

TECHNICAL DATA SHEET  
**METAL SEPARATOR**  
**QUICKTRON 05 A**

**DETECTION OF ALL TYP OF METALS**

- FERROUS
  - STAINLESS STEEL
  - ALUMINUM
  - COPPER
  - BRASS
  - OTHERS
- RELIABLE DETECTION OF FREE OR ENCAPSULATED CONTAMINANTS

**HIGH SENSITIVITY METAL SEPARATOR FOR THE INSPECTION OF  
FREE FLOWING - GRAVITY FED BULK MATERIALS SUCH AS  
GRAIN, FEED, GRANULATES, POWDERS, ...**



**INDUSTRIES**

- SPICE INDUSTRY
- PET FOOD INDUSTRY
- PLASTICS AND RUBBER INDUSTRY

**APPLICATION**

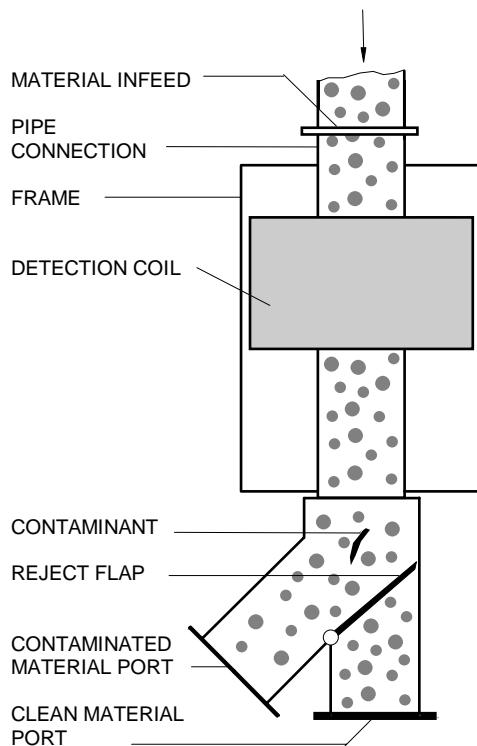
- INCOMING MATERIALS CONTROL
- QUALITY CONTROL
- MACHINERY PROTECTION  
PULVERIZERS, EXTRUDERS  
MIXERS, AND MORE

Our company works according to **ISO 9001** but is not certified at this time.



- THE MESUTRONIC QUICKTRON IS EASILY INTEGRATED INTO EXISTING INSTALLATIONS THANKS TO LOW OVERALL HEIGHT AND COMPACT DIMENSIONS.
- THE OPEN FRAME CONSTRUCTION ALLOWS UNRESTRICTED ACCESSIBILITY TO ALL COMPONENTS FOR EASY CLEANING.
- A VARIETY OF MODELS TO SUIT ALL APPLICATIONS AND THRUPUTS. ROUND APERTURES FROM 50 TO 300 MM, AS WELL AS SQUARE OR RECTANGULAR OPENINGS ARE AVAILABLE.
- THE ELECTRONICS ARE MOUNTED TO THE FRAME, REMOTE MOUNTING OF THE ELECTRONICS IS AVAILABLE, IF DESIRED.
- THE DATA SHEET CONTAINS ADDITIONAL INFORMATION AS TO THE AMD 05 (VERSION 5.0) ELECTRONICS.
- .....

## WORKING PRINCIPLE



THE QUICKTRON SERIES ELECTRONIC METAL SEPARATORS AUTOMATICALLY DETECT AND REJECT METALLIC CONTAMINANTS FROM FREE FALLING BULK MATERIALS. CLEAN PRODUCT PASSES FREELY THRU THE REJECT ASSEMBLY. A CONTAMINANT IN THE PRODUCT STREAM ALTERS THE HIGH FREQUENCY FIELD GENERATED BY THE SEARCH COIL. THE ELECTRONICS EVALUATE THIS SIGNAL AND GENERATE AN IMPULSE FOR THE SOLENOID AND THE DOUBLE ACTUATING AIR CYLINDER OF THE REJECT ASSEMBLY. THE CONTAMINANT IS INSTANTLY DIVERTED FROM THE GOOD PRODUCT STREAM ASSURING MINIMAL GOOD PRODUCT LOSS. THE REJECT TIME IS ADJUSTABLE. IN THE CASE OF SEVERAL METAL PARTICLES BEING PRESENT, THE REJECT TIME WILL BE EXTENDED ACCORDINGLY, TO ASSURE A METAL FREE PRODUCT.

