

# METAL DETECTOR

## METRON 03 SL

RELIABLE DETECTION OF ALL METALS:

- FERROUS
- STAINLESS STEEL
- ALUMINUM
- COPPER
- BRASS
- .....

RELIABLE DETECTION OF FREE OR ENCAPSULATED CONTAMINANTS.

VERSION 11/14

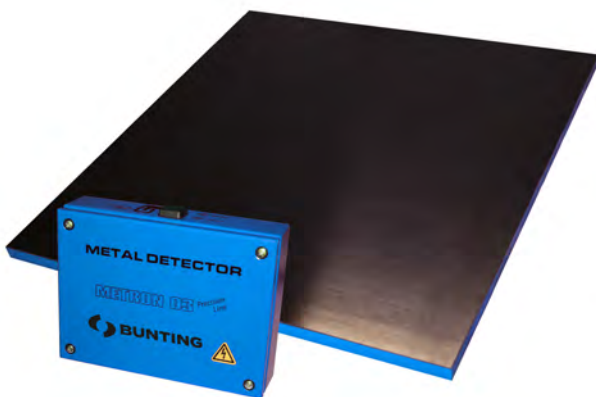
A METAL DETECTOR FOR INSTALLATION IN BELT CONVEYORS, ... PREFERABLY FOR FLAT PRODUCTS.

#### INDUSTRIES

- PLASTIC INDUSTRY
- RECYCLING INDUSTRY

#### APPLICATION

- MACHINERY PROTECTION
- CUTTING MILLS
- GRINDERS, CRUSHERS
- .....



- NO METAL FREE ZONE REQUIRED
- EXCELLENT SENSITIVITY TO FERROUS, STAINLESS STEEL AND NON-FERROUS METALS
- WET/HUMID PRODUCTS AND CONVEYOR BELTS DO NOT CREATE DISTURBANCES
- EASY TO INSTALL WITHOUT EXCESSIVE MODIFICATIONS
- A SLIDER PLATE IS NOT REQUIRED
- THE RIGHT DETECTOR FOR EVERY CONVEYOR
- INSTALL - CONNECT - DONE!  
(NO ADDITIONAL ADJUSTMENT OR TUNING REQUIRED)
- THE DATA SHEET CONTAINS ADDITIONAL INFORMATION AS TO THE AMD 03  
(VERSION 3.5) ELECTRONICS

## STANDARD SCOPE OF DELIVERY

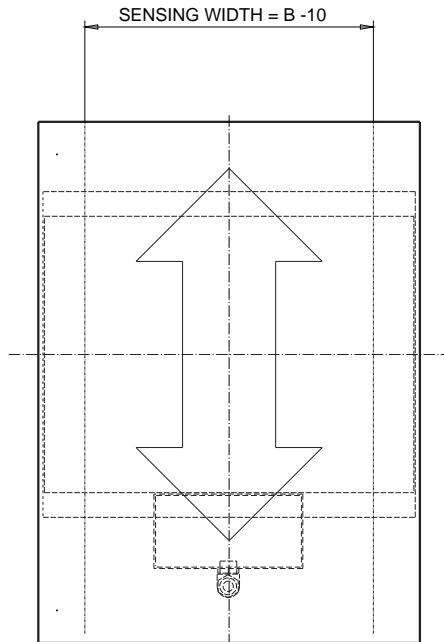
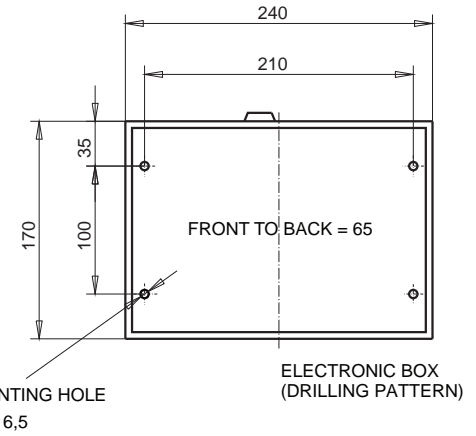
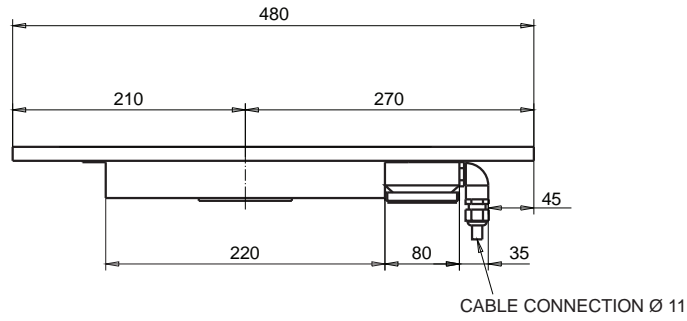
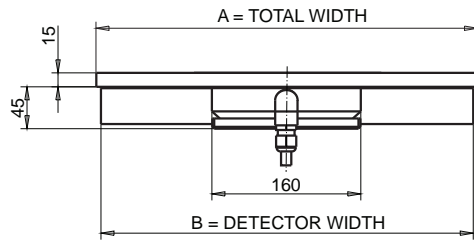
- DETECTION COIL
- ELECTRONICS IN HOUSING
- CONNECTING CABLES
- USER MANUAL INCL. INSTALLATION INSTRUCTIONS, WIRING DIAGRAM AND SPARE PARTS LIST IN SEVERAL LANGUAGES
- EG CONFORMITY DECLARATION



