

# METAL DETECTOR

## METRON 05 ProfiLine

RELIABLE DETECTION OF ALL TYPES OF METALS:

- FERROUS
- STAINLESS STEEL
- ALUMINUM
- COPPER
- BRASS

RELIABLE DETECTION OF FREE OR ENCAPSULATED CONTAMINANTS.

Version 08/19

**ELECTRONIC METAL DETECTOR FOR THE INSPECTION OF WEBS.**



### INDUSTRIES

- TEXTILE INDUSTRY
- PLASTICS AND RUBBER INDUSTRY

### APPLICATION

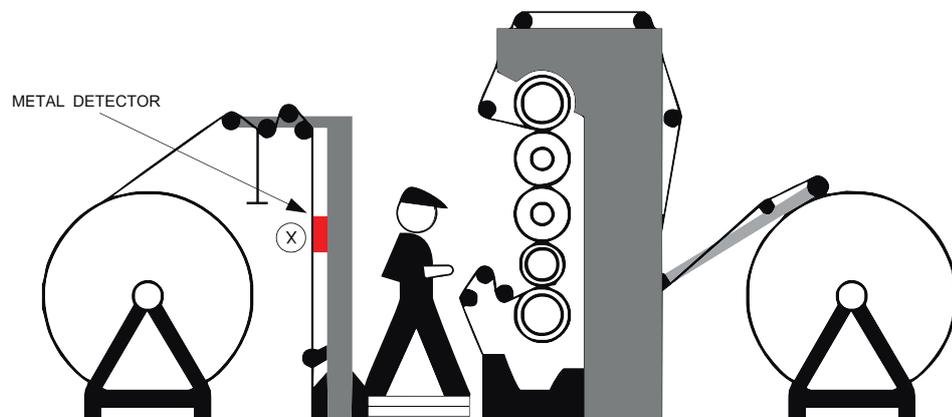
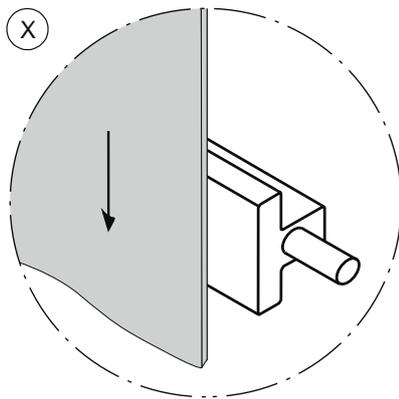
- PRODUCT INSPECTION
- MACHINERY PROTECTION:  
CALENDERS  
FABRIC SHREDDING /  
FABRIC CLEANING MACHINES  
FORM PRESSES



GLOBAL. MAGNETIC. FORCE.™

## FEATURES

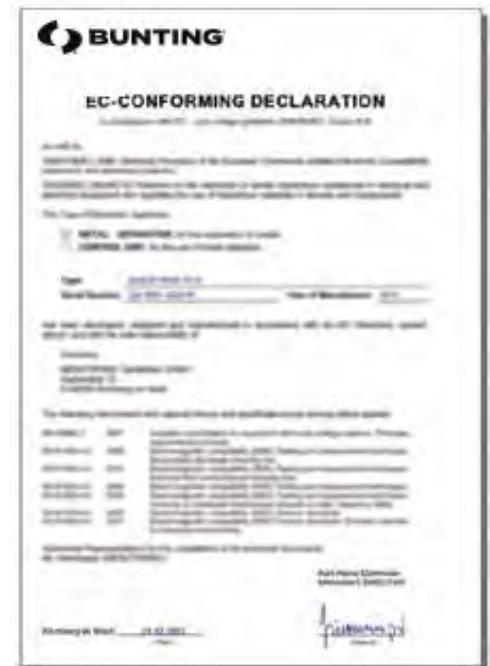
- MINIMAL "METAL FREE ZONE" REQUIRED FOR INSTALLATION
- SPECIAL COIL CONFIGURATIONS MAKE THE SYSTEM IMPERVIOUS TO VIBRATIONS OR EXTERNAL EFFECTS
- ANTI-STATIC SENSOR SURFACE
- EASY TO OPERATE
- SELF MONITORING ELECTRONICS
- EXCELLENT SENSITIVITY TO FERROUS, NON-FERROUS AND STAINLESS STEEL
- DESIGNED FOR INDUSTRIAL USE
- INTEGRATED WEAR PROTECTION EDGE
- THE DATA SHEET CONTAINS ADDITIONAL INFORMATION AS TO THE AMD 05 (VERSION 5.2) ELECTRONICS



METAL DETECTOR METRON 05 ProfiLine IN USE.

