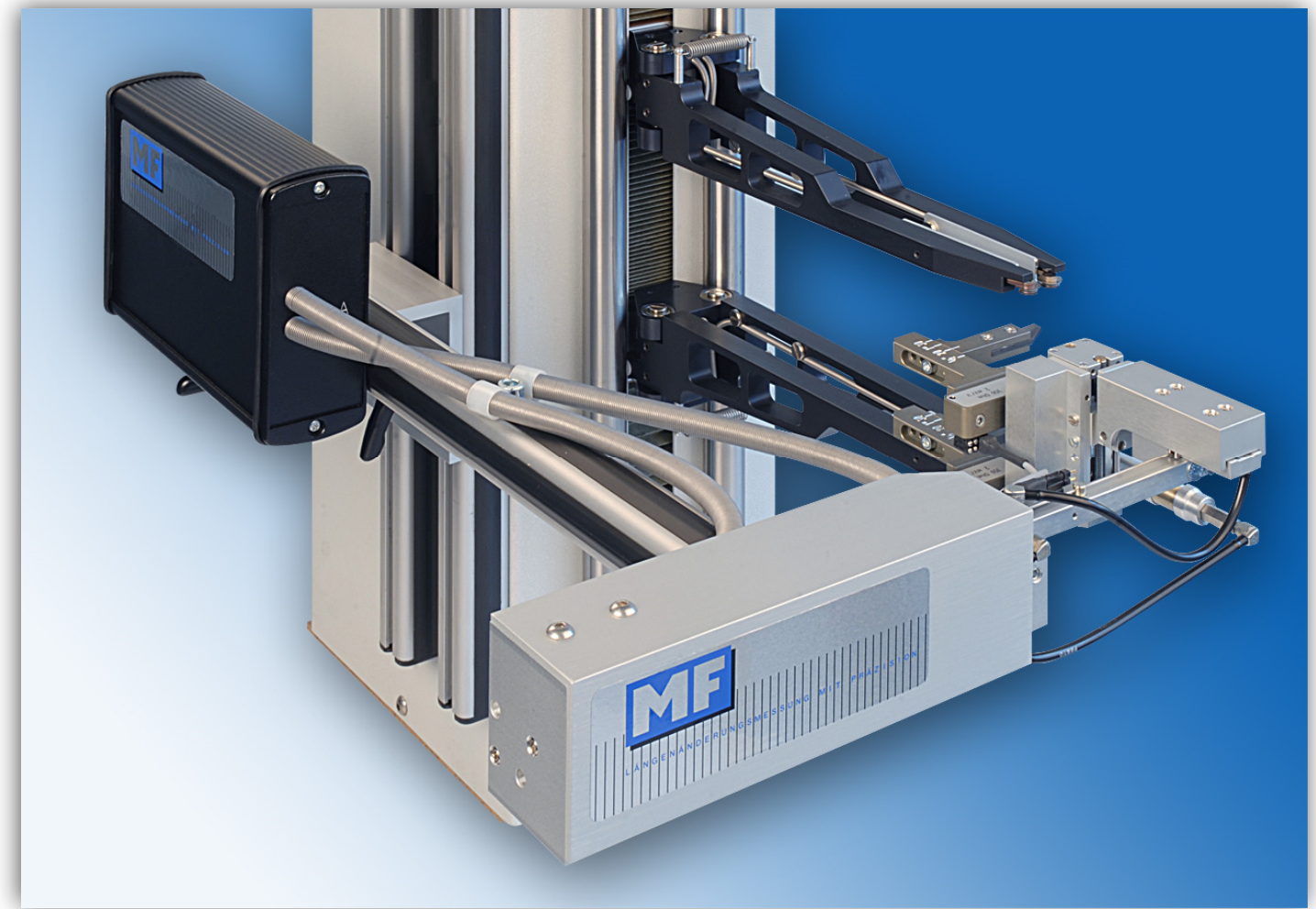


Technical data	MFQ - A
Accuracy class EN ISO 9513	0.2
Measuring principle	two DMS-full bridges, wired parallel
Nominal measuring travel	4 mm
Indication error (rel)*	0.2 %
Indication error*	0.6 µm
Sensitivity	2 mV/V
Maximum voltage input	14 V
Pressure of the measuring pins	6 N
Max. travel of the measuring heads at the sample	20 mm
Operating medium	Compressed air in accordance with ISO 8573-1:2010
Compressed air consumption	ca. 1 l/min
Pneumatic working pressure	5 – 6 bar
Specimen widths	12.5 mm (½"), 20 mm, 25 mm (1"), 30 mm (other dimensions upon request)
Specimen thickness	0.5 – 10 mm
Specimen dimensional tolerance B ₀	± 0.2 mm
Weight	2.0 kg

* The larger value is admissible



MFQ – A

Automated transverse extensometer



M e s s - & F e i n w e r k t e c h n i k G m b H



P r e c i s i o n t e s t i n g o f l i n e a r s t r a i n

Application Range

