Vibration Test System TV 59410/AIT-480

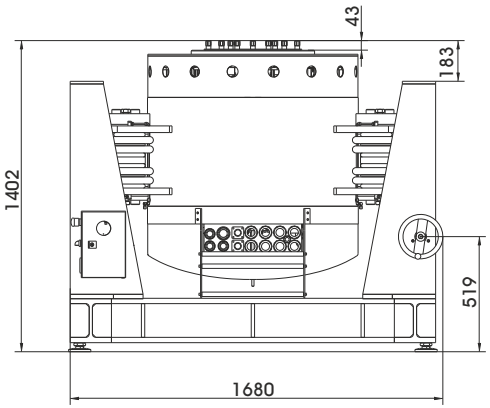
TECHNICAL PARAMETERS

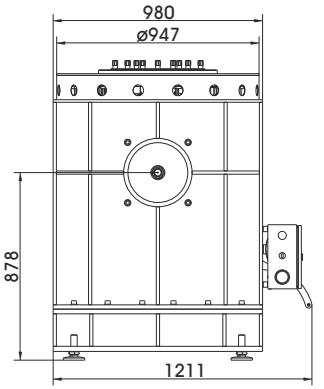
Rated peak force $Sine_{pk}$/$Random^{1}_{RMS}$/$Shock_{pk}^{2}$	100000/89000/300000 N
Frequency range	5 - 2500 Hz
Main resonance frequency	> 2000 Hz
Max. displacement Sine/Random/Shock (Pk-Pk)[3]	63.5/63.5/76.2 mm
Max. velocity $Sine_{pk}$/$Random_{RMS}$/$Shock_{pk}$	2.0/2.0/4.9 m/s
Max. acceleration Sine/Random/Shock	100/90/300 g
Suspension stiffness	250 N/mm
Effective moving mass	76 kg
Max. payload	910 kg
Magnetic stray field[4]	< 1.5 mT
Armature diameter	480 mm
Required compressed air supply	Min. 600 kPa
Total mass	5300 kg
Interlocks	Temperature, displacement, water flow rate, overcurrent, compressed air, conductance

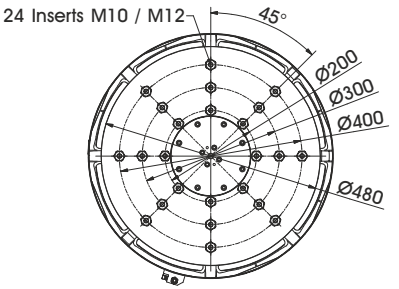
1) Random force according to ISO 5344
2) Theoretical maximum shock value. Depends on payload, amplifier, shock and shock width
3) Impact by moving to static mass and frequency is possible
4) measured at 150 mm above armature inserts
For long-term tests, the load must be reduced to 80 %. Continuous operation at maximum load can cause damage.



S 59412/AIT-480 (Example drawing)
Dimensions in mm







Armature 480 (Standard)

SCOPE OF DELIVERY, OPTIONS AND FEATURES OF THE SYSTEM

Scope of delivery:
- Vibration exciter
- Trunnion mount with integrated vibration isolation (AIT)
- Power amplifier
- Field power unit
- Cooling unit with integrated hydraulic unit
- Connection cables (each 10 m)
- Water hoses with self-sealing couplings (each 10 m)
- Hydraulic hoses with self-sealing couplings (each 10 m)
- Compressed-air hose NW 7.2 (Standard) (10 m)

Options:
- TIRA EMS Energy Management System
- Energy-saving option with continuously variable field power
- Different hole pattern of armature (different pitch diameter and/or thread inserts) at customers request (M10/M12)
- Thermo barrier (-40°C to +140°C)
- Chamber leadthrough
- Climatic chamber support kit
- Remote display
- ASM-Mode (Auto-Shutdown-Manager)
- Cable/Hose extension
- Factory acceptance test
- Upgradable up to a peak force of 125 kN

Features:
- Vibration isolation < 3 Hz (AIT)
- Fully automatic pneumatic load compensation
- Low-friction hydrostatic bearing (Dual Bearing)
- AIT fixable
- Automatic centering of the AIT-System and the armature
- Degauss kit to reduce stray magnetic field
- Shaker-water circuit with overpressure
- Automatic permanent monitoring of conductance
- Integrated mains switch and line filter
- Energy-saving-mode (Field switchover)
- 4 Sigma peak current
- Made in Germany
- Servicehotline

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Subject to modifications

Vibration Test System TV 59410/AIT-480

TECHNICAL PARAMETERS Power Amplifier A 6 00 11 273 + Field power supply

Output power$_{RMS}$, max.	150000 VA
Frequency range	DC - 5 kHz
Voltage$_{RMS}$, max.	230 V
Current$_{RMS}$, max.	1300 A
Signal input voltage$_{PK}$	±10 V
Total Harmonic Distortion (THD, at 70A$_{RMS}$, 200 Hz)	< 0.2 %
Signal to noise ratio	> 85 dB
Power supply - Amplifier (Standard)	3~ / N / PE 400 V±5% 50 Hz Direct connection (Terminal block)
Power supply - Field power supply (Standard)	3~ / N / PE 400 V±5% 50 Hz Direct connection (Terminal block)
Max. power consumption at 400 V	
Amplifier (incl. cooling unit)	95 kVA
Field power supply	40 kVA
Recommended fuse protection Amplifier (Standard)	225 A slow (for full extension)
Recommended fuse protection FPS (Standard)	125 A slow
Dimensions - Amplifier (WxHxD)	2400 x 2200 x 900 mm
Dimensions - Field power supply (WxHxD)	600 x 1740 x 850 mm
Total mass - Amplifier	1800 kg
Total mass - Field power supply	500 kg

Interlocks: Overload, Temperature, Displacement, Compressed air, Phase monitoring, Emergency stop, Water flow rate, Conductance

Features:
Multi-level field switching (energy saving mode)
Mains switch and integrated line filter
Field voltage/Field current variable
according to customer spec.
4 Sigma peak current
Color-Touchscreen
Upgradable by modular design



Amplifier



Field power supply

TECHNICAL PARAMETERS Cooling unit C 59412

Environmental conditions:	
Temperature	5 - 30 °C
Relative humidity	10 - 80 %
Energy transfer	max. 3 kW
Process water:	
Temperature	5 - 15 °C
Volume flow at max. supply temperature	10 m³/h (for full extension)
Working pressure: supply - static	≤ 8 bar (≤ 800 kPa)
Working pressure: dynamic differential pressure	≥ 3 bar (≥ 300 kPa)
Dissipated heat flow	max. 110 kW
Nominal width of supply pipes	R 1 1/2 IT (40 mm)
pH value	7 ± 1
Dimensions of dirt particles	< 25 µm
Water hardness (total/carbonate)	< 1.4 mmol/l / < 0.9 mmol/l
Dimensions (WxHxD)	800 x 2200 x 900 mm
Total mass	~300 kg

Features:
Closed system --> No pollution and no water loss by evaporation
The system works with a higher pressure --> No cavitation interferences at the measuring signal
Manometers and flow meters at several places within the circuits
Integrated conductance monitoring and demineralisation
Reduction of water consumption at part load by controlling of the process water flow
Self-sealing couplings (free from leakage)
Optional: Hose length according to customer specs (up to 20 m)



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