## STANDARD SCOPE OF DELIVERY

- DETECTION COIL
- ELECTRONICS IN HOUSING
- CONNECTING CABLES
- USER MANUAL INCL. INSTALLATION INSTRUCTIONS, WIRING DIAGRAM AND SPARE PARTS LIST IN SEVERAL LANGUAGES
- EU CONFORMITY DECLARATION



## OPTIONS

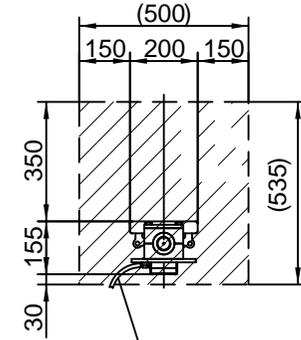
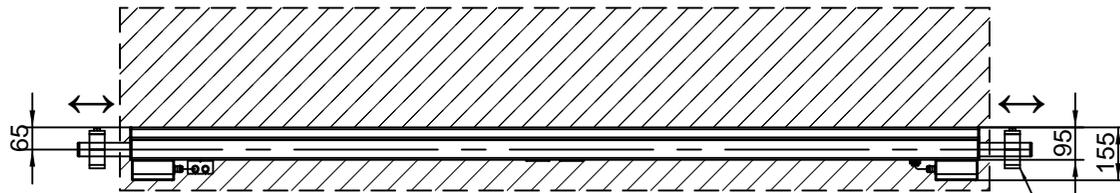
- METAL DETECTOR TEST SPHERE - A METAL SPHERE EMBEDDED IN CREDIT CARD SIZE PLASTIC TO CONFIRM PROPER FUNCTION. (SEVERAL METAL TYPES AND SIZES, IF DESIRED WITH CERTIFICATE)
- OPTICAL AND ACOUSTICAL SIGNAL UNITS - BEACON  
- BUZZER  
- BEACON WITH SIREN
- REMOTE RESET DEVICE
- SOFTWARE SOLUTIONS - mesuNET pro (DETECTOR NETWORKING AND REMOTE MONITORING)

## SPECIAL VERSIONS

- CUSTOMER SPECIFIC SUPPLY VOLTAGE (FOR EXAMPLE 24 V DC)
- MULTIPLE FREQUENCY
- UNITS PAINTED TO CUSTOMER SPECIFIC COLOR CODE
- „NEUTRAL VERSION“ FOR OEM CUSTOMERS

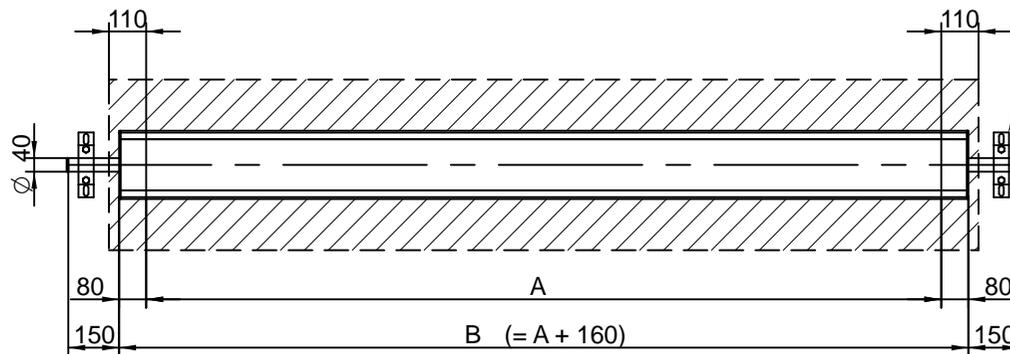
# DIMENSIONS

ALL DIMENSIONS IN MM

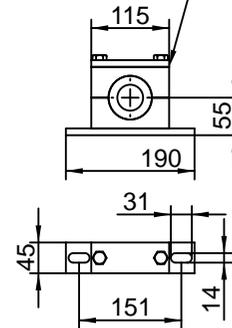


cable inlet

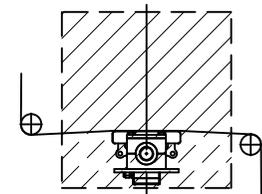
Option:  
mounting clamp



mounting clamp  
design 1  
V° 1,5m/s (90m/min) A rt.-Nr.: 350133  
design 2  
V > 1,5m/s (90m/min) Art.-Nr.: 350132



example of installation



Alle Maße in mm  
all dimensions in mm

Metal free area for non moving metals

A	effective sensing width	500 - 600 - 700 ...12000	mm
B = A + 160	Detector width	660 - 760 - 860 ...12160	mm