## OPTIONAL EQUIPMENT

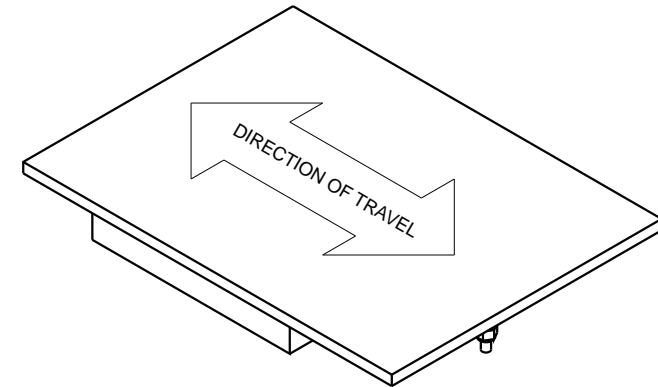
- OPTICAL AND ACOUSTICAL SIGNAL UNITS
  - BEACON
  - BUZZER
  - BEACON WITH SIREN
- REMOTE RESET DEVICE
- ·CONVEYOR CONTROLS
  - CONVEYOR REVERSE
  - .....
- ADDITIONAL FILTERS
  - MAGNETICALLY OPERATED VOLTAGE STABILIZERS
  - ELECTRONICALLY OPERATED VOLTAGE STABILIZERS
- ·SOLUTIONS WITH BELT CONVEYORS AND REJECT MECHANICS TURN KEY

# DIMENSIONS



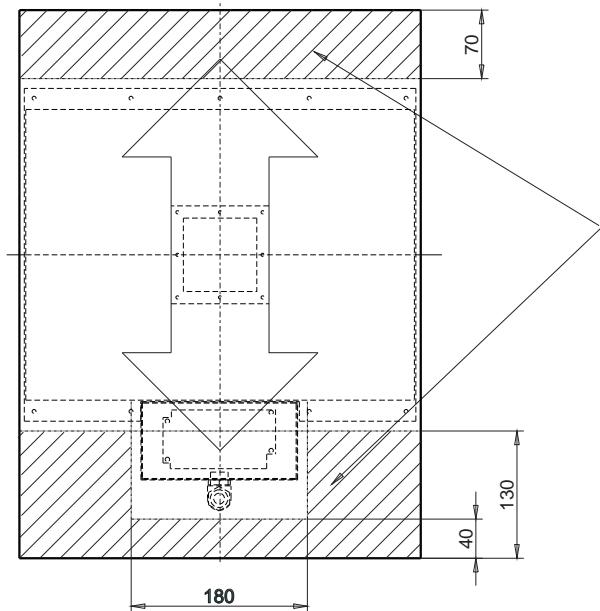
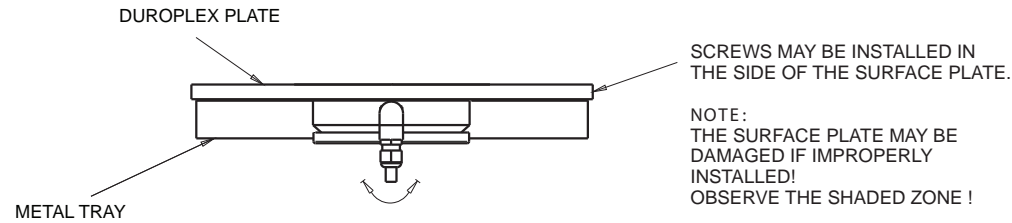
NR.	TOTAL WIDTH A	DETECTOR WIDTH B	SENSING WIDTH B-10	WEIGHT KG
1	min. 210 – max. 300	200	190	5
2	min. 260 – max. 350	250	240	6
3	min. 310 – max. 400	300	290	7
4	min. 360 – max. 450	350	340	8
5	min. 410 – max. 500	400	390	9
6	min. 430 – max. 520	420	410	10
7	min. 460 – max. 550	450	440	11
8	min. 510 – max. 600	500	490	12
9	min. 560 – max. 650	550	540	13
10	min. 610 – max. 700	600	590	14
11	min. 660 – max. 750	650	640	15
12	min. 710 – max. 800	700	690	16
13	min. 760 – max. 850	750	740	17
14	min. 810 – max. 900	800	790	18
15	min. 860 – max. 950	850	840	19
16	min. 910 – max. 1000	900	890	20
17	min. 960 – max. 1050	950	940	21

