

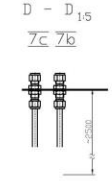
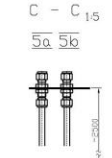
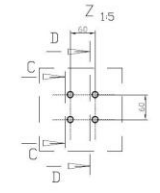
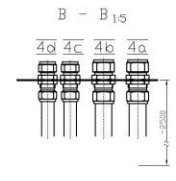
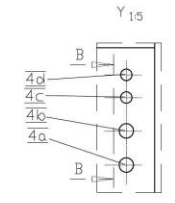
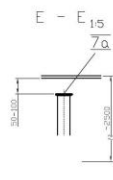
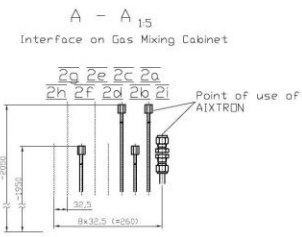
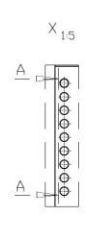
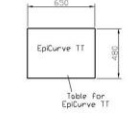
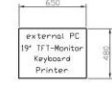
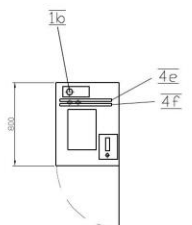
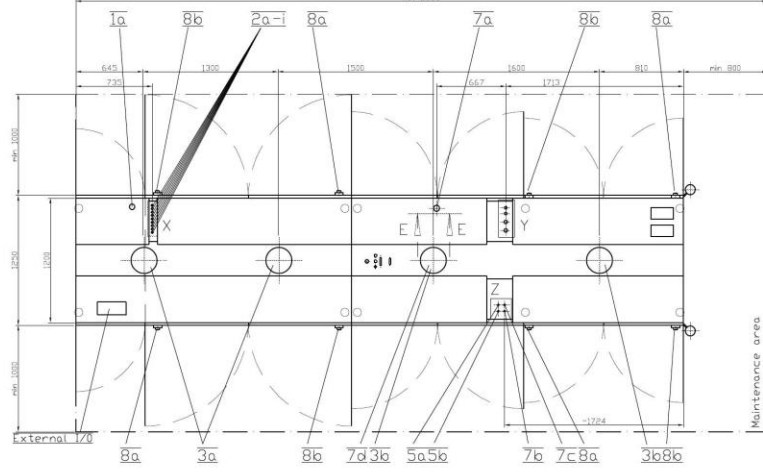
For further information see "Infeeding Schematic"

For all cabinets: air gap of 10mm between frame and floor is necessary!

EpiCurve TT is integrated

All cabinets have earthquake brackets! System delivered without transport rollers!

Cable length RF-Generator - Oscillator: total 15m (10m free cable length)



General Safety Requirements

Customer is responsible for:

- Toxic Gas Monitoring for all utilized hydride gases according to gas mixing system
- Hydrogen Monitoring
- Scrubber Monitoring

Alarm signals - potential-free ("dry") contacts - to be provided by customer in order to interlock the MOCVD system.

For detailed description of all alarm inputs and outputs please see cause/effect diagram.