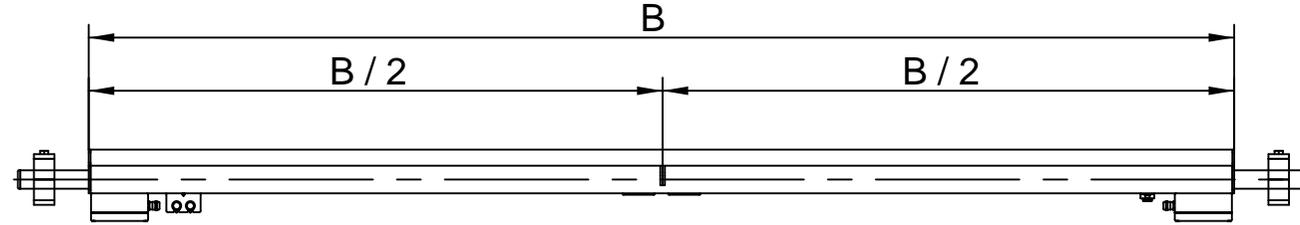
THE METAL DETECTOR IS TO BE POSITIONED IN THE CENTRE OF THE METAL FREE ZONE. THE VALUES ARE FOR REFERENCE PURPOSES AND SHOULD, IF POSSIBLE, BE INCREASED TO ENSURE OPTIMUM PERFORMANCE. FOR MOVING METAL THE METAL FREE ZONE IS TO BE INCREASED AND TO BE CONFIRMED BY A REPRESENTATIVE.