OTHER DIMENSIONS AVAILABLE



ALL DIMENSIONS IN MM

# INSTALLATION



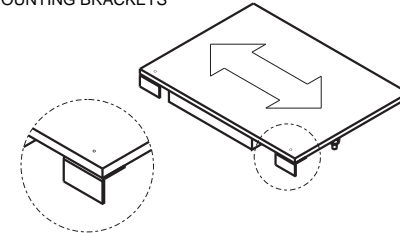
**NOTE:**  
TAKE CARE OF A TORSION - FREE  
INSTALLATION. WE SUGGEST MOUNTING  
OPTION C FOR DETECTOR WIDTH > 600 MM.



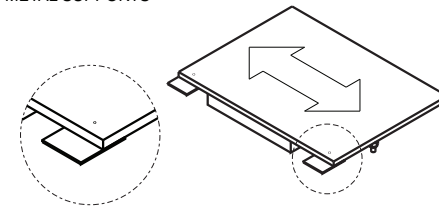
PLEASE MAINTAIN A DISTANCE OF AT LEAST 1.2M (4') BETWEEN CONVEYORS/DETECTORS TO AVOID OVERLAPPING OF COIL FREQUENCY AND SUBSEQUENT FALSE SIGNALS !

## MOUNTING POSSIBILITIES

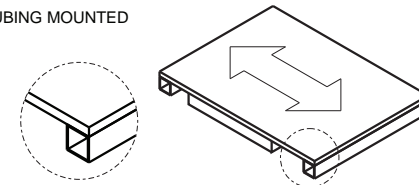
A) MOUNTING BRACKETS



B) METAL SUPPORTS

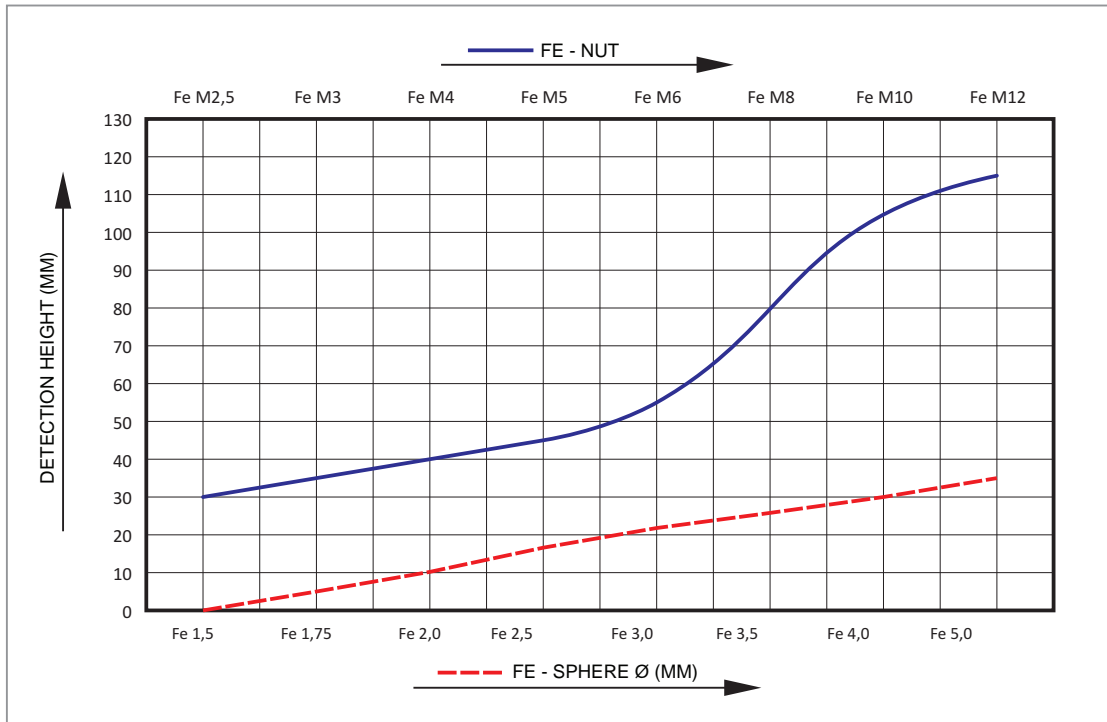


C) TUBING MOUNTED



## SENSITIVITY DIAGRAM

THE SENSITIVITY IS DEPENDENT UPON THE DISTANCE BETWEEN THE METAL CONTAMINANT AND THE SENSOR SURFACE. THE CLOSER THE CONTAMINANT IS TO THE SURFACE, THE HIGHER THE SENSITIVITY.



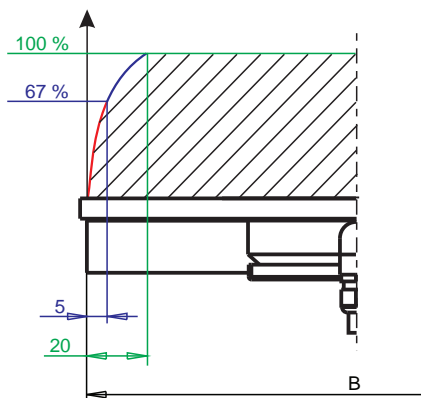
**TYPICAL SENSITIVITY DIAGRAM UNDER PROCESS CONDITIONS WITH PLASTIC WASTE.**

SENSITIVITY OF OTHER METALS BASED ON THE VALUES OF FERROUS METAL.

SS (STAINLESS STEEL) = FE-SPHERE x 1 TO 2 (FACTOR DEPENDS ON THE METAL ALLOY)

