

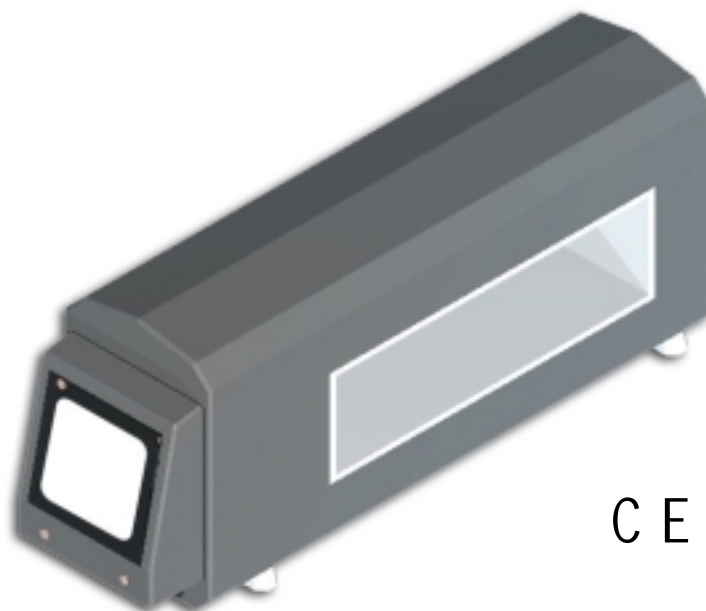
TECHNICAL DATA SHEET
HIGH-FREQUENCY METAL DETECTOR

METRON® 05 CI

RELIABLE DETECTION OF **ALL METALS** (ENCAPSULATED OR FREE)

- FERROUS & NON-FERROUS
- NON-MAGNETIC STEEL
- ALUMINIUM
- COPPER
- BRASS
-

CLOSED TUNNEL TYPE DETECTOR WITH INTEGRAL
CONTROL BOX SUITABLE FOR INSTALLATION IN BELT CONVEYORS,
GRAVITY OR VACUUM/PRESSURE CONVEYING LINES,



MICRO PROCESSOR TECHNOLOGY INCLUDING DIGITAL 2 CHANNEL SIGNAL PROCESSING,
ASSURING RELIABLE DETECTION EVEN AT CONVEYING SPEEDS OF UP TO 30 M/SEC.

INDUSTRIES

- FOOD INDUSTRY
- TOILETRIES
- CHEMICAL/PHARMACEUTICAL INDUSTRY
-

APPLICATIONS

- PRODUCT INSPECTION
(TO MEET THE REQUIREMENT
OF ISO 9000 AND HACCP)
- MACHINERY PROTECTION

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



STANDARD SUPPLY

- DETECTOR HEAD WITH INTEGRAL CONTROL BOX
- INSTALLATION ACCESSORIES
- MANUAL INCLUDING INSTALLATION ADVISE, WIRING DIAGRAM AND SPARE PART LIST
- EC-CONFIRMING DECLARATION