## DIMENSIONS

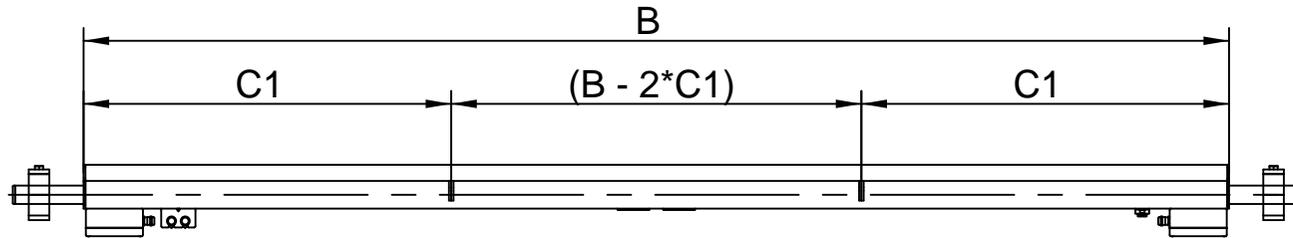
ALL DIMENSIONS IN MM

### ADDITIONAL SUPPORTS

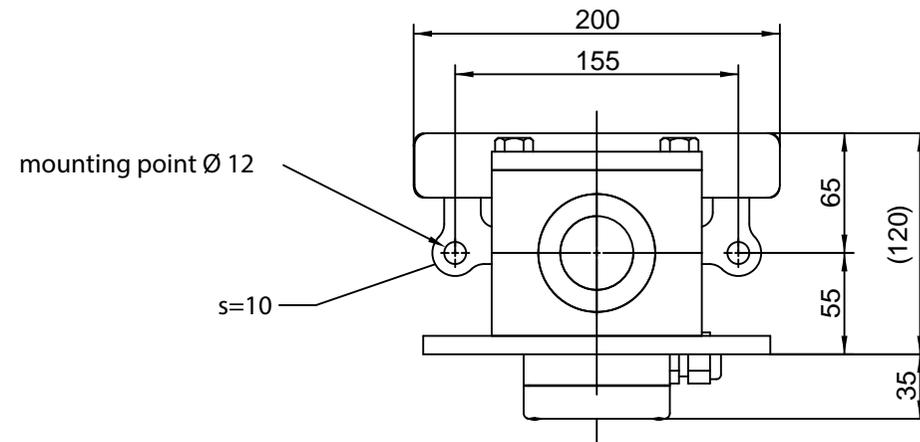
②  
from B = 3460 to B = 6060



from B ≥ 6160



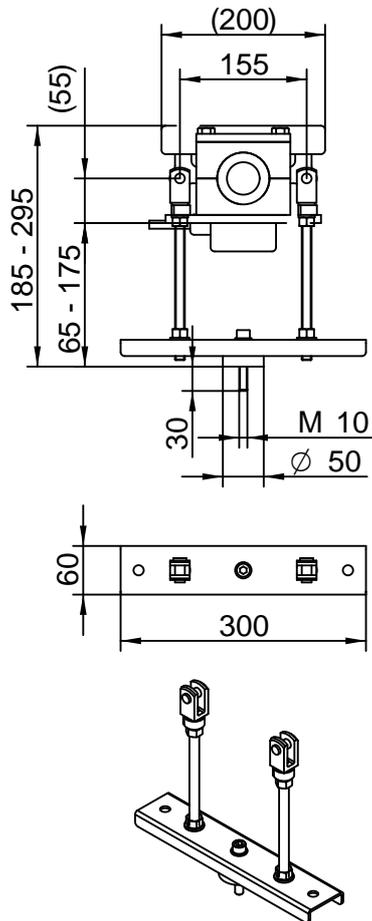
METRON 05 PR	
B [mm]	C1 (mm)
6160 to 7060	2000
7160 to 8060	2500
8160 to 9060	3000
9160 to 10060	3250
10160 to 11060	3500
11160 to 12160	3850



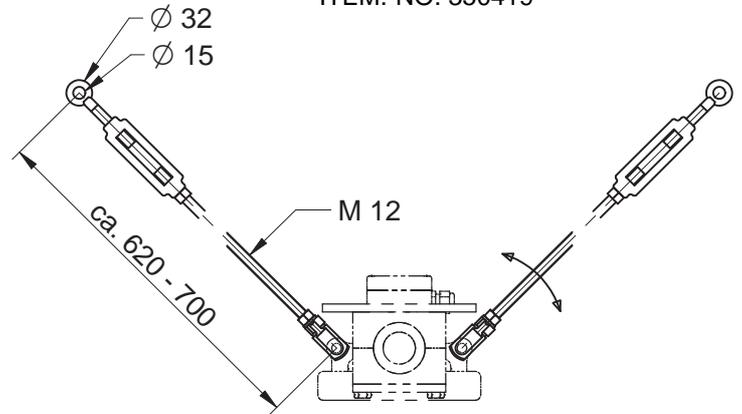
# DIMENSIONS

ALL DIMENSIONS IN MM

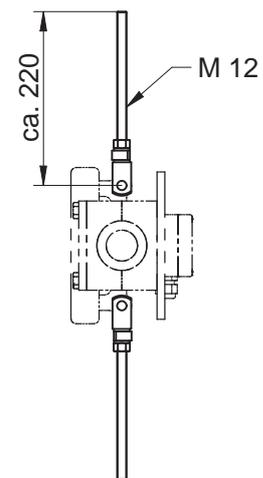
**EQUIPMENT 1 - RETAINING YOKE**  
ITEM.-NO. 350418



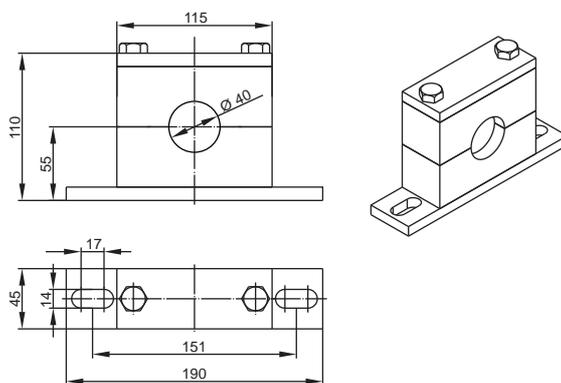
**EQUIPMENT 2 - SUSPENSION**  
ITEM.-NO. 350419



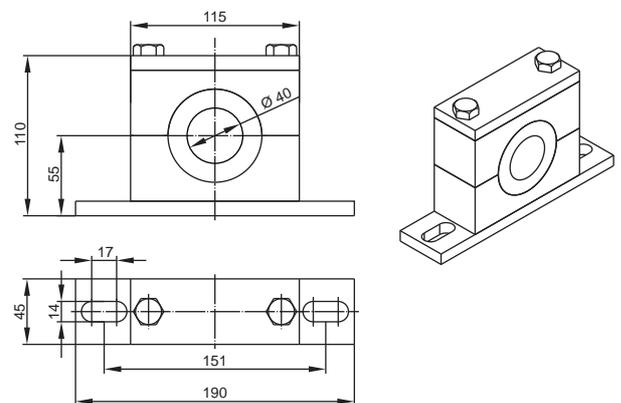
**EQUIPMENT 3 - SUSPENSION**  
ITEM.-NO. 350679