▨ Spare Provision

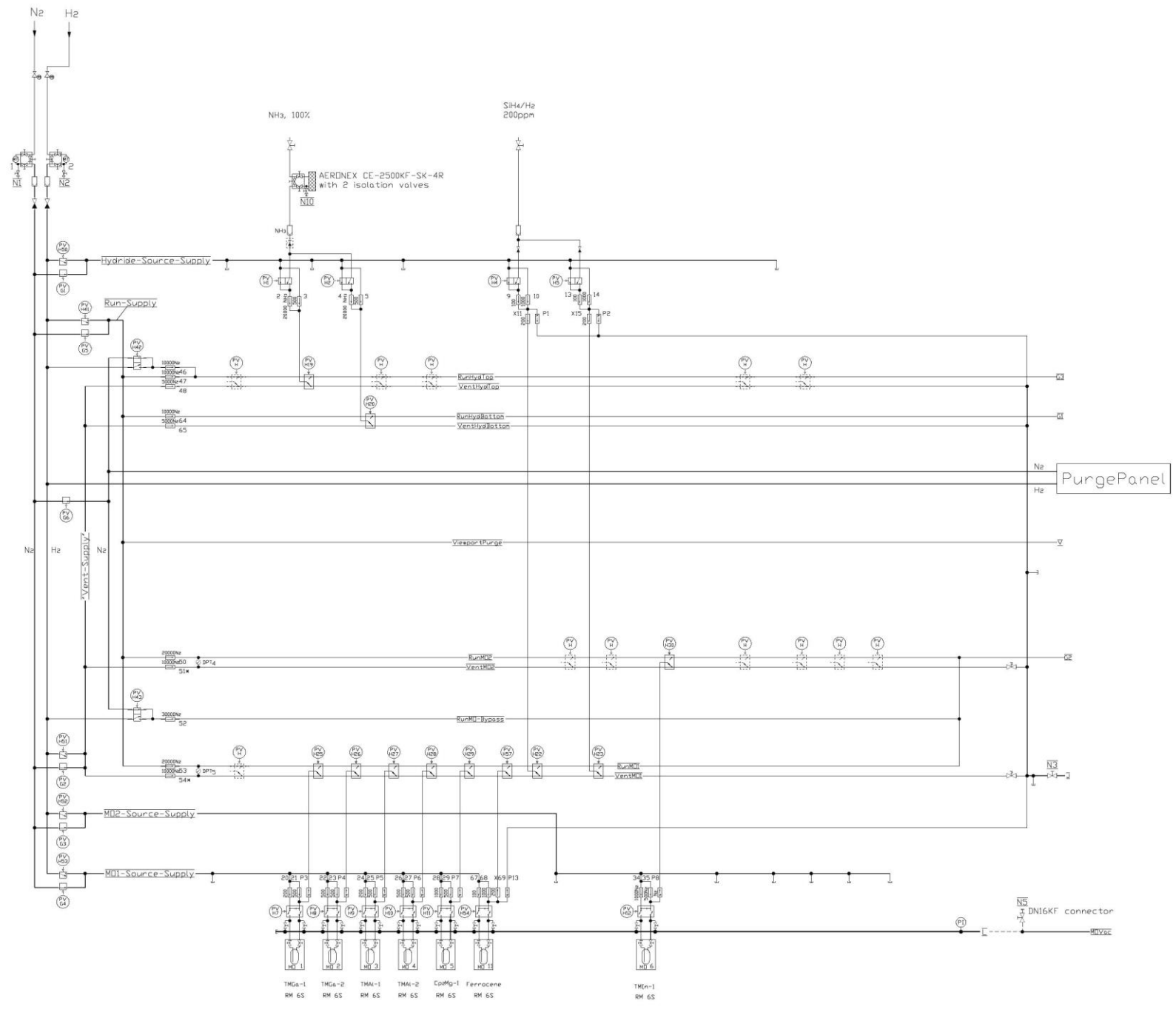
Installation Data

- Power Supply**
 - Infeeding System**
 prov. by customer: 3/N/PE/60Hz ±1% / 208Volt ±5% AC-Fuse 100A
 prov. by AIXTRON: 3/N/PE/60Hz ±1% / 208Volt ±5% AC-Fuse 85A
 Max. Power consumption: 26kVA
 - Infeeding RF-Heater (BIG100)**
 prov. by customer: 3/PE/50Hz/60Hz ±1% / 480Volt ±5% AC-Fuse 200A
 prov. by AIXTRON: 3/PE/50Hz/60Hz ±1% / 480Volt ±5% AC-Fuse 160A
 Max. Power consumption: 123,7kVA
- Gas Interface**
 VCR - AIXTRON provides female
 - N₂ Getter purified - 1/4" VCRF - 4.0 ... 7.0 bar stabilized
 - H₂ quality Pd-diffused - 1/4" VCRF - 4.0 ... 7.0 bar-stabilized
 - NH₃ 100% - 1/4" VCRF - 3.5 ... 4.0 bar-stabilized
 highest quality according to "Blue Ammonia" by SOLKATRONIC
 - space
 - space
 - SiH₄/H₂ 200ppm - 1/4" VCRF - 3.0 ... 3.5 bar-stabilized
 - space
 - space
 - N₂ tech. 1/2" Swagelok - 7.0 ... 8.5 bar
 (N₂ 3.5 low O₂ content)
 (max. flowrate approx. 130slm (peak))
- Ventilation**
 (customer has to limit H₂-flow to 150slm, NH₃-flow to 100slm
 HCl-flow to 1slm, SiH₄/H₂ 2% to 5slm)
 - Gas Mixing Cabinet: 2x9 7/8" (ø250mm) - each approx. 500m³/h
 - Reactor Cabinet: 2x9 7/8" (ø250mm) - each approx. 500m³/h
 containing minute amounts of hydrogen
- Cooling Water** (according to AIXTRON water specs)
 - Inlet (max.) 6.5 bar, 1" Swagelok
 minimum total flow 45l/min
 temperature 17°-25°C, temperature stability: ±1°C
waterspecs for Al-free loop
 - Outlet (max.) 2.5 bar, 1" Swagelok
 (min. differential pressure 4 bar, @ required flow)
 - Inlet Top-Ring-Bottom-Gasinlet: maximum 6.0 bar, 3/4" Swagelok
 minimum total flow 50l/min
 temperature 20°C, temperature stability ±1°C
waterspecs for Al-containing loop
 - Outlet Top-Ring-Bottom-Gasinlet: maximum 2.0 bar, 3/4" Swagelok
 maximum temperature 40°C
 (min. differential pressure 4 bar, @ required flow)
 - Inlet Generator: 6 bar, min. 30l/min 3/4" Swagelok (BIG 100)
waterspecs for Al-free loop
 - Outlet Generator: 3/4" Swagelok
 (min. differential pressure 4 bar, @ required flow)
 Moisture non-condensing at room temperature
 at lowest water temperature (see diagram in RF-Manual)
- Gas Inlet Glove-Box**
 - Forming gas (5 ... 10% H₂ in N₂) - 0.3 ... 0.5 bar, 3/8" Swagelok
 - Working gas (N₂ 5.0) - 5 ... 6 bar, 3/8" Swagelok
- Electrical connectors to RF Generator by AIXTRON**
- Process Gas Exhaust**
 - Process gas exhaust connected to Scrubber
 DN40KF flange, 50-100mm below top of Glovebox
 open line for continuous flow
 He-leaktight <= 10 E(-9) mbar l/s
 Oxygen < 1ppm
 line pressure atm > p > atm - 20 mbar
 - Exhaust GB Pump
 3/8" Swagelok
 - Exhaust Forming Gas
 3/8" Swagelok
 (Containing up to 10% H₂/N₂)
 - Exhaust Vacuum Tweezer
 1/4" tube internal to
 Cabinet Ventilation (3b)
- Safety Push Down Button with Guard Ring**
 - Process Stop Button
 - Emergency Off Button

