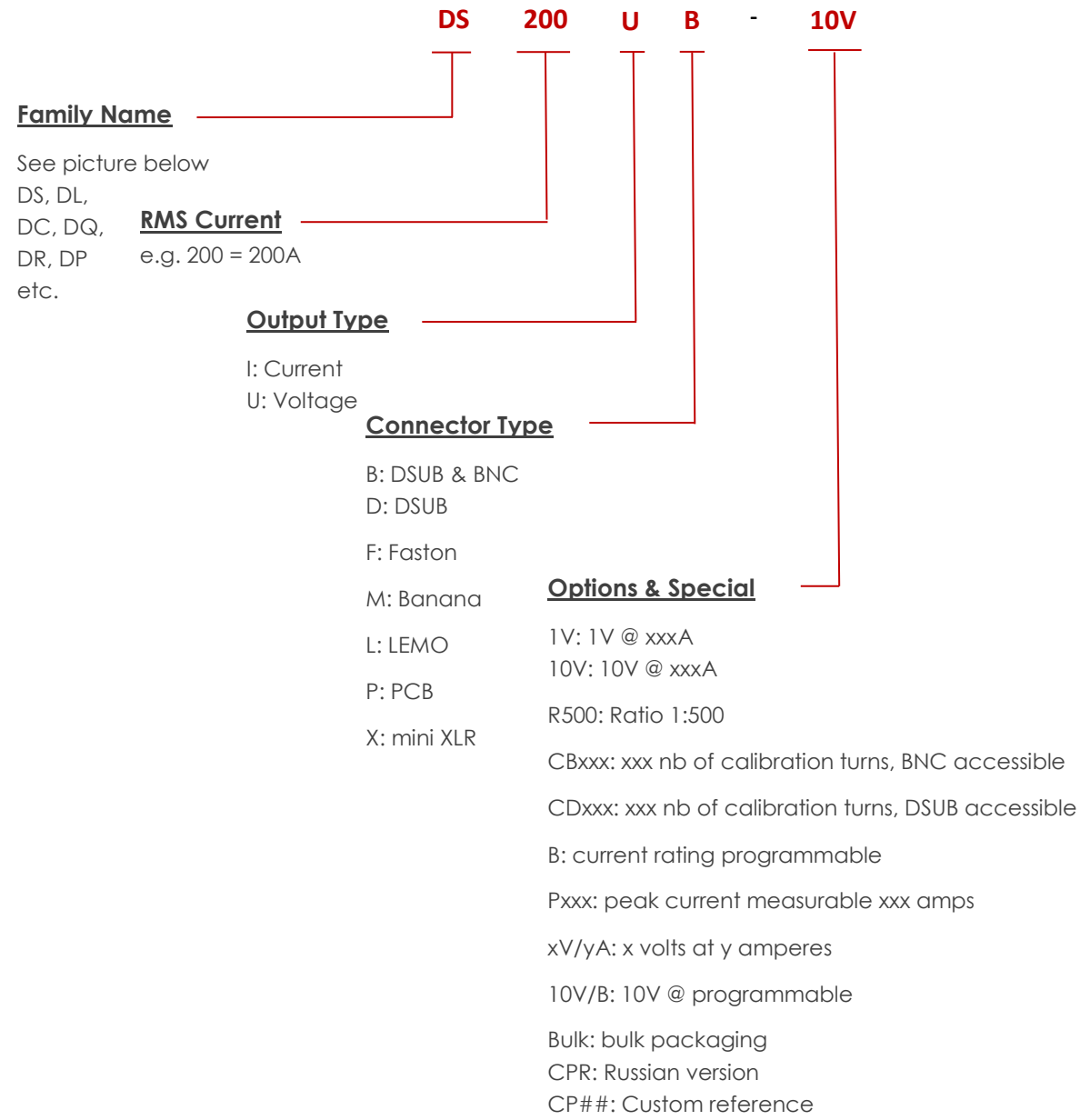


■ PRODUCTS NAMING RULES



■ PRODUCTS MECHANICAL OUTLINES



**VASTi** VASTi Technologies  
宏浩創新科技有限公司  
Phone (+886)2-29588760  
Email info@vastitec.com  
www.vastitec.com

**DANISENSE**

PRODUCTS SELECTION GUIDE



FEATURES

- Fluxgate principle
- Excellent linearity: 1 to 3ppm
- Ultra-stability: offset vs. time <1ppm/year
- Large bandwidth and low phase shift

APPLICATIONS

- Medical devices
- Particles Accelerators
- EV and New Energies
- Batteries etc.