NFe (CU, ALU, BRASS...) = FE-SPHERE x 1,2 TO 1,5 (FACTOR DEPENDS ON THE METAL TYPE)

## SENSITIVITY RANGE



SENSITIVITY IN %  
IN RELATION TO VALUES GIVEN IN THE DIAGRAM

**EXAMPLE: (DETECTION HEIGHT 20 MM)**

100 % = FE-SPHERE Ø 3 MM (SEE SENSITIVITY DIAGRAM)

$$\frac{\text{Ø } 3 \text{ MM}}{100} \times (100 - 67) + \text{Ø } 3 \text{ MM} = \text{Ø } 4 \text{ MM}$$

67 % = FE-BALL ~ Ø 4 MM

# CONTROL UNIT AMD 03 (Version 3.5)

ADVANTAGES THAT WILL CONVINC YOU !

### AUTO BALANCING

DURING POWER UP AS WELL AS DURING STANDARD OPERATION, THE CONTROL UNIT CONTINUOUSLY BALANCES ITSELF. OVER TIME, COILS MAY SHIFT AND SENSITIVE COMPONENTS MAY LOOSE TOLERANCE. TEMPERATURE ALSO HAS AN EFFECT ON THE PERFORMANCE AND MUST BE COMPENSATED FOR. THIS SELF BALANCING ROUTINE INSURES THAT THE DETECTOR IS CONTINUOUSLY OPERATING AT MAXIMUM PERFORMANCE.

### PRODUCT EFFECT COMPENSATION

ELECTRICALLY CONDUCTIVE OR HUMID PRODUCTS CAN CAUSE EXTREME LOSS OF SENSITIVITY OR EVEN RENDER CONVENTIONAL DETECTORS USELESS. THE EVALUATION ELECTRONIC SYSTEM AMD 03 ELIMINATES THESE PRODUCT EFFECTS ELECTRONICALLY AND GUARANTEES A CONSTANT SENSITIVITY.