The transverse extensometer MFQ-A - especially when combined with the extensometers MFL, MFX and MFN - is very well suitable for the determination of the r-value (vertical anisotropy) of fine sheet metal specimens. The MFQ-A is fully integrated into these two instruments, in the basic version, as well as a retrofit to the MFL or MFN. Above this the universal attachment system of the MFQ-A allows to combine it with almost any lateral measuring instrument (foreign maker) or with the testing machine itself.

Design and Function

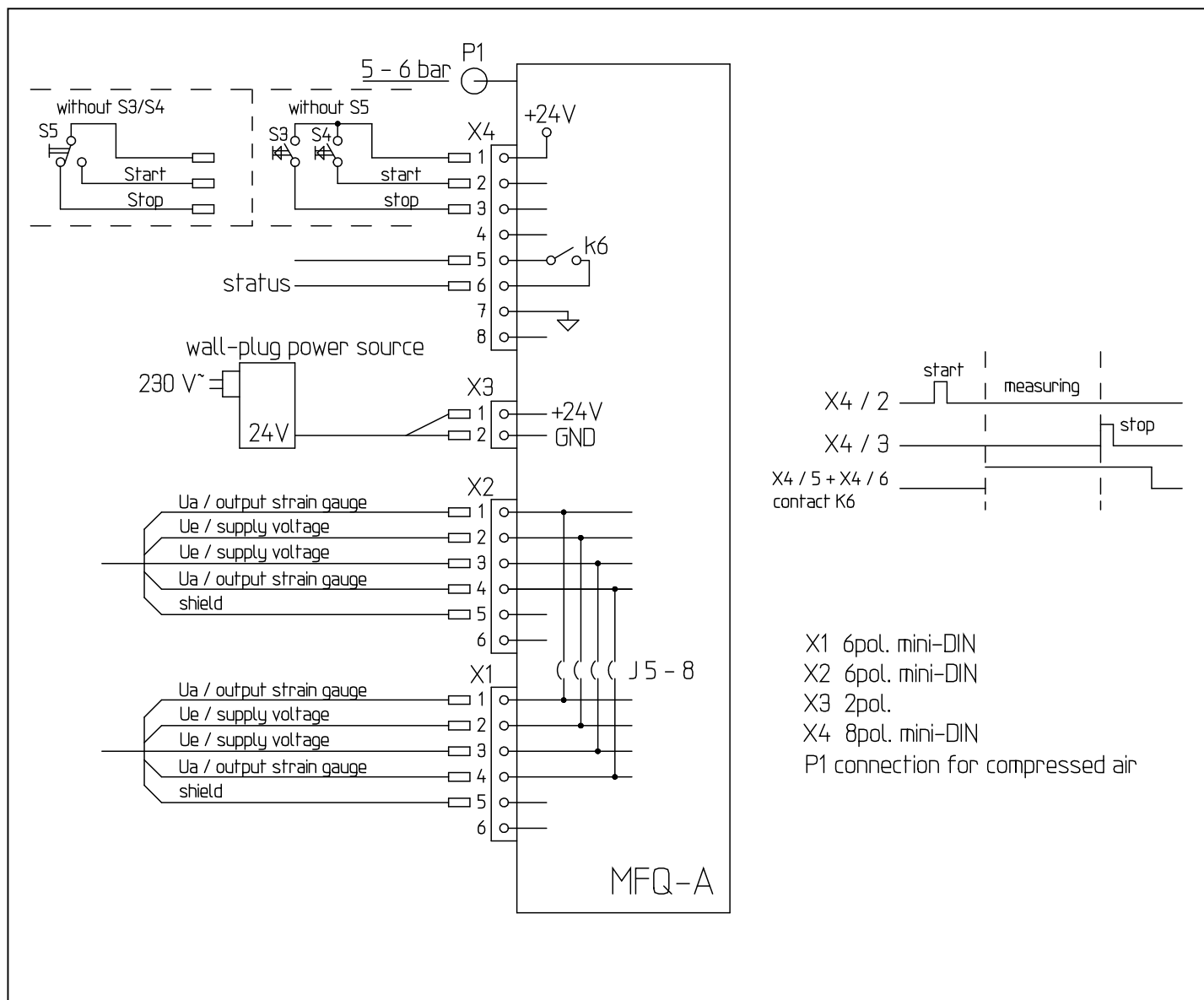
The MFQ-A is equipped with two measuring clamps forming the average value of two separate measuring locations. They are weight-compensated and mounted in smooth-running guides. The distance of the measuring clamps is 30 mm at the start of the measurement. Optionally this distance can be reduced to a minimum of 12.5 mm.