**Danisense A/S**  
Malervej 10 DK-2630  
Taastrup DENMARK  
Tel. +45 3510 2373  
e-mail: info@danisense.com

**DANISENSE**

**Danisense Japan Co., Ltd. / APAC Headquarters**  
2, Yamashitacho, Naka-ku, Yokohama, 231-0023 JAPAN  
Industry and Trade Center Building, 2F Tel. +81 45 232 4111



ISO 9001:2015

Precision - Innovation

www.danisense.com

2018.11.v1-e/ef

## ACCURATELY MEASURE DC / AC CURRENTS BETWEEN mA AND FULL SCALE;

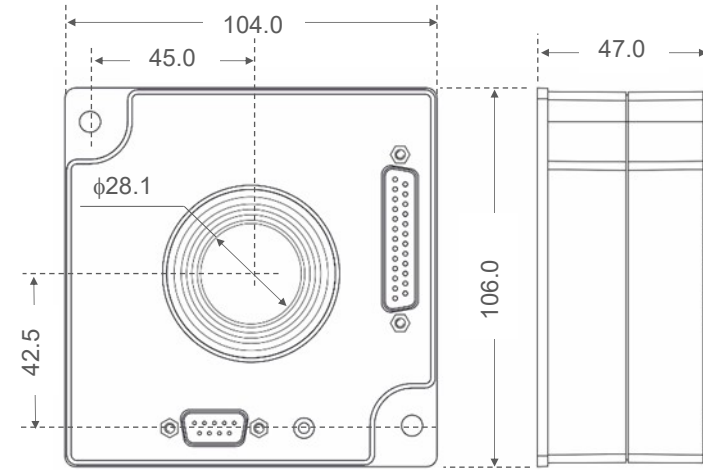
### PRODUCTS LINEUP / CURRENT OUTPUT

		DC200IF	DS50ID	DS200ID DQ200ID	DS300ID
Measuring range	$I_{PM}$	300A	150A	370A	500A
Nominal AC current	$I_{PN\_AC}$	200Arms	50Arms	200Arms	300Arms
Nominal DC current	$I_{PN\_DC}$	300A	75A	300A	450A
Overload capacity (non measured, 100ms)	$\hat{I}_{OL/0.1s}$	1500A	1500A	1500A	1500A
Nominal DC secondary current	$I_{SN\_DC}$	300mA	150mA	600mA	450mA
Primary / secondary ratio	(n1:n2)	1:1000	1:500	1:500	1:1000
Linearity error	$\epsilon_L$	1.8 $\mu$ A 6ppm	1.2 $\mu$ A 8ppm	1.2 $\mu$ A 2ppm	0.675 $\mu$ A 1.5ppm
Electric offset	$I_{OE}$	1.5 $\mu$ A 5ppm	12 $\mu$ A 80ppm	12 $\mu$ A 20ppm	6.3 $\mu$ A 14ppm
DC to 10Hz Overall accuracy @23°C $acc\epsilon = (\epsilon_L + I_{OE})$	acc $\epsilon$	3.3 $\mu$ A 11ppm	13.2 $\mu$ A 88ppm	13.2 $\mu$ A 22ppm	6.975 $\mu$ A 15.5ppm
Offset temperature coefficient	$TCl_{OE}$	0.9 $\mu$ A/°C 3ppm/°C	0.06 $\mu$ A/°C 0.4ppm/°C	0.06 $\mu$ A/°C 0.1ppm/°C	0.045 $\mu$ A/°C 0.1ppm/°C
Offset stability with time	$I_{OE/time}$	3 $\mu$ A/month 10ppm/month	0.12 $\mu$ A/month 0.8ppm/month	0.12 $\mu$ A/month 0.2ppm/month	0.09 $\mu$ A/month 0.2ppm/month
Bandwidth (-3dB)	$f_{(-3dB)}$	>300kHz	>1MHz	>1MHz	>1MHz