SEPARATOR DEVICE QUICKTRON 05 A

## STANDARD SCOPE OF DELIVERY

- REJECT UNIT INCLUSIVE ALL PNEUMATIC COMPONENTS SUCH AS AIR PRESSURE REGULATOR, WATER SEPARATOR, ETC.
- ELECTRONICS MOUNTED IN A METAL CABINET
- CONNECTING CABLES
- INSTALLATION HARDWARE
- OWNERS MANUAL INCL. INSTALLATION INSTRUCTIONS, WIRING DIAGRAM AND SPARE PARTS LIST
- EG CONFORMITY DECLARATION (MANUFACTURERS CERTIFICATE)

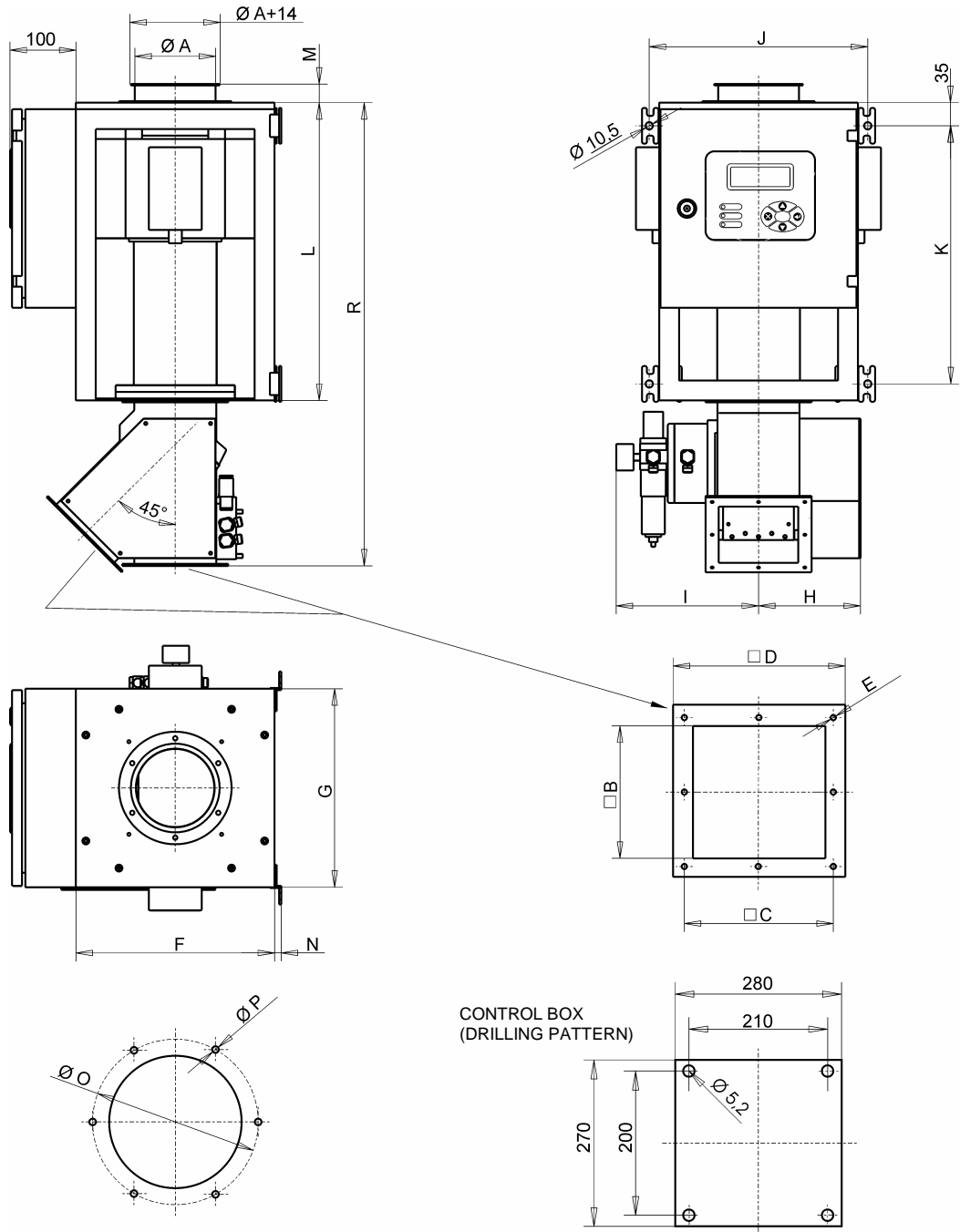
## OPTIONS

- OPTICAL AND ACOUSTICAL SIGNAL UNITS
  - BEACON
  - BUZZER
  - BEACON WITH SIREN
- TRANSITIONS
  - FOR MATERIAL INFEEED
  - FOR „GOOD“ MATERIAL OUTLET
  - FOR REJECTED MATERIAL  
(SIZE AND SHAPE MAY BE FREELY DEFINED AS REQUIRED)
- CONNECTING FLANGES
- AIR COMPRESSOR
- COMPRESSED AIR TANK
- ADDITIONAL FILTERS
  - MAGNETICALLY OPERATED VOLTAGE STABILIZERS
  - ELECTRONICALLY OPERATED VOLTAGE STABILIZERS