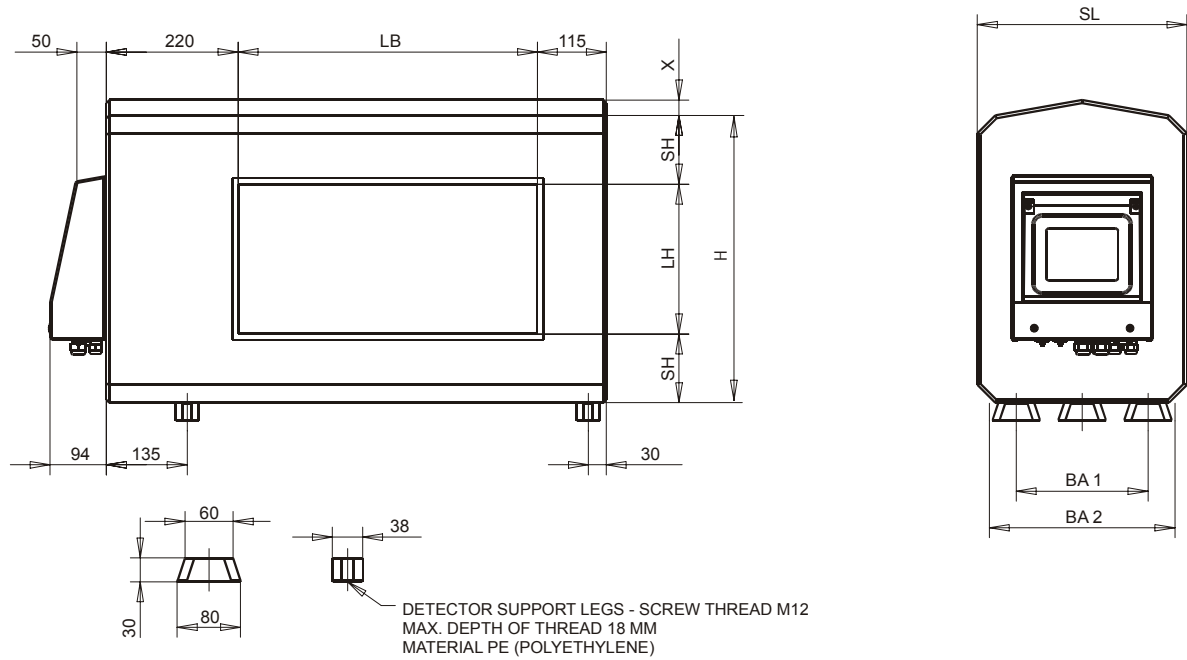
OPTIONAL EQUIPMENT

- METAL DETECTOR-TEST SPHERES
 - METAL SPHERE(S) ENCASED IN PLASTIC TO VERIFY SENSITIVITY
 - SEVERAL SIZES AND TYPES – (IF DESIRED WITH CERTIFICATE)
- WARNING DEVICE
 - BEACON
 - BUZZER
 - BEACON WITH SIREN
- HARD COPY PRINTER
 - WITH RS 232 CONNECTION (MAX. CABLE LENGTH OF 100 METERS)
 - WITH RS 485 CONNECTION (MAX. CABLE LENGTH OF 1200 METERS)
- SOFTWARE SOLUTIONS
 - MESUSET (OPERATION OF DETECTOR VIA LAPTOP)
 - MESUNET (NETWORK INTEGRATION AND REMOTE MAINTENANCE)
 - AND MORE
- POWER CONDITIONER
 - MAGNETIC VOLTAGE STABILIZER
 - ELECTRONIC VOLTAGE STABILIZER
- REMOTE RESET DEVICE
- SOLUTIONS WITH BELT CONVEYORS AND REJECT MECHANICS TURN KEY
- REJECT SYSTEMS
 - PUSHER SYSTEMS
 - FLAP SYSTEMS
 - CUT-OUT DEVICE
 - AND MORE
- VISUAL MARKERS
 - INK JET SYSTEM
 - BAG DROP SYSTEM
 - AND MORE
- CONVEYOR CONTROLS
 - CONVEYOR REVERSE
 - AND MORE

OTHER VERSIONS

- EXPLOSION PROOF
- CUSTOM PAINT
- SPECIAL POWER SUPPLY
- HIGH TEMPERATURE
- ALUTRON (SUPPRESSION OF INTERFERENCE SIGNALS FROM METALISED FOILS OR ALUMINIUM VAPOR FOILS)
- DETECTOR HEAD WITH REMOTE CONTROL BOX