Amplitude error (small signal)	$\epsilon_G$	10Hz - 5kHz 0.10% 5kHz - 100kHz 3.0% 100kHz-300kHz 10.0%	10Hz - 5kHz 0.01% 5kHz - 100kHz 1.0% 100kHz- 1MHz 20.0%	10Hz - 5kHz 0.01% 5kHz - 100kHz 1.0% 100kHz- 1MHz 20.0%	10Hz - 2kHz 0.08% 2kHz - 10kHz 0.12% 10kHz - 100kHz 2.10%
Phase shift (small signal)	$\theta$	10Hz - 5kHz 0.06° 5kHz - 100kHz 0.4° 100kHz - 300kHz 2.0°	10Hz - 5kHz 0.1° 5kHz - 100kHz 0.5° 100kHz - 1MHz 5.0°	10Hz - 5kHz 0.1° 5kHz - 100kHz 0.5° 100kHz - 1MHz 5.0°	10Hz - 2kHz 0.02° 2kHz - 10kHz 0.03° 10kHz - 100kHz 1.40°
Noises 0 - 100Hz 0 - 1kHz 0 - 10kHz 0 - 100kHz	Noises (rms)	0.10ppm 0.20ppm 3.00ppm 8.00ppm	0.08ppm 0.16ppm 1.60ppm 6.00ppm	0.02ppm 0.04ppm 0.40ppm 1.50ppm	0.02ppm 0.04ppm 0.60ppm 2.50ppm
Induced rms voltage on prim. conductor		5 $\mu$ Vrms	5 $\mu$ Vrms	5 $\mu$ Vrms	5 $\mu$ Vrms
Rated rms insulation voltage (**) - IEC61010-1 - EN50178	$U_b$ $U_b$	300V 600V	300V 600V	300V 600V	300V 600V
rms insulation test voltage (Pri.-Sec.) AC50-60Hz, 1min	$U_{dP-S}$	5.7kV	5.7kV	5.7kV	5.7kV
rms insulation test voltage (Sec.-Shield) AC50-60Hz, 1min	$U_{dS-S}$	0.2kV	0.2kV	0.2kV	0.2kV
Impulse withstand voltage (1.2/50 $\mu$ s)	$\hat{U}_W$	10.4kV	10.4kV	10.4kV	10.4kV
Operating temp. range	$T_a$	-40°C to +70°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Power supplies	$U_c$	$\pm 15V \pm 5\%$	$\pm 15V \pm 5\%$	$\pm 15V \pm 5\%$	$\pm 15V \pm 5\%$
Diameter of aperture	$\phi$	20.0mm	27.6mm	27.6mm	27.6mm
External dimensions	WxHxD	92.4 x 61.5 x 40mm	DS (apprx. 122 x 108 x 45mm) DQ (apprx. 104 x 106 x 47mm)		
Connection		6.3x0.8mm fastons	DSUB 9-pin	DSUB 9-pin	DSUB 9-pin
Calibration (Test) winding		6.3x0.9mm fastons	Optional	Optional	Optional
Weight	M	apprx. 200g	approximate 0.6kg		

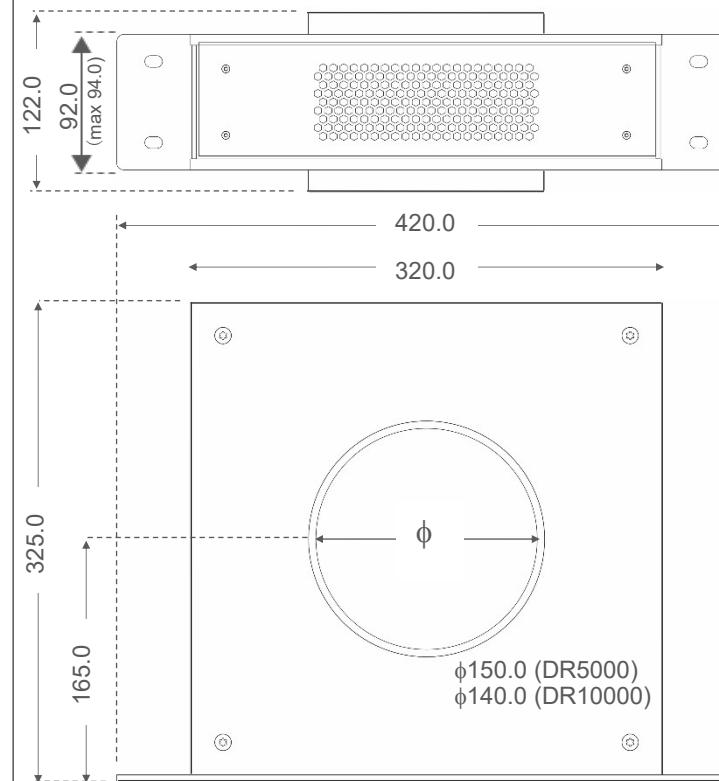
(\*) rating configurable from 40A to 640A per step of 20A; data shown for 640A rating (ratio 1:640)