## SPECIAL VERSIONS

- FOR OVERPRESSURE APPLICATIONS UP TO 0,3 BAR
- HIGH TEMPERATURE VERSIONS
- REJECT MECHANICS FOR SLOW FLOWING, STRINGY, EXTREMELY LIGHT AND VERY COARSE PRODUCTS.
- „QUICK OUT“ REJECT. THE REJECT MECHANICS CAN BE MANUALLY DISCONNECTED IN SECONDS FOR EASY CLEANING.
- HIGHER ELECTRONIC PROTECTION RATING (NEMA RATING) SUCH AS EXPLOSION PROOF VERSIONS
- UNITS PAINTED TO CUSTOMER SPECIFIC COLOR CODE
- CUSTOMER SPECIFIC SUPPLY VOLTAGE
- „NEUTRAL VERSION“ FOR OEM CUSTOMERS

# DIMENSIONS



$\varnothing A$	B	C	D	E	F	G	H	I	J	K	L	M	N	$\varnothing O$	$\varnothing P$	R	Gewicht
50	70	86	100	8xM5	220	300	100	180	250	260	310	-	-	72	4xM5	490	25 kg
70	70	86	100	8xM5	220	300	100	180	250	260	310	-	-	130	4xM5	490	25 kg
80	120	140	160	8xM5	300	300	154	215	330	340	400	35	10	$\varnothing 108$	6xM5	650	35 kg
100	120	140	160	8xM5	300	300	154	215	330	340	400	28	10	$\varnothing 130$	6xM5	650	40 kg
120	120	140	160	8xM5	300	300	154	215	330	390	450	28	10	$\varnothing 150$	6xM5	700	45 kg
150	200	225	246	8xM5	370	350	203	255	380	405	470	36	5	$\varnothing 180$	6xM5	800	55 kg
200	200	225	246	8xM5	430	430	203	255	460	605	670	37	5	$\varnothing 230$	6xM5	1000	65 kg
250	300	325	360	8xM5	530	530	322	180	560	605	665	48	5	$\varnothing 280$	6xM5	1200	130 kg
300	300	325	360	8xM5	630	630	322	180	660	805	865	50	5	$\varnothing 366$	8xM10	1400	160 kg

ALL DIMENSIONS IN MM.

WE CAN SUPPLY UNITS WITH DIFFERENT HEIGHT, FRAMES, INSIDE DIAMETERS, ETC. PLEASE CONSULT OUR SALES DEPARTMENT FOR SPECIFICS.

## MATERIALS EMPLOYED

FRAME:	STAINLESS STEEL (1.4301 / SUS 304)
DETECTION COIL:	ALUMINUM
CONTROL BOX:	SHEET STEEL (St37)
COVER PLATE:	PP (POLYPROPYLENE)
SENSOR TUBE:	PP (POLYPROPYLENE)
CONNECTING FLANGE:	STAINLESS STEEL (1.4301 / SUS 304)
REJECT HOUSING:	STAINLESS STEEL (1.4301 / SUS 304)
REJECT FLAP:	STAINLESS STEEL (1.4301 / SUS 304)
SHAFT:	STAINLESS STEEL (1.4301 / SUS 304)
SEALING MATERIALS:	SILICONE / PTFE (TEFLON), FOOD GRADE

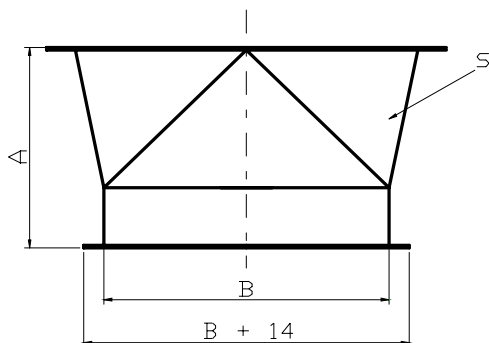
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ALL UNITS ARE AVAILABLE WITH OTHER OPTIONS SUCH AS COMPLETE UNIT, INCL. DETECTION COIL IN STAINLESS STEEL / PP - DIFFERENT SENSOR TUBE MATERIALS, ETC. PLEASE CONSULT OUR SALES DEPARTMENT.