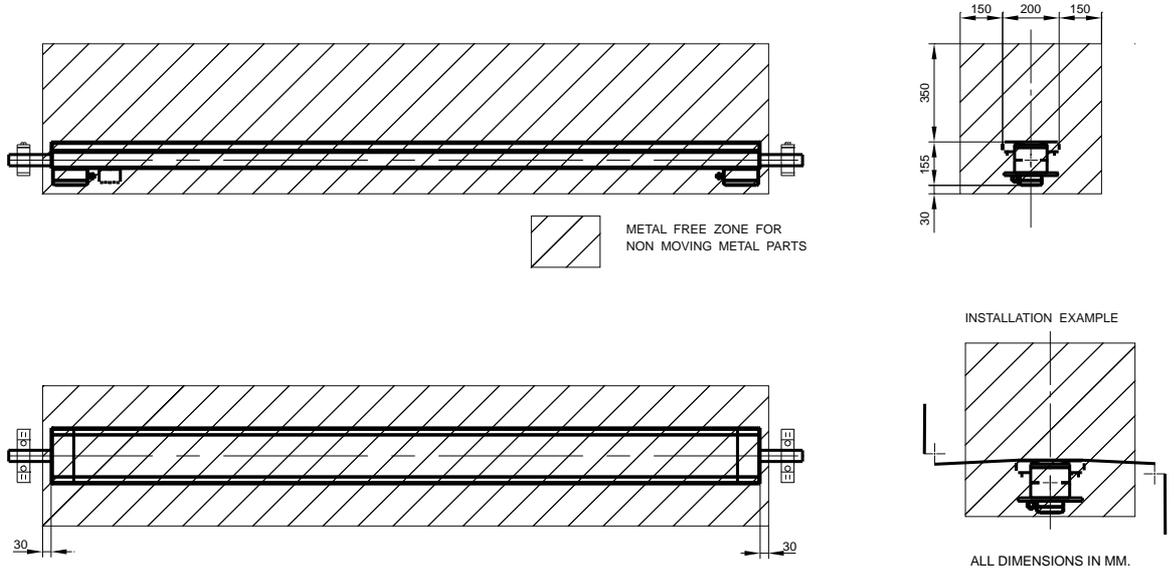
**MOUNTING BRACKETS VERSION 1**  
(Low Speed,  $v < 1,5$  m/s)



**MOUNTING BRACKETS VERSION 2**  
(High Speed,  $v \geq 1,5$  m/s)



### METAL FREE ZONE

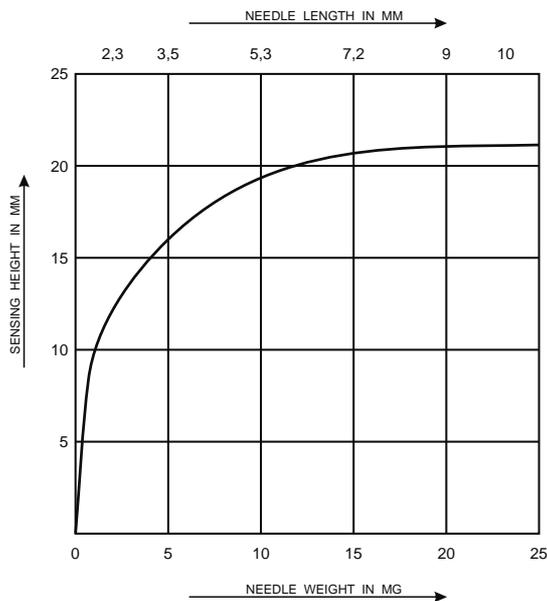


POSITION THE DETECTOR APERTURE IN THE MIDDLE OF THE „METAL FREE ZONE“.  
 THE STATED VALUES ARE TO BE TAKEN AS ORIENTATION VALUES (MINIMUM VALUES WHICH SHOULD BE EXCEEDED)  
 AND HAVE TO BE VERIFIED BY THE MANUFACTURER, DEPENDING ON THE PROJECT.

THE METAL FREE ZONE NEEDS TO BE EXTENDED IN CASE OF MOVING METAL PARTS AND NEED TO BE VERIFIED BY US FOR THE SPECIFIC PROJECT!