(\*\*) reinforced insulation, OV Cat III, pollution degree 2

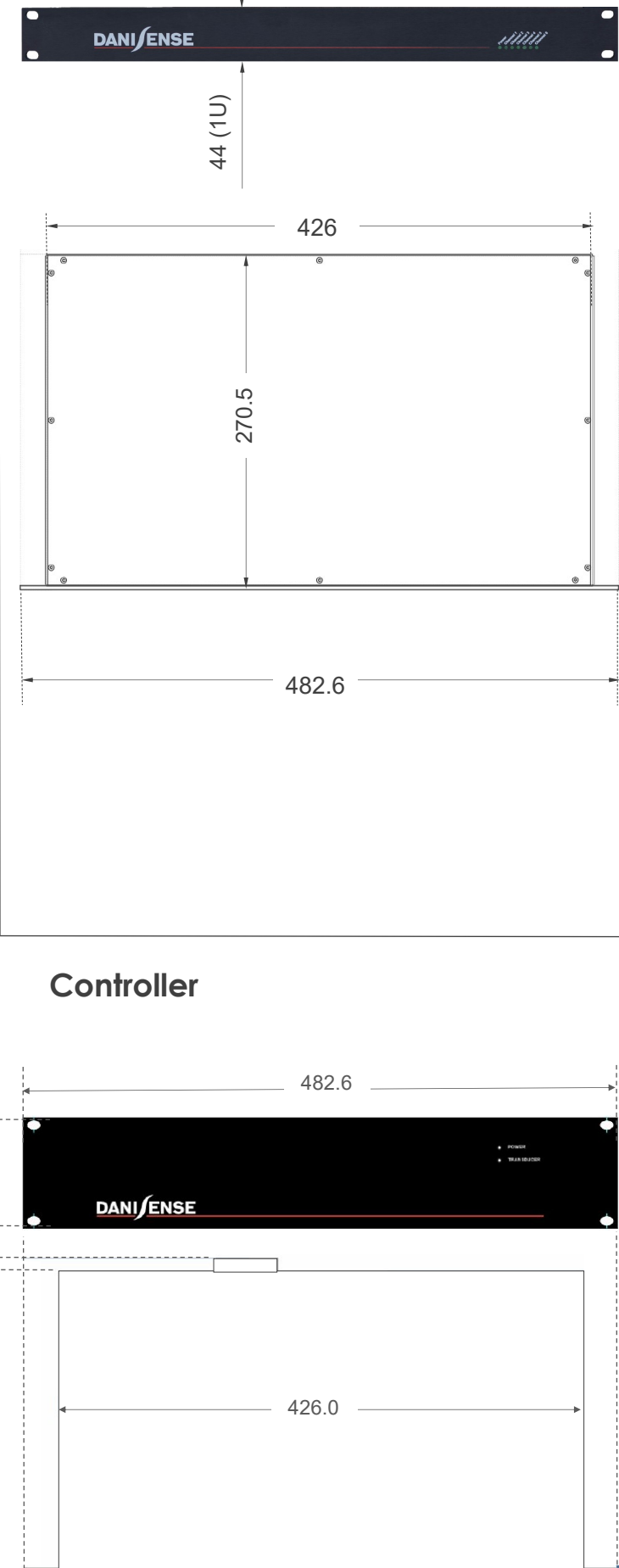
### ▲ DQ640ID-B Programmable (\*\*)