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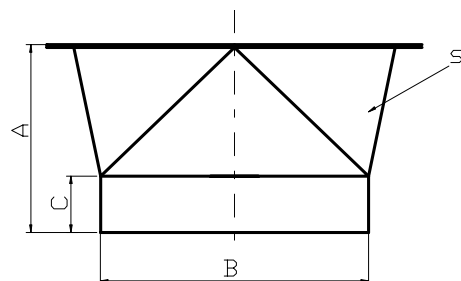
## OPTIONAL CONNECTING FLANGES FOR INLET AND OUTLET PORTS

STAINLESS STEEL (1.4301 / SUS 304)



	MODEL						
	80	100	120	150	200	250	300
A	60	60	60	100	100	150	150
B Ø	80	100	120	150	200	250	300
S	1	1,5	1,5	1,5	1,5	1,5	1,5

ALL DIMENSIONS IN MM



	MODEL	
	50	70
A	70	70
B Ø	50	70
C	30	30
S	1	1

ALL DIMENSIONS IN MM

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WE CAN DELIVER CUSTOM FLANGES AND PORTS ACCORDING TO CUSTOMERS REQUIREMENTS. PLEASE CONSULT OUR SALES DEPARTMENT FOR DETAILS.

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## INSTALLATION AND OPERATION INSTRUCTIONS

- THE UNIT NEEDS TO BE INSTALLED VERTICALLY. IN CASE OF A DEVIATION, PLEASE CONSULT WITH OUR APPLICATIONS DEPARTMENT.
- DO NOT INSTALL MOVING METAL PARTS SUCH AS GATES, AIRLOCKS NEAR THE INLET PORT.
- DO NOT EXCEED 0,5 M MAXIMUM FREE FALL HEIGHT FROM TOP OF UNIT.
- ASSURE SUFFICIENT FREE SPACE BELOW THE OUTLET PORTS. MATERIAL NEEDS TO BE ABLE TO FLOW FREELY.
- ASSURE A VIBRATION FREE OPERATING ENVIRONMENT. VIBRATIONS MAY CAUSE FALSE REJECTS.
- ASSURE ABSENCE OF EMFI (ELECTROMAGNETIC FIELD INTERFERENCE) CAUSED BY LARGE ELECTRIC MOTORS, HIGH VOLTAGE LINES ETC. OLDER FREQUENCY CONVERTERS AND SERVO DRIVES MAY CAUSE EMFI AS WELL.
- ASSURE A CONSTANT VOLTAGE SUPPLY TO THE DETECTOR. DO NOT CONNECT AND DISCONNECT TOGETHER WITH CONVEYING OR MATERIAL TRANSPORT SYSTEMS.
- PLEASE CONNECT THE SELF MONITORING FUNCTION.

## SENSITIVITY AND THROUGHPUT DIAGRAM

	MODEL								
	50	70	80	100	120	150	200	250	300
SENSITIVITY <sup>1)</sup> <i>STEEL BALL Ø MM</i>	0,3	0,45	0,5	0,6	0,7	0,9	1,0	1,5	1,75
THROUGHPUT <sup>2)</sup> L/H	13000	19000	22000	27000	33000	41000	55000	69000	83000

<sup>1)</sup> THE SENSITIVITY IS PROPORTIONAL TO THE DIAMETER OF THE APERTURE. THE SMALLER THE APERTURE, THE HIGHER THE SENSITIVITY. THE ABOVE STATED VALUES WERE OBTAINED IN THE CENTER OF THE APERTURE UNDER SIMULATED PRODUCTION CONDITIONS AND ARE VALID FOR MOST DRY POWDERS AND GRANULATES.

MAXIMUM OBTAINABLE SENSITIVITY VALUES CAN BE ESTABLISHED BY TESTING YOUR PRODUCT SAMPLE IN OUR LABORATORY.

SENSITIVITY VALUES FOR OTHER MATERIALS:

*STAINLESS STEEL*: FE SPHERE x 1 UP TO 2 – DEPENDENT ON THE ALLOY

*NON-FERROUS MATERIALS* SUCH AS BRONZE, COPPER, ALUMINUM: FE SPHERE x 1.2 UP TO 1.8 - DEPENDENT ON THE ALLOY.

<sup>2)</sup> THE ABOVE STATED VALUES ARE APPROXIMATE. ACTUAL VALUES DEPEND ON THE FLOWABILITY, BULK DENSITY AND METHOD OF INFEEED. PLEASE CONSULT OUR APPLICATIONS DEPARTMENT.