### SERVICE FRIENDLY

EASY TO DIAGNOSE: OPTICAL FAULT INDICATION WITH LED'S "DO IT YOURSELF-REPAIRS" ARE EASY. "PLUG AND PLAY" CONNECTORS, A QUARTZ DRIVEN SENDER FREQUENCY AND THE SINGLE MOTHERBOARD CONSTRUCTION GUARANTEE EASE OF REPAIR.

### TEMPERATURE COMPENSATION

CUTTING EDGE TECHNOLOGY! EVEN EXTREME TEMPERATURE FLUCTUATIONS ARE EFFORTLESS COMPENSATED WITHOUT AFFECTING THE FUNCTIONS OF THE METAL DETECTOR.



### EASY TO OPERATE

EASY TO USE CONTROLS ALONG WITH VISUAL DISPLAYS MAKE THE INSTALLATION AND OPERATION OF THE AMD 03 EFFORTLESS.

### NOISE SUPPRESSION

BY ADDING DYNAMIC DIGITAL FILTRATION CIRCUITRY, VIBRATIONS WHICH ARE OFTEN TRANSFERRED TO THE DETECTOR CAN NOW BE FILTERED OUT WITHOUT HAVING TO LOWER THE SENSITIVITY OF THE SYSTEM.

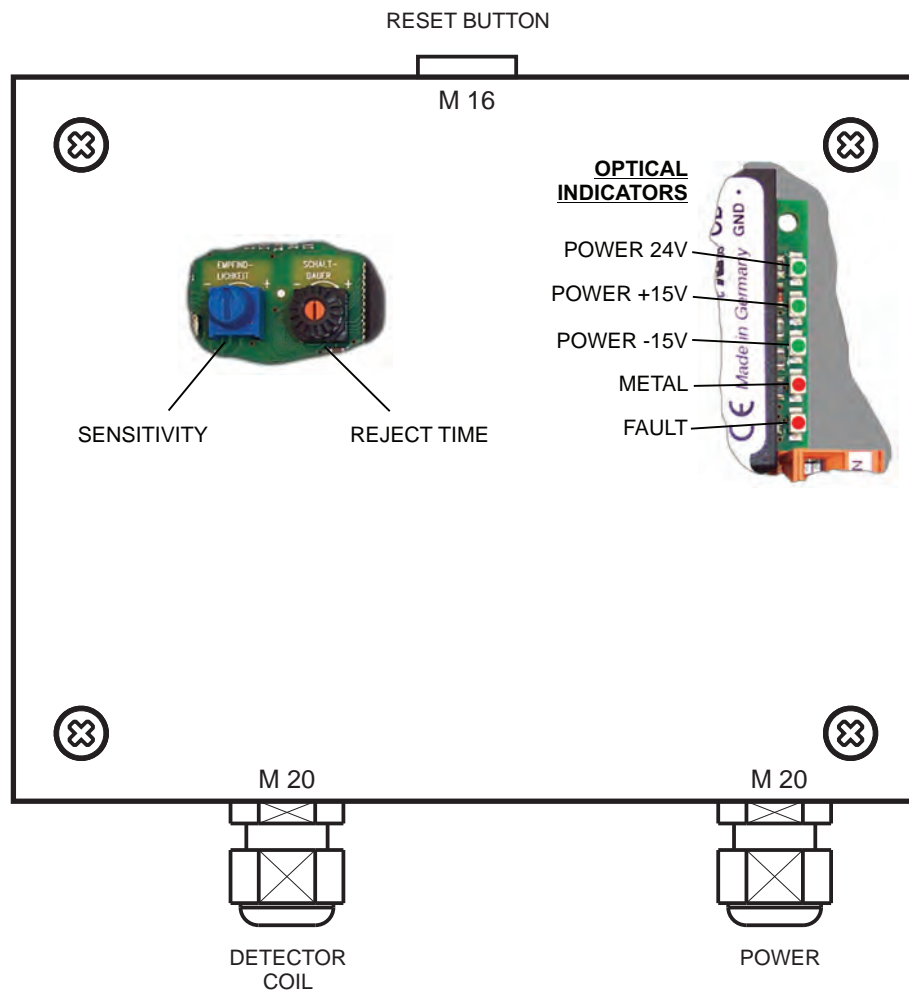
### SELF MONITORING FEATURES

ALONG WITH INDICATORS ON THE FRONT PANELS, RELAY CONTACT IS PROVIDED WHICH CAN BE CONNECTED TO EXTERNAL WARNING DEVICES TO ALERT THE OPERATOR OF ANY PROBLEMS. ALL SYSTEM COMPONENTS ALONG WITH CONNECTIONS TO THE DETECTION COIL ARE CONTINUOUSLY MONITORED.