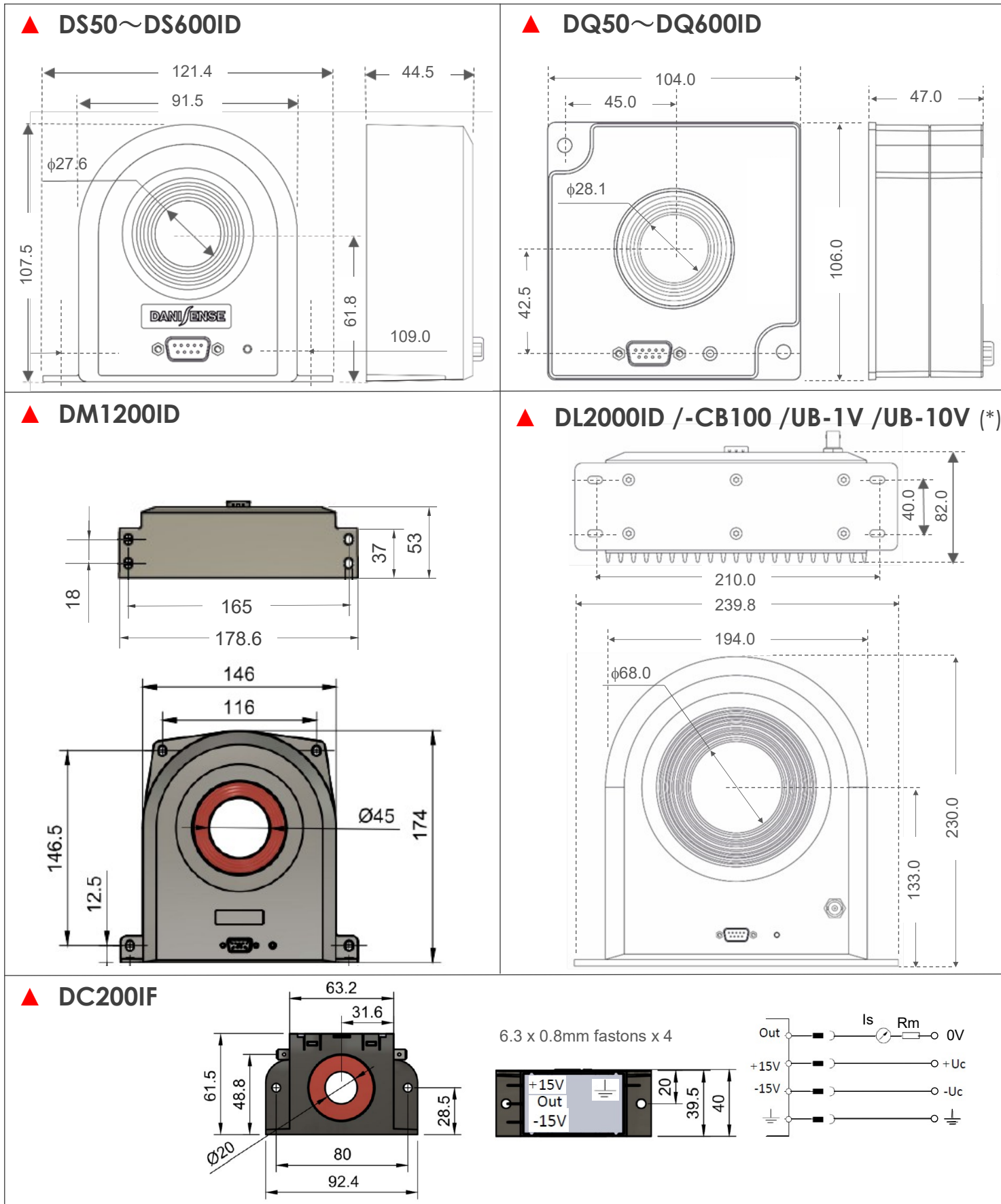
### ▲ DR5000~DR10000IM / UX-10V Head



### ▲ DSSIU-4-1U / DSSIU-6-1U



**DIMENSIONAL DRAWINGS**



**DESIGNED FOR MEDICAL DEVICES; PARTICLE ACCELERATORS; POWER MEASUREMENTS**

PLEASE CONSULT THE PRODUCTS MANUAL ON DANISENSE WEBSITE BEFORE USAGE

DS400ID	DQ500ID	DS600ID DQ600ID	DQ640ID-B configurable (*)	DM1200ID	DL2000ID	DR5000IM	DR10000IM
600A	800A	1000A	640A	1800A	3000A	8000A	11000A
400Arms	500Arms	600Arms	28A to 452Arms (step 14Arms)	1200Arms	2000Arms	5000Arms	7000Arms
600A	750A	900A	40A to 640A (step 20A)	1500A	3000A	8000A	10000A
3000A	4500A	4500A	4500A	5000A	10000A	20000A	20000A
300mA	428.57mA	600mA	1000mA	1000mA	2000mA	3200mA	4000mA
1:2000	1:1750	1:1500	1:40 to 1:640 step 20	1:1500	1:1500	1:2500	1:2500
0.45 $\mu$ A 1.5ppm	0.429 $\mu$ A 1ppm	0.6 $\mu$ A 1ppm	3 $\mu$ A 3ppm	1 $\mu$ A 1ppm	2 $\mu$ A 1ppm	3.2 $\mu$ A 1ppm	4 $\mu$ A 1ppm
5 $\mu$ A 16.67ppm	4.286 $\mu$ A 10ppm	5 $\mu$ A 8.33ppm	10 $\mu$ A 10ppm	12 $\mu$ A 12ppm	12 $\mu$ A 6ppm	9.6 $\mu$ A 3ppm	20 $\mu$ A 5ppm
5.45 $\mu$ A 18.17ppm	4.715 $\mu$ A 11ppm	5.6 $\mu$ A 9.33ppm	13 $\mu$ A 13ppm	13 $\mu$ A 13ppm	14 $\mu$ A 7ppm	12.8 $\mu$ A 4ppm	24 $\mu$ A 6ppm
0.03 $\mu$ A/ $^{\circ}$ C 0.1ppm/ $^{\circ}$ C	0.04 $\mu$ A/ $^{\circ}$ C 0.1ppm/ $^{\circ}$ C	0.06 $\mu$ A/ $^{\circ}$ C 0.1ppm/ $^{\circ}$ C	0.1 $\mu$ A/ $^{\circ}$ C 0.1ppm/ $^{\circ}$ C	0.1 $\mu$ A/ $^{\circ}$ C 0.1ppm/ $^{\circ}$ C	0.2 $\mu$ A/ $^{\circ}$ C 0.1ppm/ $^{\circ}$ C	0.32 $\mu$ A/ $^{\circ}$ C 0.1ppm/ $^{\circ}$ C	0.4 $\mu$ A/ $^{\circ}$ C 0.1ppm/ $^{\circ}$ C