The two measuring arms apply the lateral change to the measuring springs with their integrated full bridge strain gauges. Pneumatic cylinders allow to retract and swing them out of the way. The position of the measuring arms remains constant during the equally applied extension of the specimen. The position of the measuring arms remains stationary relative to the specimen during the uniform elongation. The measuring arms are always dragged together with the specimen so that neither parallel errors nor surface roughness will spoil the measurement. The pressing force of the measuring arms is very faint and a hinge mechanism with all degrees of freedom lines itself up very gently. Therefore very thin sheet metal down to 0.2 mm can be measured. The MFQ-A is automatically brought into contact with the specimen utilising a pneumatic sled.

movement is reversed to swing the unit out of the way. An electronic controller board drives the MFQ-A either directly from the PC or by the control electronics of the MFL using a relay. Alternatively controlling may also be done utilising pushbuttons. It is quite easy to take MFQ-A off the instrument in a few moments. For example if it is not being used during tests that generate large amounts of contamination. The signals of the two measuring clamps can be taken out separately as well in order to detect parallel discrepancies.

Operation

Using their universal mounting profiles the two measuring clamps of the MFQ-A can be aligned to the centre of the specimen and to the B₀-position easily and fast. The end-stops for the differences in initial width of the specimen B₀ 12.5 mm (1/2"), 20 mm, 25 mm (1") and 30 mm are comfortably to be set.