DIMENSIONS

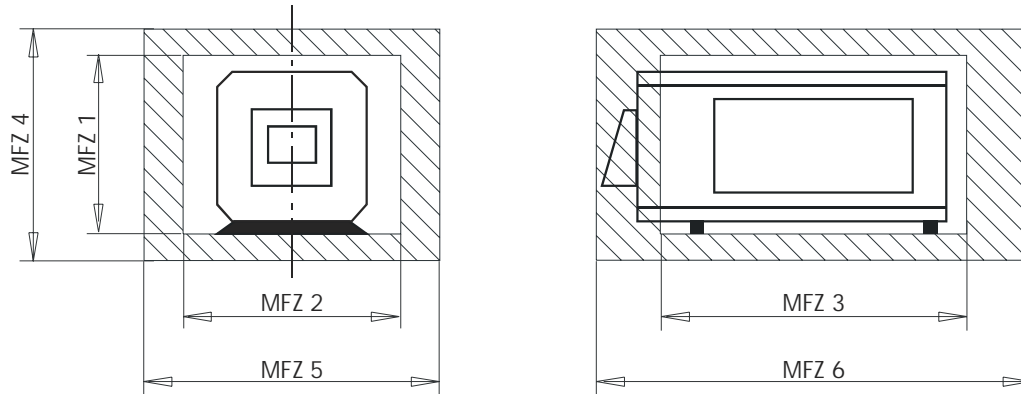


LB (APERTURE WIDTH): AVAILABLE FROM 50 TO 2000MM IN 50MM INCREMENTS.

LH APERTURE HEIGHT	SL DETECTOR LENGTH	SH TOP/BOTTOM THICKNESS	DISTANCE BETWEEN BORE CENTRES		NUMBER OF FASTENER BORES	MARK X
			BA 1	BA 2		
50	260	150	130	-	4	18
75	260	130	130	-	4	18
100 - 150	260	115	130	-	4	18
175 - 200	300	115	170	-	4	22
225 - 250	350	115	220	-	6	26
275 - 300	400	115	230	-	6	27
325 - 350	450	115	280	-	6	31
375 - 400	500	115	110	330	8	36
425 - 450	550	115	190	380	10	40
475 - 500	600	115	215	430	10	44
550 - 600	650	115	240	480	10	49

ALL DIMENSIONS IN MM

METAL FREE ZONE (MFZ)



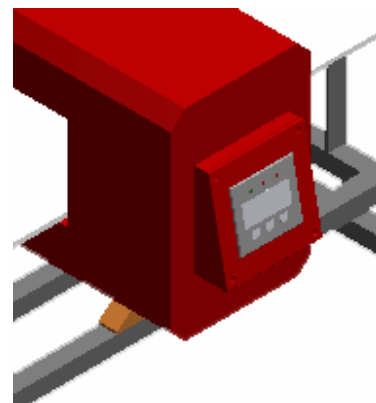
CALCULATING THE „METAL FREE ZONE“ ...

FOR NON-MOVING METALS

MFZ 1 = H + 60 MM
 MFZ 2¹⁾ = SL + LH
 MFZ 3 = LB + LH

FOR MOVING METALS

MFZ 4 = 4 LH
 MFZ 5¹⁾ = SL + 3,5 LH
 MFZ 6 = LB + 3 LH



¹⁾ POSITION THE DETECTOR APERTURE IN THE MIDDLE OF THE „METAL FREE ZONE“
 FOR THE OTHER DIMENSIONS: POSITION THE DETECTOR SYMMETRICAL IN RELATION TO THE APERTURE.

THE CALCULATED DIMENSIONS ARE TO BE TAKEN AS ORIENTATION VALUES (MINIMUM VALUES WHICH SHOULD BE EXCEEDED.) AND HAVE TO BE VERIFIED BY THE MANUFACTURER, DEPENDING ON THE PROJECT. MAKE THE „METAL FREE“ ZONE AS LARGE AS POSSIBLE. „NON-MOVING“ METALS ARE CONVEYOR FRAMES AND COIL SUPPORTS. (BUT NOT THE TRAVERSE CONNECTIONS BETWEEN SUCH EQUIPMENT!)

