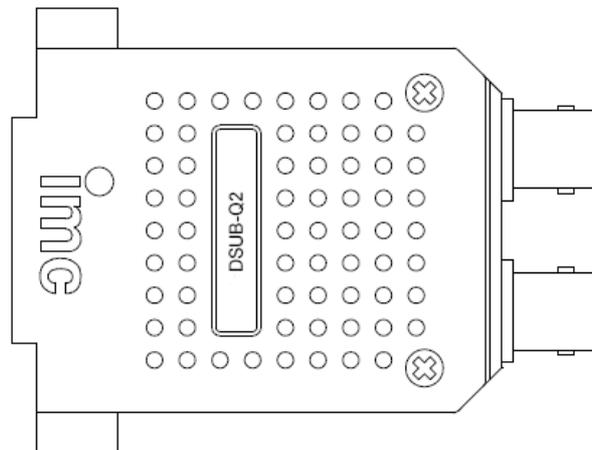


## Charge Amplifier DSUB-Q2

### 2-channel charge amplifier



ACC/DSUB-Q2 (adapter from BNC to DSUB-15)

#### Data Sheet Version 3.3

The charge amplifier DSUB-Q2 can be used with amplifier of the imc device-groups that are especially designed to measure voltage and bridges and equipped with DSUB plugs (female) and for two channels per plug.

The charge amplifier DSUB-Q2 serves to adapt a piezoelectric sensor's charge output signal to voltage measurement inputs of the imc measurement system. It is installed inside a imc DSUB-15 connector which must attach to a separate amplifier for capturing the processed signal.

The DSUB-Q2 contains two miniature charge amplifiers which carry out a transformation of electrical charge to voltage. It is suitable for quasi-static (in DC-coupling-mode) as well as dynamic measurements. It can be used to record measurement readings of forces, pressures and accelerations.

A maximum of two DSUB-Q2 plugs are allowed to be connected with one "carrier amplifier" (max 2 of 4 DSUB plugs).

#### Order code:

|                | article number | Remarks                                     |
|----------------|----------------|---|
| ACC/DSUB-Q2    | 1350160        | standard housing of the connector (DSUB-15) |
| ACC/DSUB-Q2-ET | 1351xxx        | extended temperature range                  |

#### Terminal connections

- Sensors connected via 2x BNC
- DSUB-15 for connection measurement amplifier

#### Power supply

- Provided by imc measurement system

#### Required software version

- Supported by imc STUDIO 4.0R1 and imc DEVICES 2.8R3, or later

## ACC/DSUB-Q2

Data Sheet Version 3.3

| Parameter  | typ.  | min. / max.   | Remarks  |
|--|---|---|--|
| Usable with module type                            | bridge amplifier<br>CRC, CRSL, CRPL:<br>DCB-8, DCB2-8, UNI-8, UNI2-8          |   | module types with 2 channels<br>per DSUB-15<br>as of imc STUDIO 4.0R1 / imc DEVICES 2.8R3  |
|  | corresponding devices imc C-SERIES:<br>Cx-50xx, Cx-70xx                       |   | as of imc STUDIO 4.0R1 / imc DEVICES 2.8R3   |
|  | voltage amplifier<br>CRC, CRSL, CRPL:<br>LV3-8                                |   | module types with 4 channels<br>per DSUB-15<br>as of imc STUDIO 4.0R1 / imc DEVICES 2.8R3  |
|  | corresponding devices imc C-SERIES:<br>CS-1208-1/-N, CL-1224-1/-N             |   | as of imc STUDIO 4.0R1 / imc DEVICES 2.8R3   |
| Inputs   |   | 2   | differential, non isolated, BNC  |
| Ranges   |   | $\pm 100000$ pC, $\pm 50000$ pC,<br>$\pm 25000$ pC, ... $\pm 1000$ pC |  |
| Input coupling                                     |   | - charge AC<br>- charge DC  | quasi-static measurements  |
| Max. input voltage                                 |   | $\pm 20$ V  | related to chassis   |
| Max. charge  |   | $\pm 200000$ pC   |  |
| Max. common mode voltage                           |   | $\pm 1$ V   | voltage between sensor ground and chassis  |
| Bandwidth  |   |   | -3 dB  |
| - lower cut-off-frequency<br>(AC-coupling only)    | 0.4 Hz  |   |  |
| - upper cut-off-frequency<br>(AC- and DC-coupling) | 30 kHz<br>50 kHz  |   | range $> \pm 10000$ pC<br>range $\leq \pm 10000$ pC  |
| Gain uncertainty                                   | 0.2 %   | $\leq 1.0$ %  | of reading   |
| drift  | $15$ ppm/K $\cdot\Delta T_a$  | $30$ ppm/K $\cdot\Delta T_a$  | $\Delta T_a =  T_a - 25^\circ\text{C} $<br>ambient temperature $T_a$   |
| Offset<br>DC-coupling                              | $\pm 6$ pC<br>$\pm 1.6$ pC  | $\leq \pm 30$ pC<br>$\leq \pm 3$ pC                                   | residual charge after reset<br>range $> \pm 10000$ pC<br>range $\leq \pm 10000$ pC   |
| drift  | 0.006 pC/s<br>0.003 pC/s  | $\leq \pm 0.05$ pC/s<br>$\leq \pm 0.02$ pC/s                          | mode: DC-Coupling<br>ambient temperature<br>$T_a = 25^\circ\text{C} \pm 20$ K<br>range $> \pm 10000$ pC<br>range $\leq \pm 10000$ pC |
| Reset time   | 300 ms  |   |  |
| Noise  | 0.043 pC <sub>rms</sub><br>0.026 pC <sub>rms</sub><br>0.004 pC <sub>rms</sub> |   | bandwidth (range = 1000 pC)<br>0.1 Hz to 10 kHz<br>0.1 Hz to 1 kHz<br>0.1 Hz to 100 Hz   |
| Power consumption                                  |   | $\leq 1$ W  | supplied by measurement system   |
| Operating temperature                              |   | 5°C to 60°C   | without condensation   |