



Ihr Partner für perfekte Leiterplattentechnik

Gebr. Schmid Maschinenfabrik GmbH+Co. · Postfach 820 · 72238 Freudenstadt

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Date : 23.09.2005

Your order dated
16.08.2005

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**Order Confirmation N° 03-05-373 KV
Drawing N° 03-18748-2-A1**

**DMS-E Line
Touch Screen + PLC Version**

Your Order N° :
Delivery date : ex works GSF CW 49
Internal N° : HU003216-002-03
Customer N° :
Working direction : left-right
Frequency controlled Conveyor drive : yes

Representative

Gebr. Schmid GmbH + Co.
Robert-Bosch-Straße 32 - 34
D 72250 Freudenstadt

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AG Freudenstadt, HRA 105
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Bankverbindungen

Kreissparkasse, Freudenstadt (BLZ 642 510 60) 5 11 5
Volksbank, Freudenstadt (BLZ 642 910 10) 7 349 009
Dresdner Bank, Freudenstadt (BLZ 600 800 00) 4 139 318
Landesbank BW, Freudenstadt (BLZ 600 501 01) 4 902 111
Commerzbank, Freudenstadt (BLZ 694 400 07) 290 653 500
Postbank, Stuttgart (BLZ 600 100 70) 6 382-701



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1. Equipment Data

1.1 Series

- DMS-E Line
- Working Width
 - Working Height
 - Machine Length

Combi-line

- 650 mm
- 900 mm +/- 15 mm
- 6875.00 mm

1.2 Conveyor speed

- Operation Speed 0.50 m/min
- Range of Conveyor Speed 0.2- 6.0 m/min

1.3 Working direction

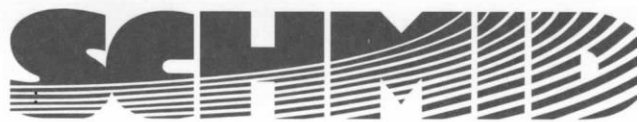
- Working Direction left-right

1.4 Specification of Panels

- Maximum Panel Width 630 mm
- Maximum Panel Length 630 mm
- Minimum Panel 150 x 150 mm
- Maximum Panel Thickness 3.0 mm
- Minimum Panel Thickness 0.2 mm
- Base Material -FR4

1.5 Notes

- Separate control cabinet with connection cable to the machine. Any additional cable lengths, if required, Euro 130,-/meter
- Process times have to be checked and released by the customer.
- The scope of delivery does not include the insulation of the cooling pipes. On request of the customer, this item can be quoted at Euro 54,-/meter.
- The scope of delivery does not include the central piping of the supply and drain lines. On request of the customer, this item can be quoted.
- Noise max: 75 DB(A) operating site, 80 DB(A) Installation site



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2. Technical Data

2.1 Consumption Data

2.1.1 Electrical Connection Data

3 Phases Alternating Current AC	400V +/- 10%, 50Hz
Control Voltage	24 V DC

2.1.2 Power Consumption of Equipment

39.31 kW (subject to change)