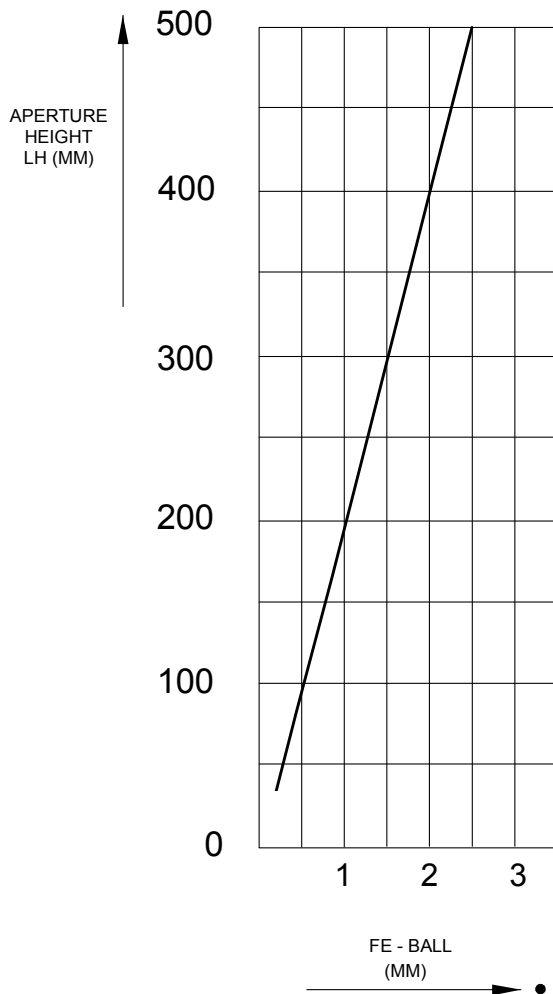
MOVING METALS ARE DIVERTER AND DRIVE ROLLERS OR FOR EXAMPLE THE AXIS OF A REJECT PUSHER. PAY PARTICULAR ATTENTION TO MOVING GATES AND MACHINES OR MACHINE PARTS WHICH CHANGE THEIR DISTANCE TO THE METAL DETECTOR OR WHICH MOVE IN THE VICINITY OF THE APERTURE.

IF THE METAL FREE ZONE CANNOT BE MAINTAINED DUE TO SPACE RESTRICTIONS FALSE REJECTS AND OR REDUCED SENSITIVITY CAN BE EXPECTED.

IN ADDITION, PLEASE OBSERVE OUR „ HINTS FOR THE INSTALLATION OF SEARCH COILS“

SENSITIVITY DIAGRAM

VALID IF $LB \leq 1,5 \times LH$



THE SENSITIVITY DEPENDS ON THE APERTURE SIZE I.E. THE SMALLER THE APERTURE HEIGHT THE GREATER THE SENSITIVITY.

BASE SENSITIVITY

THE SENSITIVITIES SHOWN IN THE ADJACENT DIAGRAM WERE ACHIEVED IN THE APERTURE CENTRE UNDER SIMULATED PROCESS CONDITIONS - POSSIBLE PRODUCT EFFECTS HAVE NOT BEEN CONSIDERED.

SENSITIVITY UNDER OPERATING CONDITIONS

IF YOU SEND US SOME PRODUCT SAMPLES, WE WOULD BE PLEASED TO DO A TEST AND QUOTE THE BEST SENSITIVITY.

TO CALCULATE SENSITIVITY FOR OTHER METALS USE THE FOLLOWING MULTIPLICATION FACTOR.

VA (STAINLESS STEEL) = FE-BALL X 1 TO 2
(FACTOR DEPENDS ON THE METAL ALLOY)

CU, ALU, BRASS... = FE-BALL X 1,2 TO 1,8
(FACTOR DEPENDS ON THE METAL TYPE)

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.

MULTI-FILTER SYSTEM 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 ALPHA-NUMERIC 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.

2-LEVEL PASSWORD PROTECTION WITH INTER-CHANGEABLE CODE NUMBERS.