## CONTROL UNIT AMD 05 (Version 5.0)

**SINGLE BOARD DESIGN** WITH BUILT IN REGULATED POWER SUPPLY FOR RELIABLE PERFORMANCE AND EASE OF SERVICE.

**AUTO-SETUP-ROUTINE** WITH INTERFERENCE SIGNAL SUPPRESSION AND AUTOMATIC SENSITIVITY CALIBRATION.

**AUTOMATIC PRODUCT-EFFECT CANCELATION** WITH REAL TIME PRODUCT PARAMETER MEASUREMENT CAPABILITIES.

**MULTI-FILTERSYSTEM** USING DIGITAL FILTRATION FOR MAXIMUM STABILITY IN HARSH ENVIRONMENTS.

**AUTO-BALANCE** AUTOMATICALLY DETECTS AND COMPENSATES FOR ANY CHANGES IN THE SIGNAL DURING NORMAL OPERATION. (E.G. TEMPERATURE VARIATIONS)

**SELF MONITORING SYSTEM** ENSURES ALL COMPONENTS ARE FUNCTIONING PROPERLY. IN CASE OF A FAULT, RELAY OUTPUTS ARE AVAILABLE AS WELL AS A ALPHANUMERIC DISPLAY ON SELECT MODELS.

**NARROW DETECTION ZONE** PROVIDES AN ACCURATE LOCATION OF THE METALLIC PARTICLE IN THE DETECTION FIELD ALLOWING PRECISE SEPARATION.

**TOUCHPAD CONTROLS** MODERN DESIGN. RUGGED TOUCHSCREEN FOIL WITH ERGONOMIC CONTROLS.

**4 BUTTON TOUCHPAD CONTROLS** SUPPORTED BY EASY TO UNDERSTAND MENUS FAST ACCESS TO ALL OPERATING PARAMETERES. USER SELECTABLE DIALOG LANGUAGE.

**4-LINE BACK-LIT LCD DISPLAY** WITH METAL SIGNAL INDICATION. ADDITIONAL LED INDICATOR LAMPS ARE BUILT IN TO INDICATE METAL DETECTION OR FAULTS.



C E

**2-LEVEL PASSWORD PROTECTION** WITH INTERCHANGEABLE CODE NUMBERS.

**METAL COUNTER** CAN BE DISPLAYED ON THE LCD SCREEN OR INTERFACED WITH A PRINTER OVER A SERIAL INTERFACE.

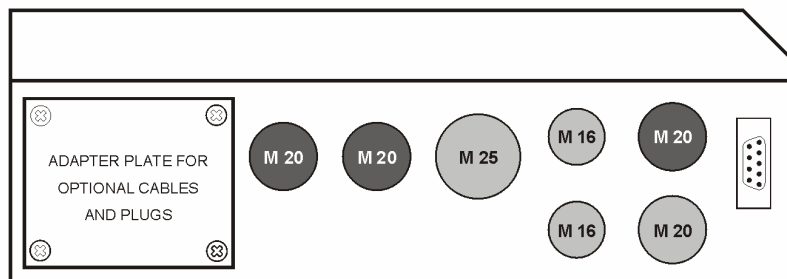
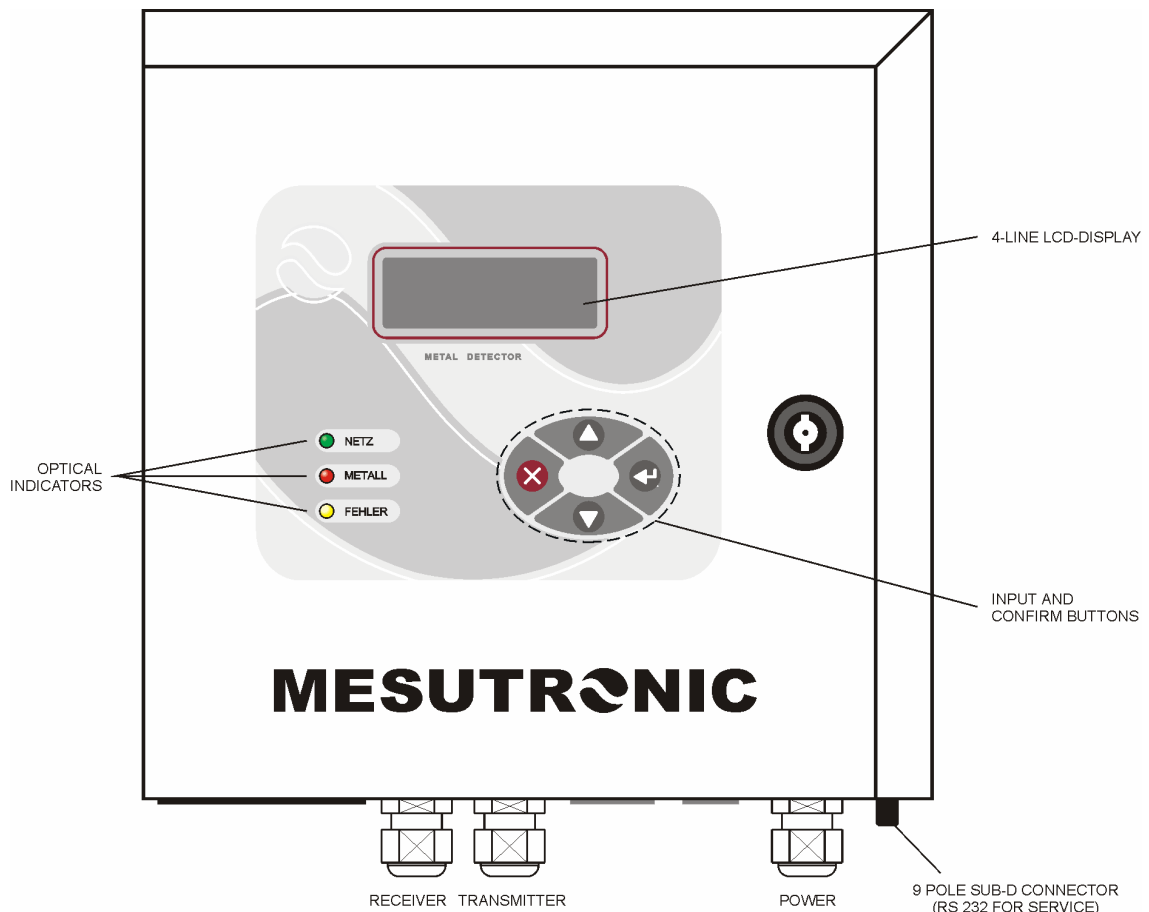
**PRODUCT STORAGE MEMORY BACKUP** FOR UP TO 6 INDIVIDUAL PRODUCTS. EACH PRODUCT HAS A COMPLETE SET OF ADJUSTMENT DATA ASSIGNED, SUCH AS SENSITIVITY, REJECT TIME ETC. THE DISPLAY OF TIME RELEVANT DATA IS IN REAL-TIME. INDIVIDUAL PRODUCT NAMES CAN BE STORED AS WELL.