### SENSITIVITY DIAGRAM

THE SENSITIVITY IS DEPENDENT UPON THE DISTANCE BETWEEN THE METAL CONTAMINANT AND THE SENSING SURFACE.  
 THE CLOSER THE METAL IS TO THE SURFACE, THE GREATER THE SENSITIVITY.



TYPICAL SENSITIVITY CURVE FOR A 2,600 MM WIDE DETECTION COIL.

THE SENSITIVITIES STATED IN THE DIAGRAM HAVE BEEN ACHIEVED UNDER PRODUCTION CONDITIONS AND ARE INDICATIVE WITH NORMAL FABRICS. THE MATERIAL WAS CONTAMINATED WITH NEEDLE TIPS OF VARYING LENGTH FOR TEST PURPOSES. DIFFERING RESULTS THAN SHOWN IN THE DIAGRAM ARE POSSIBLE DUE TO THE RELATIVE POSITION "ORIENTATION EFFECT" OF THE NEEDLES TO THE DETECTOR APERTURE. EXTRAORDINARY STRONG PERIPHERAL DISTURBANCES MAY EFFECT THE SENSITIVITY, AS WELL AS ELECTRICALLY CONDUCTIVE FIBERS WHICH CAN CREATE A "PRODUCT EFFECT". IF SAMPLES ARE PROVIDED WE CAN TEST THEM IN OUR R&D FACILITY TO DETERMINE PROJECT SPECIFIC SENSITIVITIES.

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

VA (STAINLESS STEEL) = DIAGRAM VALUE x 1 TO 2  
 (FACTOR DEPENDS ON THE METAL ALLOY)

CU, ALU, BRASS... = DIAGRAM VALUE x 1.2 TO 1.8  
 (FACTOR DEPENDS ON THE METAL TYPE)

## CONTROL UNIT AMD 05 (VERSION 5.2)

*ADVANTAGES THAT WILL CONVINC YOU !*

**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 IMPORTANT COMPONENTS ARE FUNCTIONING PROPERLY. IN CASE OF A FAULT, RELAY OUTPUTS ARE AVAILABLE. FAULTS ARE DISPLAYED AS TEXT IN REAL TIME.

**NARROW DETECTION ZONE** CAN BE DETECTED, EVEN FOR METAL PARTICLES OF DIFFERENT SIZES, FOR PACKAGED MATERIAL A REJECT TRIGGER COUPLED WITH A LIGHT BARRIER MAY BE INSTALLED.

**TOUCHPAD CONTROLS** MODERN DESIGN. RUGGED TOUCH-SCREEN FOIL WITH ERGONOMIC CONTROLS.

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

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

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

**3-LEVEL PASSWORD** PROTECTION WITH INTER-CHANGEABLE CODE NUMBERS.



**PRODUCT STORAGE MEMORY BACKUP** FOR UP TO 500 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 DONE IN REAL TIME. INDIVIDUAL PRODUCT NAMES CAN BE STORED AS WELL.

**METAL DETECTOR NETWORK AND REMOTE SERVICE** EVERYTHING IS DOABLE! SEVERAL OPTIONAL SOFTWARE-PACKAGES ARE AVAILABLE. EXAMPLE: WITH THE BUILT-IN CAN-BUS-DATA PORT A NETWORK OF UP TO 125 METAL DETECTORS / SEPARATORS CAN BE OPERATED. THE UNITS CAN THEN BE REMOTE-CONTROLLED AND OPERATED VIA A CENTRAL PC. ALSO REMOTE DIAGNOSIS, PARAMETERCHANGE AND SOFTWARE UPDATES VIA MODEM ARE POSSIBLE.

**SERIAL DATA PORT** FOR DIFFERENT TASKS. THE METAL DETECTOR IS EQUIPPED WITH 1 SERIAL DATA PORT (RS 232). HOWEVER THIS PORT IS RESERVED FOR FACTORY SERVICE ACCESS SUCH AS ADJUSTMENT DATA LOGGING, SOFTWARE UPDATES ETC.) AS AN OPTION, THIS DATA PORT MAY ALSO BE USED BY THE CLIENT (SWITCHABLE). IT CAN BE USED TO DRIVE A LOCAL OR CENTRAL PROTOCOL PRINTER. 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).