0.04 $\mu$ A/month 0.13ppm/month	0.04 $\mu$ A/month 0.1ppm/month	0.06 $\mu$ A/month 0.1ppm/month	0.1 $\mu$ A/month 0.1ppm/month	0.1 $\mu$ A/month 0.1ppm/month	0.2 $\mu$ A/month 0.1ppm/month	0.32 $\mu$ A/month 0.1ppm/month	0.4 $\mu$ A/month 0.1ppm/month
>300kHz	>300kHz	>500kHz	>300kHz	>300kHz	>300kHz	>100kHz	>100kHz
10Hz - 2kHz 0.01% 2kHz - 10kHz 0.20% 10kHz-100kHz 3.00%	10Hz - 2kHz 0.07% 2kHz - 10kHz 0.30% 10kHz-100kHz 4.00%	10Hz - 2kHz 0.01% 2kHz - 10kHz 0.20% 10kHz-100kHz 2.50%	10Hz - 2kHz 0.01% 2kHz - 10kHz 0.20% 10kHz-100kHz 2.50%	10Hz - 2kHz 0.01% 2kHz - 10kHz 1.50% 10kHz-100kHz 3.00%	10Hz - 2kHz 0.01% 2kHz - 10kHz 1.50% 10kHz-100kHz 3.00%	10Hz - 1kHz 0.05% 1kHz - 5kHz 1.50% 5kHz - 30kHz 15.00%	10Hz - 1kHz 0.05% 1kHz - 5kHz 1.50% 5kHz - 30kHz 15.00%
10Hz - 2kHz 0.04 $^{\circ}$ 2kHz - 10kHz 0.04 $^{\circ}$ 10kHz-100kHz 1.50 $^{\circ}$	10Hz - 2kHz 0.03 $^{\circ}$ 2kHz - 10kHz 0.04 $^{\circ}$ 10kHz-100kHz 3.00 $^{\circ}$	10Hz - 2kHz 0.03 $^{\circ}$ 2kHz - 10kHz 0.04 $^{\circ}$ 10kHz-100kHz 1.00 $^{\circ}$	10Hz - 2kHz 0.03 $^{\circ}$ 2kHz - 10kHz 0.04 $^{\circ}$ 10kHz - 100kHz 1.00 $^{\circ}$	10Hz - 2kHz 0.04 $^{\circ}$ 2kHz - 10kHz 0.50 $^{\circ}$ 10kHz - 100kHz 3.00 $^{\circ}$	10Hz - 2kHz 0.04 $^{\circ}$ 2kHz - 10kHz 0.50 $^{\circ}$ 10kHz - 100kHz 3.00 $^{\circ}$	10Hz - 1kHz 0.05 $^{\circ}$ 1kHz - 5kHz 0.50 $^{\circ}$ 5kHz - 30kHz 3.00 $^{\circ}$	10Hz - 1kHz 0.05 $^{\circ}$ 1kHz - 5kHz 0.50 $^{\circ}$ 5kHz - 30kHz 3.00 $^{\circ}$
