



Information concerning the METAS AC/DC switching systems

1. *Technical data*

The switching system is divided into two units linked using a dedicated cable. An aluminium enclosure contains the relays and hosts the input and output connectors ("relay unit"; size depending on type) and a standard rack mounting box containing the driving electronics, both the digital and the power supplies, and the computer interface ("control unit"; size: $\approx 24 \text{ cm} \times 14.5 \text{ cm} \times 13 \text{ cm}$). This control unit is the same for all types of switching systems.

1.1 Various relay units available and their capabilities

- **4/2-wire** version: 4-wire up to 350 V, 2-wire up to 1000 V; frequencies up to 1 MHz
- **2-wire** version: up to 1100 V; frequencies up to 1 MHz
- **high frequency** version: frequencies up to 100 MHz and voltages up to 50 V
- **low voltage** version: voltages below 10 V

Remarks:

- On the 4/2-wire version, the sense wiring **must be** disconnected when using the switch above 350 V
- On the low voltage version, both the low and the high of the sources are switched to the output (on other versions, the lows are always connected together)
- Switching time: $\leq 1 \text{ ms}$ (or all but the low voltage version)
- Optional voltmeter output to measure the voltage before applying it (only available on 4/2-wire and 2-wire relay unit types).
- It is not possible to mix 2-wire and 4-wire configurations for the input voltages
- On the high frequency relay unit, an output to an external load during "dc" measurement is provided.

1.2 Control unit

- HP-IB interface.
- No processor used in the logical part (no high frequency clock signal).
- All the possible switching procedures (steps to go from one configuration to another) are predefined in the logic: for instance "Reset" to "dc-2-wire", or "ac-4-wire" to "dc-4-wire", This makes the software implementation very simple.
- Variable delay time between the steps of the procedures.

1.3 Supplied documentation

- A short user's manual.
- The documentation of the electronics (wiring diagrams).
- A sample software (in HP Basic).

2. Availability

The switching systems are available as a whole with the various relay unit types. Additional relay units can be ordered separately. The cable link is considered as part of the control unit.

The production of a small series of switching systems at METAS is possible. Typically, switching systems ordered before the end of February will be delivered by the end of November (of the same year!). Other delivery conditions on request.

3. Pricing

AC/DC switching systems (control unit, relay unit and cable)		
Description	Type	Price in CHF
4 wire with voltage measurement	4w/U	10100.–
4 wire without voltage measurement	4w/noU	9400.–
2 wire (without voltage measurement)	2w	8550.–
High frequency	HF	7250.–
Low voltage	LV	8200.–

Spare relay units		
Description	Type	Price in CHF
4 wire with voltage measurement	R-4w/U	5450.–
4 wire without voltage measurement	R-4w/noU	4700.–
2 wire (without voltage measurement)	R-2w	3900.–
High frequency	R-HF	2600.–
Low voltage	R-LV	3550.–

Spare control unit		
Description	Type	Price in CHF
Control unit with cable	CU	4700.–

The costs for a full test procedure of the switching systems (or relay unit alone) are included in the prices given above. Functional tests but also real AC/DC transfer measurements are performed during this procedure.

Contact

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