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



C E

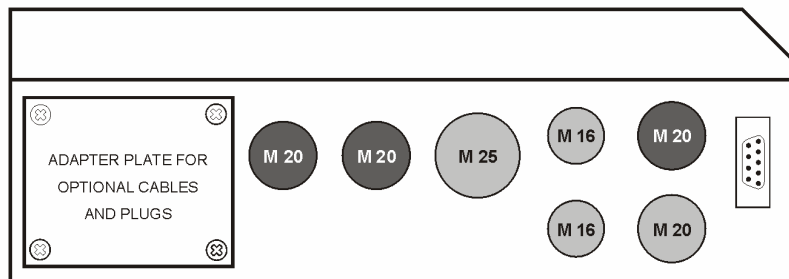
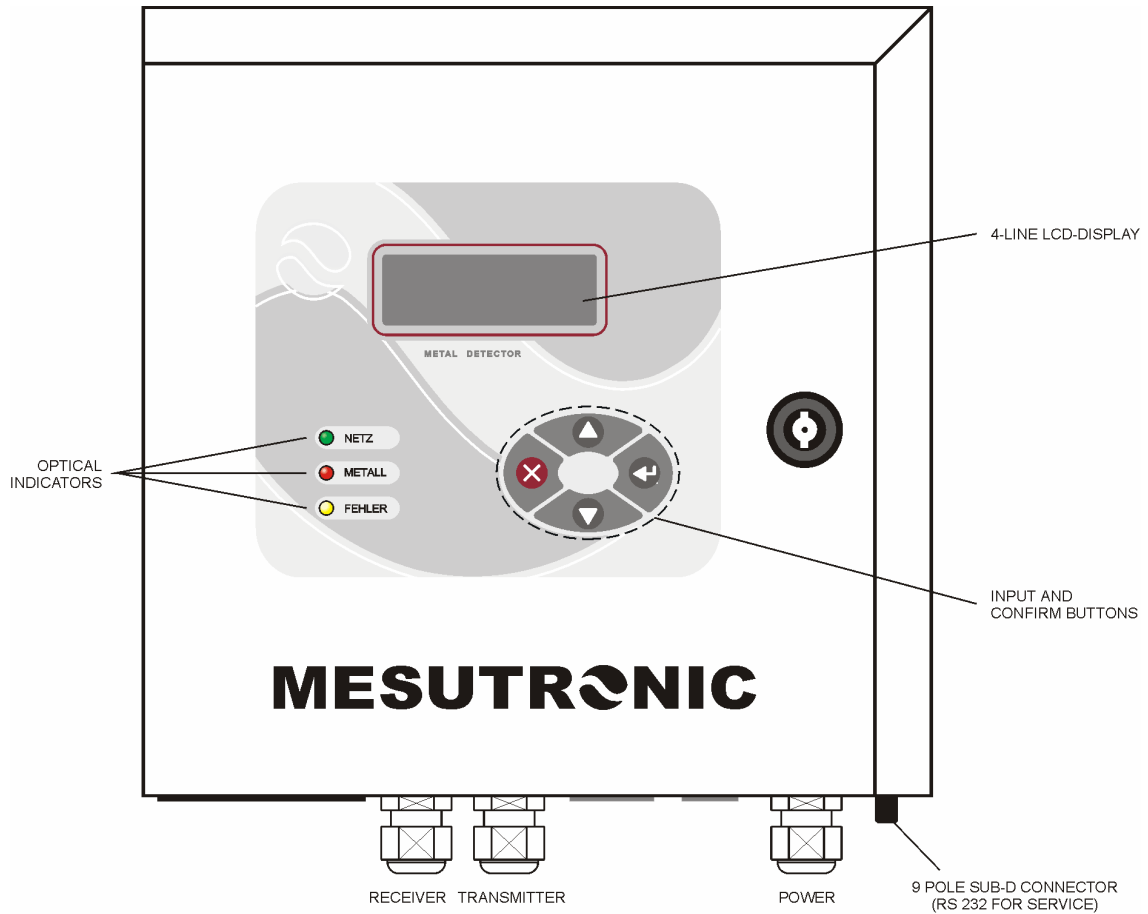
PRODUCT STORAGE MEMORY BACKUP FOR UP TO 50 INDIVIDUAL PRODUCTS. EACH PRODUCT HAS A COMPLETE SET OF ADJUSTMENT DATA ASSIGNED, SUCH AS SENSITIVITY, REJECT TIME ETC. THE DISPLAY OF TIME RELEVANT DATA IS IN REAL-TIME. INDIVIDUAL PRODUCT NAMES CAN BE STORED AS WELL.