2.1.3 Capacity of Equipment

~ 20 m²/h at 100 % space use
~ 15 m²/h at 75 % space use

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2.2. Module Description

Item	Quantity	Description	Total price
1		MODUL 001 - INPUT	
1.1		TRE 1 - 375 mm, consisting of:	
	1	- TRE 1 PVC/SS Entry module with emergency stop switch	
	1	- Exhaust Connection d=75 mm SS, TRE-TRA-TRK With 2 squeegee rollers	
	1	- Exhaust, Exhaust Damper for Exhaust Connection	
	1	- Service Unit for Electropneumatic Valves with pressure reducer and pressure control	
	1	- Pulse Generator	
	1	- Sensor with Fixing Device ++ Stand by +	
	1	- Area calculator by manual input via PLC	
1.2		Transport system Innerlayers for TRE 1, consisting of:	
	1	- TRE/TRA/TRK 1 Innerlayer transport in PVC/SS	
2		MODUL 002 - CONDITIONER	
2.1		WMT 2 - 625 mm, consisting of:	
	1	- WMT-W 2 US PVC/SS - Process Module with Flood Box, tank as substructure and lid safety interlock, prepared for installation of Ultrasonic Transducers	
	1	- Overflow Pipe d=50	
	1	- Dry-Run protection or level control for installation in plastic modules, without control light, for PLC applications	
	1	- Manual valve PVC d=12	
	1	- Reed Contact Chain for installation in plastic modules	
	2	- Level Monitor SS - Capacitive for Flood Box	
2.2		Transport system Innerlayers, consisting of:	
	1	- WMT-W 2 Innerlayer transport PVC/SS	
2.3		Spray system for a WMT 2, consisting of:	
	1	- Surge unit, bottom, separately adjustable via manual valve	
	1	- Surge Unit, top, for modules equipped with flood boxes	
	1	- Manifold with supply pipe and manual valve for the top surge units	
	1	- Ultrasonic generator 2 kW ++ for M2 and M6 ++	
	1	- Ultrasonic Transducer with 1000 W in SS	
	1	- High frequency cable l = 10 m	
2.4		Pump system, prepared for filter installation, consisting of:	
	1	- Pump - Immersion Pump 1.8 kW prepared for filter	

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- installation or pressure pipe
- 1 - Filter - PP/EPDM COMpact S - 3 x 10" filter
quick-exchange type, electrical lid control
 - 3 - Filter - filter cartridge 75 µm, PP
- 2.5 Temperature control, consisting of:**
- 1 - Temperature probe in SS
 - 1 - Electropneumatic Valve d=20 PVC
 - 1 - Cooling coil SS without electropneumatic valve
 - 1 - Heating 4.0 kW SS
 - 1 - Safety thermostat for heating or cooling
without light, TÜV inspected
- 2.6 Dosing system consisting of:**
- 2 - Pump - Dosing pump 0 - 54 l/h
with suction and pressure hose
 - 2 - Check valve for dosing pump 25 - 54 l/h
 - 2 - Overflow valve 25 - 54 l/h
 - 2 - Liquid Suction Armature in PP / 50 l/h with level switch
 - 2 - Base for dosing pump 7.2 - 120 l/h
 - 1 - Electropneumatic Valve d=20 PVC
- Wasser
- 3 MODUL 003 - CASCADE-RINSE**
- 3.1 KSM 3 - 875 mm consisting of:**
- 1 - KSM 3 SS Cascade Rinse Module and lid safety interlock
 - 1 - Overflow Pipe d=50
- 3.2 Cascade 1 in KSM 3, consisting of:**
- 1 - High Impact Spray Pipe in SS with PVDF-Nozzles
 - 1 - WTM-W flood box in SS, below
 - 1 - KSM 3 Innerlayer transport for SS
 - 1 - Pump - Immersion pump 0.75 kW without filter / COMpact
Filter
- 3.3 Cascade 2 in KSM 3, consisting of:**
- 2 - High Impact Spray Pipe in SS with PVDF-Nozzles
 - 1 - KSM 3 Innerlayer transport for SS
 - 1 - Pump - Immersion pump 0.75 kW without filter / COMpact
Filter
- 3.4 Cascade 3 in KSM 3, consisting of:**
- 2 - High Impact Spray Pipe in SS with PVDF-Nozzles
 - 1 - KSM 3 Innerlayer transport for SS
 - 1 - Pump - Immersion pump 0.75 kW without filter / COMpact
Filter
- 3.5 Inlet system for a KSM 3 Module, consisting of:**
- 1 - Flow meter 15 - 160 l/h, includes regulator valve
 - 1 - Flow Meter-Limit Contact Min. - PLC

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- 1 - Electropneumatic Valve d=20 PVC
- 1 - Manual valve PVC d=20

4 **MODUL 004 - INITIATOR**

4.1 **WTM 4 - 1125 mm consisting of:**

- 1 - WTM-W 4 Permanganate module SS
- 1 - Reed Contact Strip for Use in SS Modules
- 1 - Dry-Run protection or level control for installation in SS modules, without control light, for PLC applications
- 2 - Level Monitor - Conductive for flood box in SS
- 1 - Overflow Pipe d=50
- 1 - WTM-W VA 2 electropneumatic valves SS for storage tank, filling-in by means of a module pump, nominal width 25
Price per module
- 1 - Electropneumatic Valve - Position Indicator