1	Released for Production	25.02.08	BT/rog
0	Released for Production	13.02.08	KD
Rev.	Release	Date	Name

FIN/SH Part No. 8888 DIN ISO 1582		ISO 128 12815	Date: 12.02.08 Rev: 1	Title: Installation Plan AIX 2800G4 HT (6x6)
1 No. color of cabinets changed		Drawing number:		
DO NOT SCALE		AIXTRON		

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Bubbler outlets of TMin and CpMg are in 1/4" (all other in 1/8")

DPT4 & 5: 100mbar type!

Reactor MFC (47-54) are positioned in Reactor Cabinet, except MFC52 (GMCabinet)

* = X-mode-MFC (MFC 51 and 54) if the active pressure balancing is integrated

X - MFC for differential pressure up to 1bar (all other up to 3,5bar)
 H - Hazardous Valves
 G - General Valves

<ul style="list-style-type: none"> ⊠ Heater Purge ⊠ Rotation Satellite ⊠ Collector Purge 1 ⊠ Collector Purge 2 ⊠ Collector Purge 3 ⊠ Ceiling ⊠ Ferrrocene Purge ⊠ Run Hydride Bottom ⊠ Run MD 1, 2 (center) ⊠ Run Hydride Top ⊠ Vent ⊠ MD-Vacuum ⊠ Leaktest Port ⊠ Viewport Purge 	<ul style="list-style-type: none"> ⊠ DDR Double D-Ring ⊠ High Vacuum Ball Valve — = 1/4" — = 1/2" — = 3/4" — = KT 16 — = KT 40 — = KT 50 ⊠ Space ⊠ Space (provision for future extension) 	<ul style="list-style-type: none"> ⊠ Digital Mass Flow Controller ⊠ Digital Pressure Controller ⊠ 5/2 Way Valve ⊠ Check Valve ⊠ Manual Valve ⊠ 2/2 Way Valve no ⊠ 2/2 Way Valve nc ⊠ Particle Filter ⊠ Epsilon 4 ⊠ 3/2 Way Valve ⊠ 4/2 Way Valve ⊠ Diff. Pressure Transducer ⊠ Driftice #mm ⊠ Dry Pump ⊠ Pressure Transducer ⊠ Moisture Sensor ⊠ Pressure Indicator ⊠ Pressure Switch ⊠ Pressure Valve ⊠ Electric/Pneumatic Valve ⊠ Electric Valve ⊠ Difference Pressure Transmitter
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1	Released for Production	25.02.08	BProg
0	Released for Production	13.02.08	KD
Rev.	Release	Date	Name

FIN SH Surface area 1302		ISO 128 AO	Rev: 1	Title: Gas Mixing System AIX 2800G4 HT
1 Counting changed, manual valves (N2 / H2 inlet) removed		Date: 13.02.08	Drawn: KD	Sheet: 1
DO NOT SCALE		AIXTRON		

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