METAL DETECTOR NETWORK AND REMOTE SERVICE EVERYTHING IS DO-ABLE! SEVERAL OPTIONAL SOFTWARE-PACKAGES ARE AVAILABLE EXAMPLE: WITH THE BUILT-IN CAN-BUS-DATA PORT 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



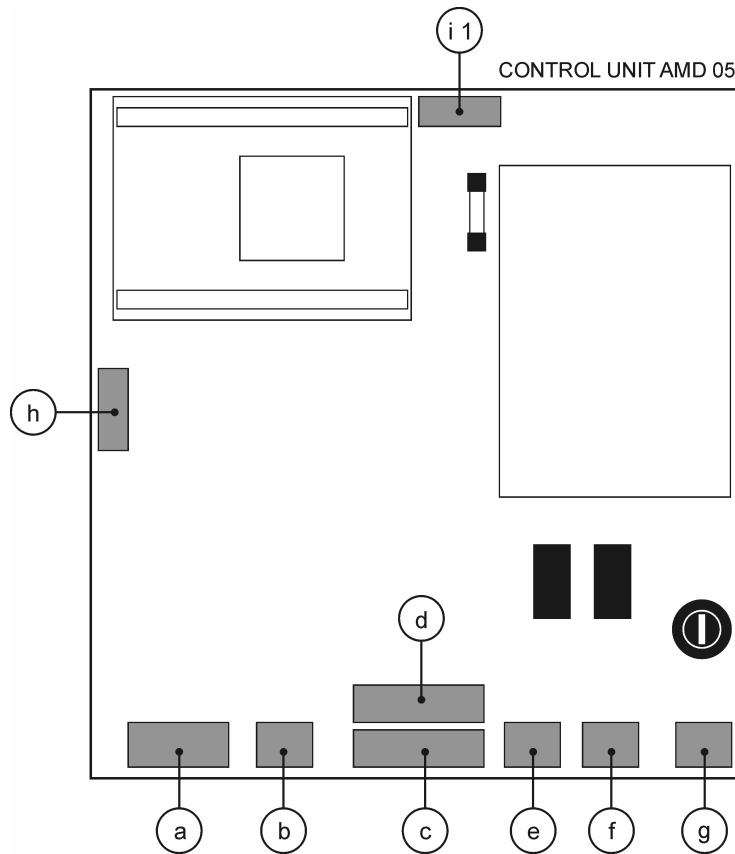
- CABLE ENTRY - USED BY THE MANUFACTURER
- CABLE ENTRY - TO BE USED BY THE CUSTOMER

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	: 0.05 TO 1.5 M/SEC.
MATERIALS	: DETECTOR HEAD AND CONTROL BOX MADE OF CARBON STEEL, SENSING AREAS MADE OF DUROPLEX
PAINT	: RAL 3027 = RASPBERRY RED
INTERCONNECTING CABLES	: DETECTOR COIL / CONTROL BOX = 2 M LONG
POWER CABLE	: APP. 1,8 M CABLE WITH PLUG (TWO POLE AND EARTHING PIN) (US-VERSION WITH US-STANDARD PLUG)