0.02ppm 0.10ppm 1.00ppm 3.50ppm	0.02ppm 0.06ppm 0.80ppm 2.50ppm	0.01ppm 0.02ppm 0.20ppm 0.70ppm	0.01ppm 0.10ppm 1.00ppm 3.00ppm	0.02ppm 0.10ppm 1.20ppm 3.50ppm	0.02ppm 0.10ppm 1.20ppm 3.50ppm	0.10ppm 0.70ppm 5.00ppm 7.00ppm	0.05ppm 0.40ppm 3.00ppm 4.00ppm
5 $\mu$ Vrms	5 $\mu$ Vrms	5 $\mu$ Vrms	5 $\mu$ Vrms	5 $\mu$ Vrms	5 $\mu$ Vrms	10 $\mu$ Vrms	10 $\mu$ Vrms
300V 600V	300V 600V	300V 600V	300V 600V	1000V 1000V	1500V 1500V	3000V 3000V	3000V 3000V
5.7kV	5.7kV	5.7kV	5.7kV	14.4kV	14.4kV	23.7kV	23.7kV
0.2kV	0.2kV	0.2kV	0.2kV	0.2kV	0.2kV	0.2kV	0.2kV
10.4kV	10.4kV	10.4kV	10.4kV	26.3kV	26.3kV	43.5kV	43.5kV
-40 $^{\circ}$ C to +85 $^{\circ}$ C	-40 $^{\circ}$ C to +85 $^{\circ}$ C	-40 $^{\circ}$ C to +85 $^{\circ}$ C	0 $^{\circ}$ C to +55 $^{\circ}$ C	-40 $^{\circ}$ C to +65 $^{\circ}$ C	-40 $^{\circ}$ C to +65 $^{\circ}$ C	head : 0 to +70 $^{\circ}$ C controller : 0 to +45 $^{\circ}$ C	head : 0 to +70 $^{\circ}$ C controller : 0 to +45 $^{\circ}$ C
$\pm 15V \pm 5\%$	$\pm 15V \pm 5\%$	$\pm 15V \pm 5\%$	$\pm 15V \pm 5\%$	$\pm 15V \pm 5\%$	$\pm 15V \pm 5\%$	AC 90 ~ 295V - 50/60Hz or DC 127V ~ 417V	AC 90 ~ 295V - 50/60Hz or DC 127V ~ 417V
27.6mm	27.6mm	27.6mm	28.1mm	45.0mm	68.0mm	150.0mm	140.0mm
DS (apprx. 122 x 108 x 45mm) DQ (apprx. 104 x 106 x 47mm)			apprx. 104 x 106 x 47mm	apprx. 179 x 174 x 53mm	apprx. 240 x 230 x 82mm	head apprx. 420 x 325 x 122mm controller 483 x 88 x 241mm	
DSUB 9-pin	DSUB 9-pin	DSUB 9-pin	DSUB 9-pin	DSUB 9-pin	DSUB 9-pin	Banana plugs	Banana plugs
Optional	Optional	Optional	100 turns/0.2A	Optional	Optional	Optional	Optional
approximate 0.6kg			apprx. 0.7kg	apprx. 1.5kg	apprx. 6.5kg	head: 17kg/19kg; controller: 6kg	