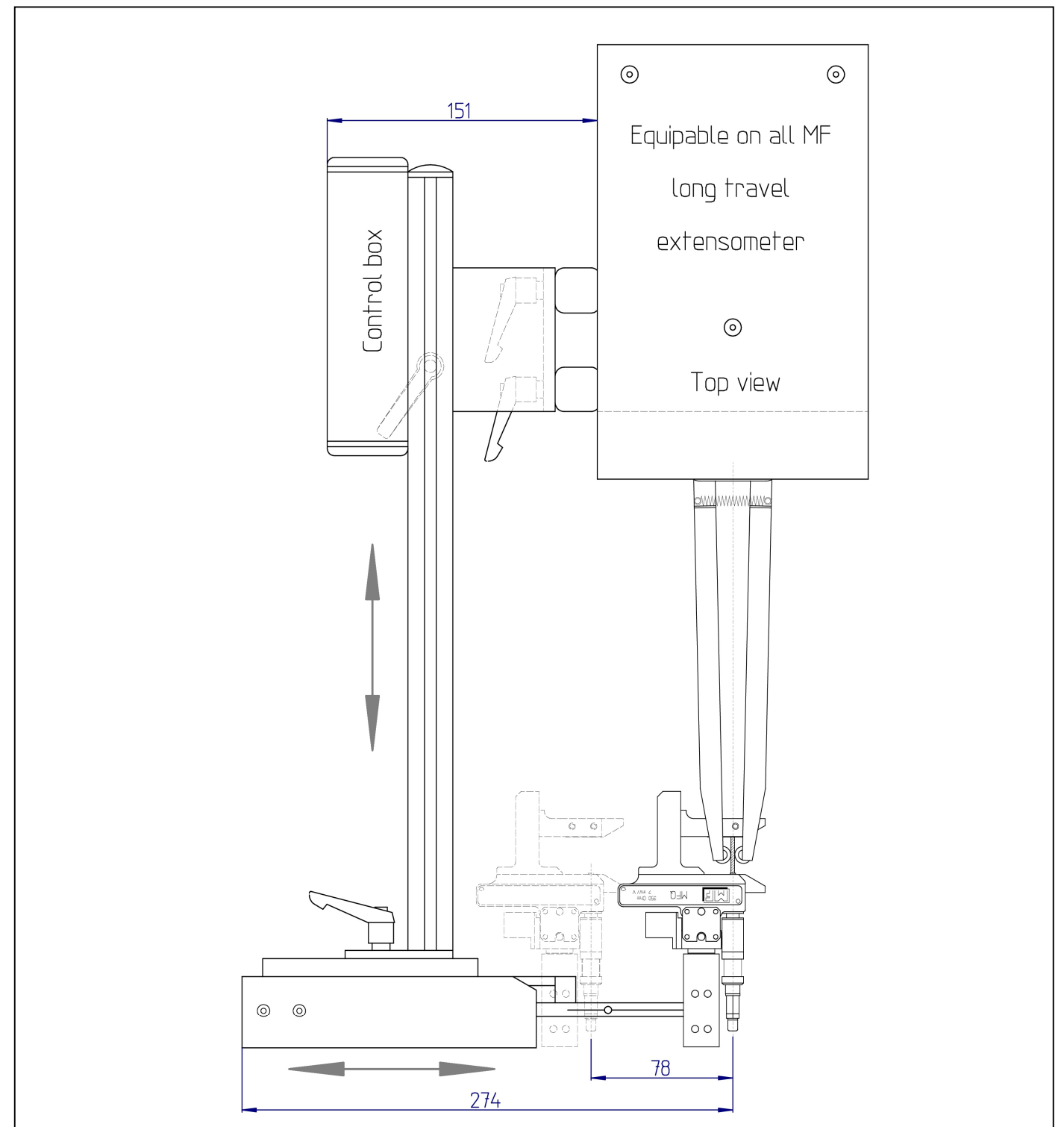
Picture 1: MFQ-A - Connection diagram

Delivery scope

- 1 MFQ-A-guide rail system with 2 measuring clamps
- 1 attaching profile system
- 1 MFQ-A-control unit
- 1 MFQ-A- wall-plug power source
- 1 Plug X4 for control input (In fusion with MFL-B connection cable MFL X9 / MFQ X4 is included)
- 2 Signal output plug X1/X2 for strain gauge measuring bridge
- 6 Meters of pneumatic pipe 4.3
- 1 Pneumatic clutch
- 2 Gauge blocks for calibration (according to the measuring Distance)
- 1 Test report

Calibration of MFQ-A

Gauge blocks for calibration of the sensibility are included in the delivery scope of the MFQ-A. This allows to align the zero point using the gauge block of 16.5 mm and the nominal sensitivity of the amplifier using the gauge block of 20.5 mm (adjustment of measuring clamps to B₀ 20 mm).



Picture 2: MFQ-A with extensometer MFL