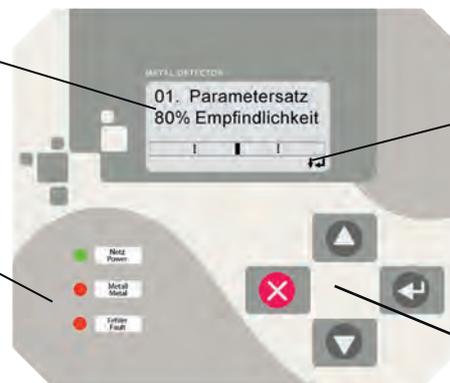
**ACTIVE QUALITY ASSURANCE** WITH SMD COMPONENTS YOU SAVE NOT ONLY SPACE BUT ALSO ASSURE OPTIMUM QUALITY AND SAFETY FOR THE END USER. WITH AUTOMATED PLACEMENT COMPONENT ERRORS ARE ELIMINATED. IN ADDITION EACH CARD IS 100% TESTED AND ARTIFICIALLY AGED. ALL **BUNTING** PRODUCTS ARE DEVELOPED UNDER DIN, EN AND UW STANDARDS AND COMPLY WITH THE STRICT CE STANDARDS AS WELL.

## CONTROLS

EXAMPLE OF AN INPUT DISPLAY (DEPENDING UPON THE SELECTED MENU) THE DISPLAY SHOWS DIFFERENT FUNCTIONS !

DISPLAY FIELD (PRODUCT NAME, BATCH NUMBER, ETC.)

DISPLAY SYSTEM MESSAGES

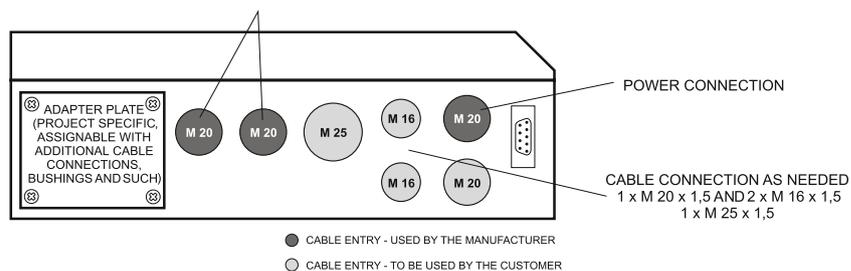


SIGNAL WAVE DISPLAY

CONTROL PANEL

## ELECTRONIC BOX

SCREWED CONNECTION FOR THE DETECTOR COIL (USED BY THE MANUFACTURER)

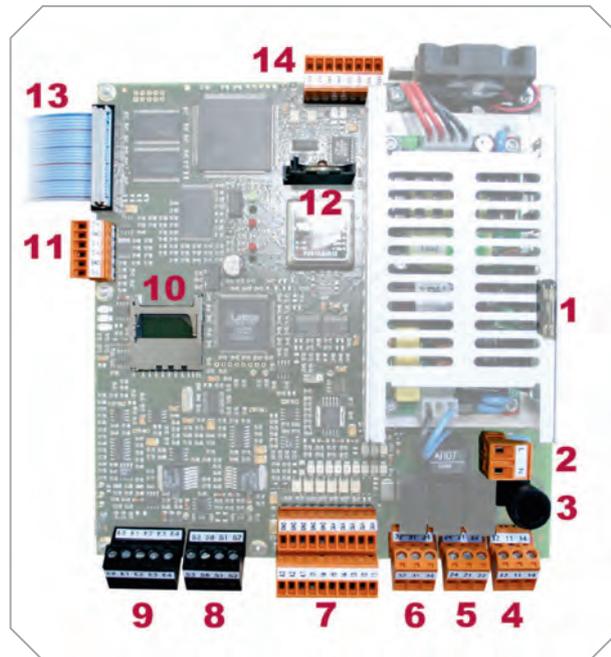


## TECHNICAL DATA

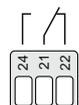
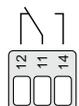
POWER SUPPLY:	100 V - 240 V AC, 50 OR 60 Hz
CURRENT CONSUMPTION:	MAX. 0,75 A
FUSE:	1,25 A (SLOW BLOW)
TYPE OF PROTECTION:	IP 54
WORKING TEMPERATURE RANGE:	-10°C TO +50°C
STORAGE TEMPERATURE RANGE:	-10°C TO +60°C
REL. HUMIDITY:	0 TO 95 % ( WITHOUT CONDENSATION)
PRODUCT TEMPERATURE:	MAX. +80°C
CONVEYING SPEED:	0,05 TO 10 M/SEC.
PAINT:	RAL 3027
VERSION:	DETECTOR HEAD = STAINLESS STEEL (1.4301) ELECTRONIC BOX = STEEL (ST 37)
INTERCONNECTING CABLES:	DETECTOR COIL / CONTROL BOX = 2 M
POWER CABLE:	APP. 1,8 M CABLE WITH PLUG ( TWO-POLE AND EARTHING PIN) (US-VERSION WITH US-STANDARD PLUG)