(unit : mm – general tolerance:  $\pm 0.3$ mm unless otherwise stated)

(\*) BNC connector: voltage output in UB models; or calibration coil terminals in -CB models

(\*\*) DSUB-21 pin: for configuration of rating current in DQ640ID-B model

# ACCURATELY MEASURE DC / AC CURRENTS BETWEEN mA AND FULL SCALE;

## DEFINITION OF PARAMETERS

Parameter	Symbol	Unit	Definition
Nominal primary AC current	IPN AC	Arms	Rated AC current for continuous operation
Nominal primary DC current	IPN DC	A	Rated DC current for continuous operation
Measuring range	$\hat{I}_{PM}$	A	Max DC current (or peak value) that can be accurately measured
Overload capacity	$\hat{I}_{OL}$	A	Max primary current without damage. Device will be saturated during the overload period.
Nominal secondary current	ISN	mA	Value of the device's output signal when a current of nominal value flows in a conductor placed inside the device's center hole
Primary / secondary ratio	n1:n2	none	e.g. 1:1500 means if primary current is 600A, then secondary current (device's output signal) is 600A / 1500 = 0.4A or 400mA
Measuring resistance	RM	$\Omega$	The device's output current must be "closed" to enable the flux compensation. <div style="text-align: center;"> </div>
Linearity error	$\epsilon_L$	ppm $\mu A$	Maximum deviation or error (in ppm or in absolute $\mu A$ value) between the output signal of the current transducer at any given point between 0 and $\pm \hat{I}_{PM}$ and the linear regression line obtained from a series of actual output values from $-\hat{I}_{PM}$ to $+\hat{I}_{PM}$ measured at regular current value intervals between these two extremes. <div style="text-align: center;"> </div>
Offset current (including earth field)	IOE	ppm $\mu A$	Value of the device's output signal when there is no primary current in the device's center hole. <div style="text-align: center;"> </div>

# DESIGNED FOR MEDICAL DEVICES; PARTICLE ACCELERATORS; POWER MEASUREMENTS

## PRODUCTS LINEUP / 4 (6)-CHANNEL POWER SUPPLIES INTERFACE UNITS, ACCESSORIES

### Power up to 4 (or 6) transducers from 50 to 2000 models



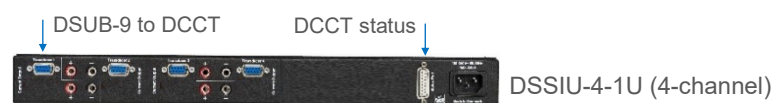
Features DSSIU-4-1U, DSSIU-6-1U

- 19" rack-mount, 1U height
- Output voltage:  $\pm 15V$  (per channel)
- Input voltage: AC 100V to 240V, 47Hz to 63Hz
- D-SUB 9 pins for transducer connection
- 2 x 4mm-banana jacks for current outputs

Features DSSIU-6

- 2 x 4mm-banana jacks for test coil (cal. current)
- Option: 1V or 10V voltage output modules VOM
- Mini Amphenol XLR connector for voltage outputs

### Back panel lay-out



Current output access via Red/Black banana plugs

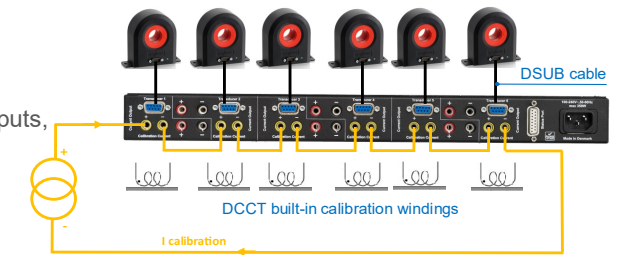


Test coils access via two yellow banana

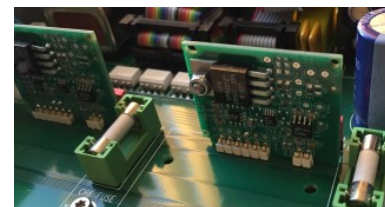
Current / voltage output access via mini XLR



DSSIU-6-1U (6-channel, V outputs or mixed V and I outputs, calibration coils terminals)



### Factory mounted voltage output modules (VOM) 1V and 10V, for use with DSSIU-6-1U model



- VOM 400mA/1V
- VOM 400mA/10V
- VOM 1.333A/1V
- VOM 1.333A/10V

### Examples of VOM combinations

- DS200ID  $\Rightarrow$  output ratio: 400mA @200A
- DS200ID + VOM 400mA/1V  $\Rightarrow$  output ratio: 1V@200A
- DL2000ID  $\Rightarrow$  output ratio: 1.333A @2000A
- DL2000ID + VOM 1.333A/10V  $\Rightarrow$  output ratio: 10V@2000A

### Cables accessories



DSUB (2/5/10/15/20m) cable for easy connection between DSSIU-4-1U or DSSIU-6-1U power supplies and current transducers



XLRm/Banana Voltage Cable (2m) for access to voltage output at the back panel of DSSIU-6-1U (with full shielding)



XLRm/Banana Current Cable (2m) for access to current output at the back panel of DSSIU-6-1U

### DSUB connector pin assignment