OTHER VERSIONS AVAILABLE

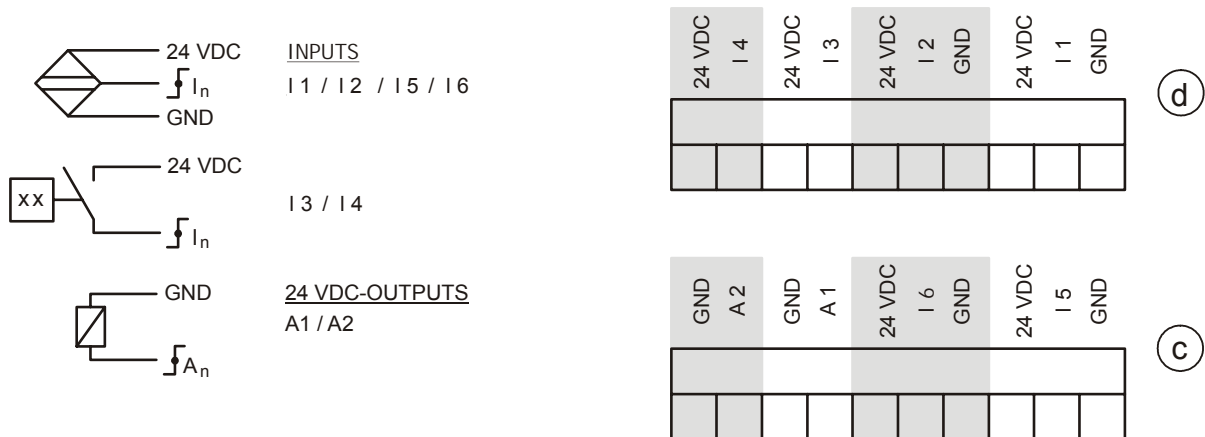
INPUTS AND OUTPUTS



(A) RECEIVER + (B) TRANSMITTER +
 (I1) 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 mA CUMULATIVE !

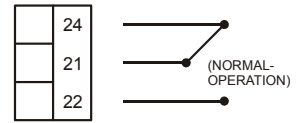
STANDARD LAYOUT

- I 1 INITIATOR "NORMAL POSITION" (REJECT GATE)
- I 2 INITIATOR "REJECT POSITION" (REJECT GATE)
- I 3 PRESSURE MONITOR
- I 4 TRIGGER - LIGHT GATE (IN)
- I 5 RPM SENSOR (SPEED MEASUREMENT)
- I 6 TRIGGER - LIGHT GATE (OUT)
- A 1 SOLENOID REJECT GATE
- A 2 UNIT OPERATIONAL INDICATOR

INPUTS AND OUTPUTS

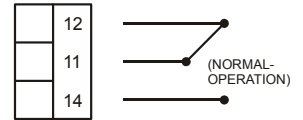
E RELAY 2 (Operational)¹⁾

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



F RELAY 1 (METAL)¹⁾

- ◆ 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



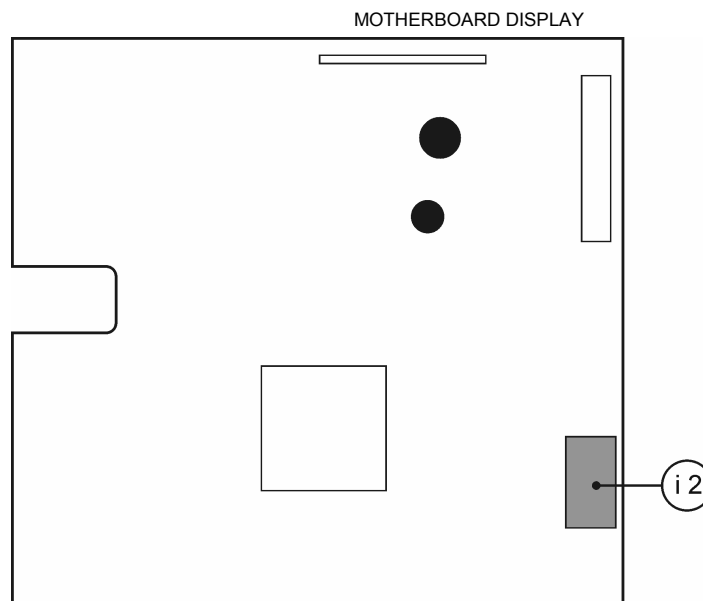
H CAN – BUS DIGITAL INTERFACE

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®

Gerätebau GmbH
Höllmannsried 31
D-94259 Kirchberg, Wald
Germany
Telefon +49 (0) 9927 - 9410-0
Telefax +49 (0) 9927 - 1732
E-mail sales@mesutronic.de
Internet www.mesutronic.de

SUBJECT TO MODIFICATION!