4.2 **Spray system for WMT 4, consisting of:**

- 1 - WMT-W Manifold with Inlet Pipe and ball valve for High Impact Spray Pipes at top side
- 1 - WTM-W - upper flood nozzle pipe, SS for module
- 2 - WTM-W flood box in SS, below

4.3 **Transport system Innerlayers, consisting of:**

- 1 - WTM-W 4 Innerlayer transport Permanganate

4.4 **Pump system prepared for installation of a filter, consisting of:**

- 1 - Pump - Immersion Pump 4.5 kW for Permanganate with PTFE/SS parts

4.5 **Temperature control, consisting of:**

- 1 - Safety thermostat for heating or cooling without light, TÜV inspected
- 1 - Temperature probe in SS
- 1 - Cooling coil in SS with electropneumatic valve
- 1 - Heating 10 kW for Permanganate in SS, welded

4.6 **Dosing system consisting of:**

- 1 - Batch dosing system for chemistry in SS consisting of:
 - Dosing tank in SS with free adjustable reed contact chain from 0.05 - 2.1 or 0.8 - 2.9 liters, with scale
 - Solenoid valve in drain pipe to process module, controlled by area calculator or panel counter
 - Input connection d=20 for dosing pump or solenoid valve

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- Safety overflow and ventilation pipe to drain pipe
- 1 - Electropneumatic valve SS/PTFE with Teflon seal
- 1 - Pump - Dosing pump 0 - 54 l/h SS/PTFE with suction and pressure hose
- 1 - Overflow valve 25 - 54 l/h ++ VA ++
- 1 - Check valve for dosing pump 25 - 54 l/h ++ VA ++
- 1 - Liquid Suction Armature in PP / 50 l/h with level switch
- 1 - Base for dosing pump 7.2 - 120 l/h

5 **MODUL 005 - CASCADE-RINSE**

5.1 **KSM 3 - 875 mm consisting of:**

- 1 - KSM 3 SS Cascade Rinse Module and lid safety interlock
- 1 - Overflow Pipe d=50

5.2 **Cascade 1 in KSM 3, consisting of:**

- 1 - High Impact Spray Pipe in SS with PVDF-Nozzles
- 1 - WTM-W flood box in SS, below
- 1 - KSM 3 Innerlayer transport for SS
- 1 - Pump - Immersion pump 0.75 kW without filter / COMpact Filter

5.3 **Cascade 2 in KSM 3, consisting of:**

- 2 - High Impact Spray Pipe in SS with PVDF-Nozzles
- 1 - KSM 3 Innerlayer transport for SS
- 1 - Pump - Immersion pump 0.75 kW without filter / COMpact Filter

5.4 **Cascade 3 in KSM 3, consisting of:**

- 2 - High Impact Spray Pipe in SS with PVDF-Nozzles
- 1 - KSM 3 Innerlayer transport for SS
- 1 - Pump - Immersion pump 0.75 kW without filter / COMpact Filter

5.5 **Inlet system for a KSM 3 Module, consisting of:**

- 1 - Flow meter 60 - 640 l/h, includes regulator valve
- 1 - Flow Meter-Limit Contact Min. - PLC
- 1 - Electropneumatic Valve d=20 PVC
- 1 - Manual valve PVC d=20

6 **MODUL 006 - POLYMERISATION**

6.1 **WTM 4 - 1125 mm consisting of:**

- 1 - WTM-W 4 PP/SS - Process Module with Flood Box, high sump and lid safety interlock
- 1 - Overflow Pipe d=50
- 1 - Dry-Run protection or level control for installation in plastic modules, without control light, for PLC applications