OTHER VERSIONS AVAILABLE

## POSITIONS



- 1** SPARE FUSE
- 2** POWER SUPPLY 100 - 240 VAC, 50/60 HZ
- 3** DEVICE FUSE 1,25 A (SLOW BLOW) 5 x 20 MM ACCORDING TO DIN
- 4** RELAY 1 (SWITCHES NORMALLY ON METAL)  
 POTENTIAL FREE CONTACT FROM FACTORY (IF NOT REQUESTED OTHERWISE). RELAY 1 IS DESTINATED AS METAL-RELAY.  
 MAX. CONTACT LOAD: 250 V/3 A
- 5** RELAY 2 (SWITCHES NORMALLY ON OPERATION)  
 POTENTIAL FREE CONTACT:  
 ASIDE FROM THE OPTICAL DISPLAY A POTENTIAL FREE CONTACT IS AVAILABLE TO POLL THE UNIT CONDITION.  
 MAX. CONTACT LOAD: 250 V/3 A
- 6** RELAY 3 (TO BE CONFIGURED BY THE MANUFACTURER)  
 POTENTIAL FREE CONTACT  
 MAX. CONTACT LOAD: 250 V/3 A



**7** SEVEN (7) FREE PROGRAMMABLE INPUTS (24V DC)  
AND THREE (3) FREE PROGRAMMABLE OUTPUTS (24V DC)

INPUTS (STANDARD CONFIGURATION)

In1 - INITIATOR / BUTTON „NORMAL POSITION“

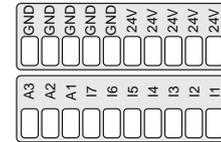
In2 - INITIATOR / BUTTON „EJECT POSITION“

In3 - AIR PRESSURE MONITOR (PRESSURE SWITCH)

In4 - INPUT LIGHT BARRIER

In5 - POSITION SENSOR

In6 - EXTERNAL RESET BUTTON In7 – NOT CONNECTED



THREE (3) FREE PROGRAMMABLE OUTPUTS (24V DC)

OUTPUTS (STANDARD LAYOUT )

OUT 1 - 24 V OUTPUT METAL

OUT 2 - 24 V OUTPUT READY

OUT 3 - NOT CONNECTED

ADDITIONAL CONTACT POSSIBILITIES: LEVEL SENSORS AND MORE

MAX. LOAD FOR ALL INPUTS AND OUTPUTS  $I_{TOTAL} \leq 300 \text{ mA CUMULATIVE!}$

**8** CONNECTION TRANSMITTER (USED BY FACTORY )

**9** CONNECTION RECEIVER (USED BY FACTORY )

**10** SLOT FOR SD MEMORY CARD

**11** CAN – BUS DATA PORT

**12** BATTERY

**13** CONNECTION DISPLAY (USED BY FACTORY )

**14** TWO SERIAL DATA PORTS (ONE PORT IS USED BY FACTORY)

### **Service and Calibration**

Bunting service engineers are available at short notice to service and calibrate our full range of detectors in the UK and overseas. Bunting offers 3 levels of protection designed to provide specific services to optimise the performance and lifespan of metal detection equipment

#### **Pro-Start™**

Pro-Start™ commissioning coverage ensures that a metal detector performs to company expectations from its first day on the job. A factory-trained service technician will be on-site to verify the installation, calibrate the metal detector to achieve top performance and train personnel. Pro-Start includes a calibration label for the detector, a complimentary set of test pieces (specify size and type on purchase) and a detailed calibration record for company files. It also extends the original one-year factory warranty to two years and includes two years of phone-based technical support.

#### **Pro-Maintenance™**

Pro-Maintenance™ keeps the metal detector operating like new, which is critical, considering the impact of poor performance on customer satisfaction and other consequences. It provides either annual (Gold plan) or biannual (Platinum plan) visits by factory-trained service technicians to service and calibrate the metal detector and ensure the system is running the latest accurate software. The Pro-Maintenance plan also includes significant parts and labour discounts on any needed spares and repair work, on-site training for personnel during service & calibration visits and two years of phone based technical support.



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