

| MS401 - Description                                                                                                                  |                                                         |                                   |
|--------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|-----------------------------------|
| A plug-in unit which contains four galvanic isolated transient measurement channels and their corresponding sensing current sources. |                                                         |                                   |
| Module                                                                                                                               |                                                         |                                   |
| Number of transient measurement channels                                                                                             | 4                                                       |                                   |
| Number of sensing current sources                                                                                                    | 4                                                       |                                   |
| Form factor                                                                                                                          | Single slot PIU (Plug-in-Unit)                          |                                   |
| Max. power consumption                                                                                                               | 25 W                                                    |                                   |
| $I_{sense}$                                                                                                                          |                                                         |                                   |
| Galvanic isolated                                                                                                                    | Yes                                                     |                                   |
| Nominal current range                                                                                                                | $\pm 100\text{mA}$                                      | $\pm 100\text{-}200\text{mA}$     |
| Nominal current resolution                                                                                                           | $6.2\mu\text{A}$                                        |                                   |
| Current accuracy                                                                                                                     | $0.01\% I_{set} + 200\mu\text{A}$                       | $0.01\% I_{set} + 500\mu\text{A}$ |
| Output resistance                                                                                                                    | $1\text{M}\Omega \text{ min.}$                          |                                   |
| Output current derating (power limited)                                                                                              | $40\text{V} >  V_{out}  \geq 20\text{V}$                | $\pm 50\text{mA}$                 |
|                                                                                                                                      | $20\text{V} >  V_{out}  \geq 10\text{V}$                | $\pm 100\text{mA}$                |
|                                                                                                                                      | $10\text{V} >  V_{out} $                                | $\pm 200\text{mA}$                |
| $V_{meas}$                                                                                                                           |                                                         |                                   |
| Conversion time                                                                                                                      | $1\mu\text{s}$ (1Msample/s/CH)                          |                                   |
| Input differential impedance                                                                                                         | $100\text{k}\Omega$                                     |                                   |
| Galvanic isolated                                                                                                                    | Yes                                                     |                                   |
| Input common mode impedance                                                                                                          | $1\text{G}\Omega + 2.5\text{nF}$                        |                                   |
| Offset DAC resolution                                                                                                                | $300\mu\text{V}$                                        |                                   |
| Analog bandwidth                                                                                                                     | $233\text{kHz}$ (Digitally limited to $133\text{kHz}$ ) |                                   |

| Nominal full-scale voltage range [V] | 1        | 2        | 4        | 4        | 8        | 8        | 8        | 10       | 16       | 16       | 20       | 20       |
|--------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| $V_{in}$ [V] min-max                 | $\pm 10$ | $\pm 10$ | $\pm 10$ | $\pm 20$ | $\pm 20$ | $\pm 40$ | $\pm 80$ | $\pm 10$ | $\pm 40$ | $\pm 80$ | $\pm 10$ | $\pm 20$ |
| Nominal resolution [ $\mu\text{V}$ ] | 4        | 8        | 16       | 16       | 32       | 32       | 32       | 40       | 64       | 64       | 80       | 80       |
| Gain error                           | 0.01%    |          |          |          |          |          |          |          |          |          |          |          |
| Offset error (mV)                    | 0.5      | 0.5      | 0.5      | 5        | 5        | 8        | 12       | 2        | 8        | 12       | 0.5      | 8        |