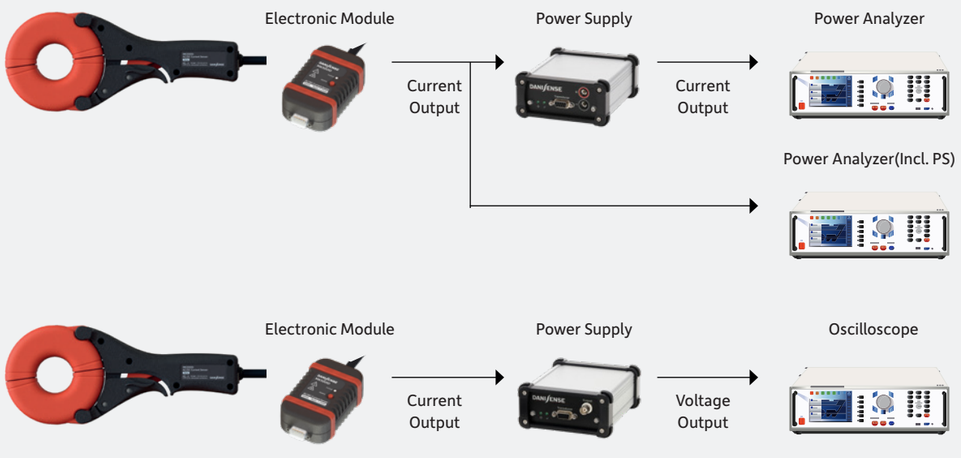
Number of Channels		
Output Type	1	6
Voltage Output	DSSIU-1-V	DSSIU-6-1U-V
Voltage Output Module (VOM)		
VOM0100-10	YES	YES
VOM0300-10	YES	YES
VOM0400-10	YES	YES
VOM0667-10	YES	YES
VOM0800-10	YES	YES
VOM00100-1	YES	YES
VOM0333-1	YES	YES
VOM1333-10	**NO**	YES
VOM0300-1	YES	YES
VOM0400-1	YES	YES
VOM0667-1	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)		
Current		200	500	1000
	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	ƐL	20 ppm		40 ppm
Initial Electric offset	IOE (ƐC)			
DC Total Accuracy	accƐ			
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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