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- 1 - Reed Contact Chain for installation in plastic modules
 - 2 - Level Monitor SS - Capacitive for Flood Box
 - 1 - electropneumatic PP valve d=20
++ Water ++
- 6.2 **Spray system for a WMT 4, consisting of:**
- 2 - Surge Unit, top, for modules equipped with flood boxes
 - 1 - 2 Surge Units, bottom, adjustable via manual valve
 - 1 - Manifold with supply pipe and manual valve for the top surge units
 - 1 - Ultrasonic Transducer with 1000 W in SS
 - 1 - High frequency cable l = 10 m
- 6.3 **Transport system Innerlayers, consisting of:**
- 1 - WTM-W 4 Innerlayer transport PP/SS
- 6.4 **Pump system prepared for installation of a filter, consisting of:**
- 1 - Pump - Magnetic pump 3.0 kW
 - 1 - Filter - PP/EPDM COMpact S - 3 x 10" filter
quick-exchange type, electrical lid control
 - 3 - Filter - filter cartridge 75 µm, PP
- 6.5 **Temperature control, consisting of:**
- 1 - Safety thermostat for heating or cooling
without light, TÜV inspected
 - 1 - Temperature probe in SS
 - 1 - Electropneumatic Valve d=20 PVC
 - 2 - Cooling coil SS without electropneumatic valve
- 6.6 **Dosing system consisting of:**
- 2 - Pump - Dosing pump 0 - 54 l/h
with suction and pressure hose
 - 2 - Check valve for dosing pump 25 - 54 l/h
 - 2 - Overflow valve 25 - 54 l/h
 - 2 - Liquid Suction Armature in PP / 50 l/h with level switch
 - 2 - Base for dosing pump 7.2 - 120 l/h
- 7 **MODUL 007 - CASCADE-RINSE**
- 7.1 **KSM 3 - 875 mm consisting of:**
- 1 - KSM 3 PVC/SS Cascade Rinse Module and lid safety interlock
 - 1 - Overflow Pipe d=50
- 7.2 **Cascade 1 in KSM 3, consisting of:**
- 1 - High Impact Spray Pipe PVC with quick-release connections as well as 35 standard Nozzles
 - 1 - Surge Unit PVC/SS
 - 1 - KSM 3 Innerlayer transport in PVC/SS
 - 1 - Pump - Immersion pump 0.75 kW without filter / COMpact Filter

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- 1 - Filter - PVC/EPDM - COMpact quick-exchange filter ,
without lid control, only use for 0,37kW and 0,75kW pumps
- 1 - Filter - Filter mesh 80 µm,PP
- 7.3 **Cascade 2 in KSM 3, consisting of:**
 - 2 - High Impact Spray Pipe PVC with quick-release connections
as well as 35 standard Nozzles
 - 1 - KSM 3 Innerlayer transport in PVC/SS
 - 1 - Pump - Immersion pump 0.75 kW without filter / COMpact
Filter
- 7.4 **Cascade 3 in KSM 3, consisting of:**
 - 2 - High Impact Spray Pipe PVC with quick-release connections
as well as 35 standard Nozzles
 - 1 - KSM 3 Innerlayer transport in PVC/SS
 - 1 - Pump - Immersion pump 0.75 kW without filter / COMpact
Filter
- 7.5 **Inlet system for a KSM 3 Module, consisting of:**
 - 1 - Flow meter 60 - 640 l/h, includes regulator valve
 - 1 - Flow Meter-Limit Contact Min. - PLC
 - 1 - Electropneumatic Valve d=20 PVC
 - 1 - Manual valve PVC d=20
- 8 **MODUL 008 - DRYER**
 - 8.1 **TKM 2 - 625 mm, consisting of:**
 - 1 - TKM 2 PP/SS Dryer
with Pt 100 and Safety Termostate
 - 2 - Exhaust Connection d=90 without damper
 - 8.2 **Transport system Innerlayer, consisting of:**
 - 1 - TKM 2 Innerlayer transport PP/SS
 - 1 - Conveyor Drive 0.2 - 6 m/min continuously adjustable
frequency-controlled with reluctance motor
 - 8.3 **Air nozzles for Dryer TKM 2, consisting of:**
 - 1 - TKM Dry Jet with 2 blowers à 3.0 kWVA, with check valve,
used with IL and flex material in Dryer, includes 2 air intake
filters
- 9 **MODUL 009 - OUTPUT**
 - 9.1 **TRE 1 - 375 mm, consisting of:**
 - 1 - TRE 1 PVC/SS Entry module with emergency stop switch
 - 9.2 **Transport system Innerlayers for TRE 1, consisting
of:**
 - 1 - TRE/TRA/TRK 1 Innerlayer transport in PVC/SS
- 10 **ANCILLERIES**
 - 10 - Cable connection to control cabinet