

Calibrators (measurement ranges and limits of permissible measurement error)

| Parameter                                                                                          | Calmar SP-01<br>69182-2017                                                                       | Calibrator KISS-12<br>Teplobribor<br>59882-15                                                                          | UPS-III<br>Druck<br>60810-15                                   | Fluke 715<br>29194-05                                               | Fluke 709H<br>60323-15                                         | AM-7070<br>China Aktakom<br>not listed in N/R                         |
|----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|---------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------------|
| Measured DC Voltage                                                                                | $\pm 15 \text{ V}$<br>$\pm 0.01\%$                                                               | $\pm 75 \text{ mV}$<br>$\pm (0.01\%  x  + 8 \mu\text{V})$<br>$\pm 50 \text{ V}$<br>$\pm (0.02\%  X  + 15 \text{ mV})$  | $60 \text{ V}$<br>$0.02\% \text{ rdg} + 4 \text{ counts}$      | $0 \dots 100 \text{ mV}$<br>$0.02\% \text{ rdg} + 2 \text{ counts}$ | $0 - 30 \text{ V}$<br>$0.01\% \text{ rdg} + 2 \text{ counts}$  | $15 \text{ V}$<br>$\pm (0.02\% \text{ rdg} + 3 \text{ counts})$       |
| Generated DC Voltage                                                                               | $\pm 10.5 \text{ V}$<br>$\pm 1.0 \text{ mV}$                                                     | $\pm 75 \text{ mV}$<br>$\pm (0.01\%  x  + 8 \mu\text{V})$<br>$\pm 50 \text{ V}$<br>$\pm (0.05\%  X  + 25 \mu\text{V})$ | $24 \text{ V}$                                                 |                                                                     |                                                                | $15 \text{ V}$<br>$\pm (0.015\% \text{ rdg} + 3 \text{ counts})$      |
| Measured DC Current                                                                                | $0 \text{ to } \pm 35 \text{ mA}$<br>$\pm 0.01\%$                                                | $\pm 24 \text{ mA}$<br>$\pm (0.005\%  X  + 15 \mu\text{A})$                                                            | $\pm 24 \text{ mA}$<br>$0.01\% \text{ rdg} + 2 \text{ counts}$ | $\pm 24 \text{ mA}$<br>$0.015\%$                                    | $0 - 24 \text{ mA}$<br>$0.01\% \text{ rdg} + 2 \text{ counts}$ | $\pm 24 \text{ mA}$<br>$\pm (0.015\% \text{ rdg} + 3 \text{ counts})$ |
| Generated DC Current                                                                               | $\pm 23.5 \text{ mA}$<br>$\pm 0.0024 \text{ mA}$                                                 | $\pm 24 \text{ mA}$<br>$\pm (0.015\%  X  + 10 \mu\text{A})$                                                            | $\pm 24 \text{ mA}$<br>$0.01\% \text{ rdg} + 2 \text{ counts}$ | $\pm 24 \text{ mA}$<br>$0.015\% \text{ rdg} + 2 \text{ counts}$     | $0 - 24 \text{ mA}$<br>$0.01\% \text{ rdg} + 2 \text{ counts}$ | $\pm 24 \text{ mA}$<br>$\pm (0.015\% \text{ rdg} + 3 \text{ counts})$ |
| Measured Resistance                                                                                | -                                                                                                | $0 \text{ to } 4 \text{ k}\Omega$                                                                                      | conductance                                                    | -                                                                   |                                                                | -                                                                     |
| Generated Resistance                                                                               |                                                                                                  | $0 \text{ to } 4 \text{ k}\Omega$                                                                                      | -                                                              | -                                                                   |                                                                | -                                                                     |
| Pulse repetition rate of generated pulse signal ( $F_{\text{IN}}$ ) (on the $F_{\text{IN}}$ input) | $0 \text{ to } 22500 \text{ Hz}$<br>$\pm (0.1 + 3 \cdot 10^{-5} \cdot F_{\text{IN}}) \text{ Hz}$ | $0 \text{ to } 50\,000 \text{ Hz}$<br>$\pm (0.02\% X + 2 \text{ counts})$                                              |                                                                |                                                                     |                                                                |                                                                       |
| Generated pulse signal                                                                             | $0 \text{ to } 22500 \text{ Hz}$<br>$\pm 3 \cdot 10^{-5} \cdot F \text{ Hz}$                     | $0 \text{ to } 50\,000 \text{ Hz}$<br>$\pm (0.02\% X + 2 \text{ counts})$                                              | -                                                              | -                                                                   |                                                                | -                                                                     |
| HART protocol                                                                                      | no                                                                                               | N/A                                                                                                                    | yes                                                            | yes                                                                 | yes                                                            | no                                                                    |