**METAL DETECTOR NETWORK AND REMOTE SERVICE** EVERYTHING IS DO-ABLE! SEVERAL OPTIONAL SOFTWARE-PACKAGES ARE AVAILABLE EXAMPLE: WITH THE BUILT-IN CAN-BUS-DATAPORT A NETWORK OF UP TO 63 METAL DETECTORS / SEPARATORS CAN BE OPERATED. THE UNITS CAN THEN BE REMOTE CONTROLLED AND OPERATED VIA A CENTRAL PC. ALSO REMOTE DIAGNOSIS, PARAMETER CHANGE AND SOFTWARE UPDATES VIA MODEM ARE POSSIBLE.

**SERIAL DATA PORTS** FOR DIFFERENT TASKS. THE DETECTOR IS EQUIPPED WITH 3 SERIAL DATA PORTS. ONE OF THE PORTS ( RS 232 ) IS RESERVED FOR FACTORY SERVICE ( PRODUCT DATA PROTECTION, LOCAL SOFTWARE UPDATES ETC.) THE OTHER 2 PORTS ARE AVAILABLE FOR PRINTERS AND SUCH. THE PROTOCOL LAYOUT CONFORMS TO ISO 9000 AND HACCP GUIDELINES. BI-DIRECTIONAL DATA COMMUNICATION WITH CUSTOMER'S SPS OR PC SYSTEMS IS AVAILABLE. ( OPTIONAL SOFTWARE PACKAGE )

**QUALITY** SMD (SURFACE MOUNTED DEVICES) HAVE BEEN USED IN THE PRODUCTION OF THE CONTROLS. THEY NOT ONLY OFFER A COMPACT DESIGN, BUT ALSO PROVIDE A HIGHER QUALITY AND MORE ROBUST PERFORMANCE UNDER HARSH CONDITIONS. ALL MESUTRONIC PRODUCTS MEET THE REQUIREMENT OF EN, DIN, VDI/VDE, UVV AND CE REGULATIONS.

## CONTROLS



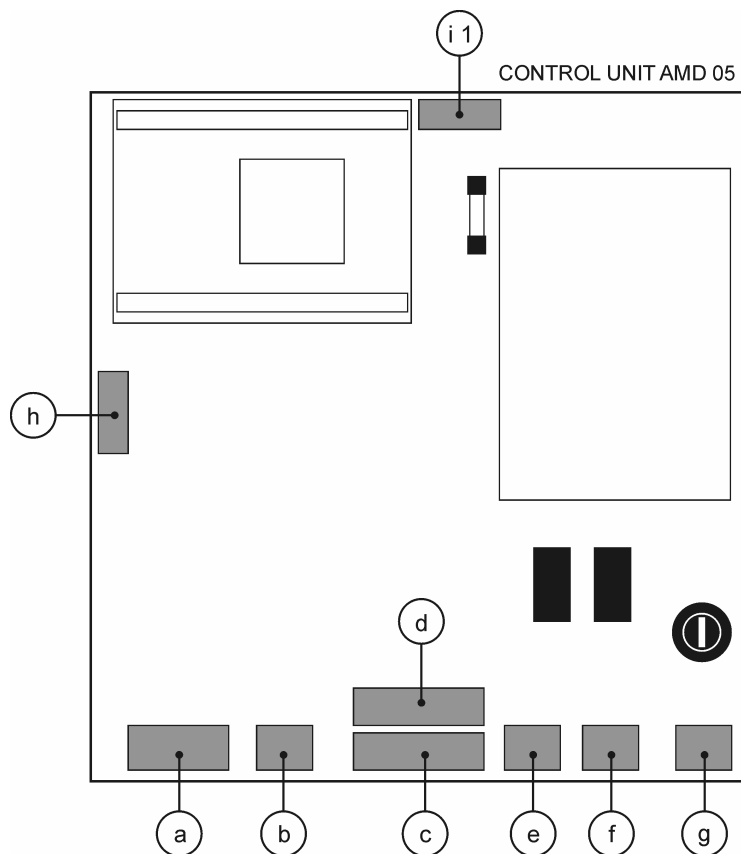
- CABLE ENTRY - USED BY THE MANUFACTURER
- CABLE ENTRY - TO BE USED BY THE CUSTOMER

## TECHNICAL DATA

POWER SUPPLY	: 100 – 240 V AC, 50/60 HZ
CURRENT CONSUMPTION	: MAX. 0,75 A
FUSE	: 315 MA (SLOW BLOW)
TYPE OF PROTECTION	: IP 54
WORKING TEMPERATURE RANGE	: -10 °C TO +50 °C
STORAGE TEMPERATURE RANGE	: -10 °C TO +60 °C
REL. HUMIDITY	: UP TO 100 %
CONVEYING SPEED	: DROP THROUGH
REJECT DURATION	: 0,2 TO 10 SEC. (ADJUSTABLE)
POWER CABLE	: APP. 1,8 M CABLE WITH PLUG (TWO POLE AND EARTHING PIN) (US-VERSION WITH US-STANDARD PLUG)
PAINT	: RAL 1015 = CREAM
AIR SUPPLY	: 5 BAR (AIR PLUG 7,2)
AIR CONSUMPTION	: < 0,2 LITERS PER REJECT
BULK MATERIAL SIZE	: ≤ Ø 10 MM

OTHER VERSIONS AVAILABLE

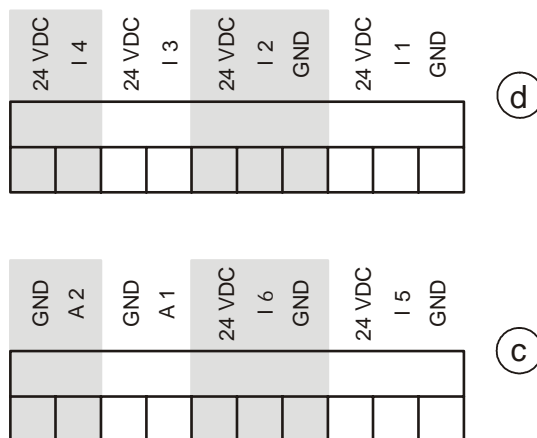
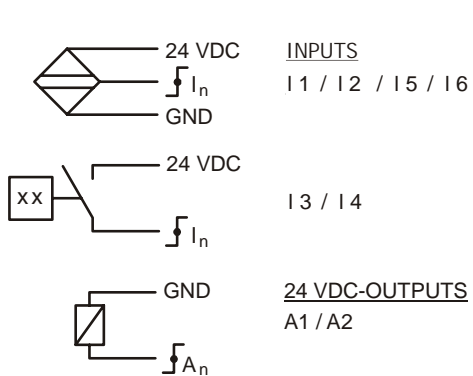
# INPUTS AND OUTPUTS



a RECEIVER + b TRANSMITTER +  
i 1 SERIAL DATA PORT USED BY MANUFACTURER.

## c + d FUNCTION BLOCK

### CONNECTION EXAMPLES



INPUTS AND OUTPUTS ARE USED ACCORDING TO PRODUCT REQUIREMENTS.  
 MAX. LOAD FOR ALL INPUTS AND OUTPUTS !  $I_{TOTAL} = 300 \text{ mA CUMULATIVE !}$

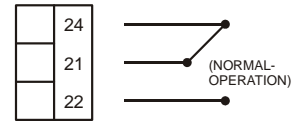
### STANDARD LAYOUT

- |   |                                |
|---|--------------------------------|
| I 1 INITIATOR "NORMAL POSITION" (REJECT GATE) | I 5 TEST BUTTON                |
| I 2 INITIATOR "REJECT POSITION" (REJECT GATE) | I 6 NOT CONNECTED              |
| I 3 PRESSURE MONITOR                          | A 1 SOLENOID REJECT GATE       |
| I 4 OFFLINE SWITCH                            | A 2 UNIT OPERATIONAL INDICATOR |

## INPUTS AND OUTPUTS

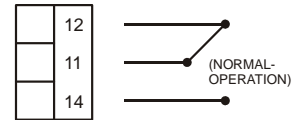
### e RELAY 2 (OPERATIONAL)<sup>1)</sup>

- ◆ FLOATING RELAY-CHANGE OVER CONTACT ACTUATED BY SELF MONITORING SYSTEM  
MAX. CONTACT LOAD : 250 V / 3 A



### f RELAY 1 (METAL)<sup>1)</sup>

- ◆ FLOATING RELAY-CHANGE OVER CONTACT ACTUATED WHEN METAL IS DETECTED  
MAX. CONTACT LOAD : 250 V / 3 A  
PULSE DURATION (AUTO-RESET) : 0,1 SEC. TO 10 SEC. (ADJUSTABLE)  
PULSE DURATION (RESET BY HAND) : PERMANENT SIGNAL UNTIL RESET-BUTTON IS PRESSED



### g POWER SUPPLY

- ◆ 100 – 240 V AC, 50/60 Hz, CURRENT CONSUMPTION: MAX. 750 MA  
OTHER VERSIONS AVAILABLE



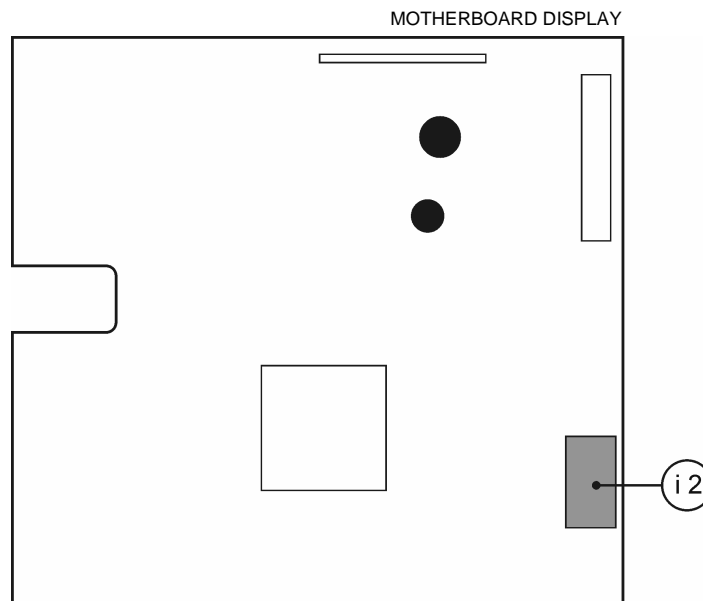
### h CAN – BUS DIGITAL INTERFACE

### i 2 SERIAL DIGITAL INTERFACES

- ◆ 1 x AS SELECTED: RS 232, 422, 485  
( LAID OUT FOR RS 232, UNLESS OTHERWISE SPECIFIED )
- ◆ 1 x ONLY FOR RS 232

#### 1) STANDARD PROGRAMMING

OTHER GIVEN OPERATIONS ARE POSSIBLE  
(PLEASE CONTACT OUR APPLICATION TEAM)



**MESUTRONIC Gerätebau GmbH**

A TEAM OF SPECIALISTS DEDICATED TO DEVELOP, MANUFACTURE AND MARKET THE WORLD'S FINEST ELECTRONIC METAL DETECTION AND SEPARATION EQUIPMENT FOR ALL INDUSTRIES. IT IS OUR GOAL TO PROVIDE THE OPTIMUM SOLUTION TO MEET EVERY CRITERIA. MANY YEARS OF EXPERIENCE PROVIDING HUNDREDS OF DETECTION COILS WITH VARIOUS CONTROLS AS WELL AS A MULTITUDE OF MECHANICAL SEPARATING AND SORTING COMPONENTS, ARE AT YOUR DISPOSAL. WE POOL OUR KNOWLEDGE AND EXPERIENCE TO OFFER A SOLUTION TO VIRTUALLY ANY APPLICATION.

„WHEN OTHERS SAY NO, WE SAY LETS GO!“

LET OUR TEAM PROVIDE YOU WITH THE OPTIMUM SOLUTION FOR YOUR METAL CONTAMINATION.

**Our knowledge is our strength**

**MESUTRONIC**

**Strength is always being available**

**MESUTRONIC®**

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SUBJECT TO MODIFICATION!