### 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 BUNTING PRODUCTS MEET THE REQUIREMENT OF DIN, VDI/VDE, UVV AND CE REGULATIONS.

## CONTROLS

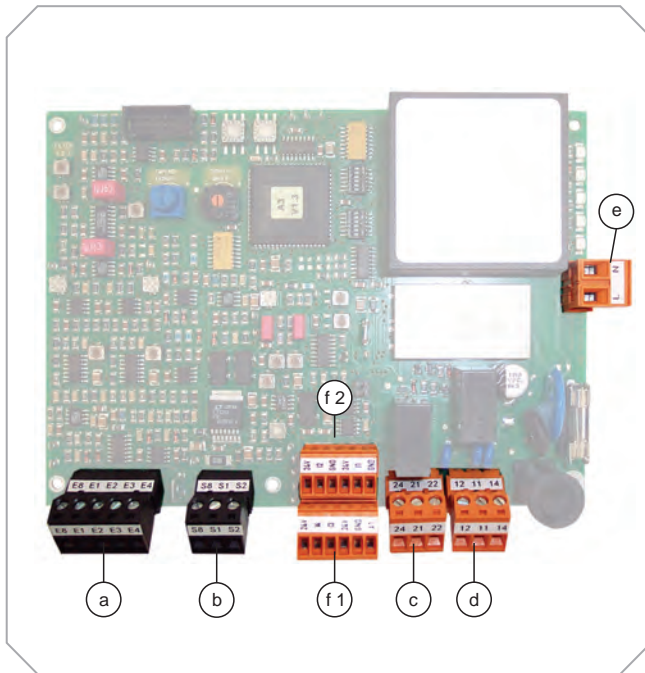


## TECHNICAL DATA

POWER SUPPLY:	100 - 240 V AC, 50/60 Hz
CURRENT CONSUMPTION:	MAX. 0,4 A
FUSE:	315 MA (SLOW BLOW), 5x20 MM TO DIN
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:	0,10 TO 1,5 M/SEC.
REJECT DURATION:	0,14 TO 19 SEC. +/- 7 MS, ADJUSTABLE
PAINTED:	RAL 3027 = RASPBERRY RED
POWER CABLE::	APP. 1,8 M CABLE WITH PLUG (TWO POLE AND EARTHING PIN) (US-VERSION WITH US-STANDARD PLUG)

OTHER VERSIONS AVAILABLE

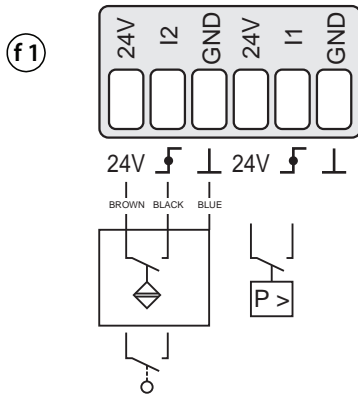
## INPUTS AND OUTPUTS



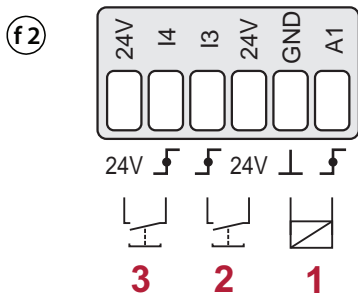
(f1) + (f2) FUNCTION BLOCK + (e) POWER +  
 (a) RECEIVER + (b) TRANSMITTER ARE USED BY MANUFACTURER

### (f1) + (f2) FUNCTION BLOCK

#### CONNECTING EXAMPLES



INPUTS (STANDARD LAYOUT)



24 VDC IN-/OUTPUTS (STANDARD LAYOUT)

1. A1 – ACTIVE OUTPUT SWITCHES WHEN METAL IS DETECTED (OPERATES THE SOLENOID VALVE).
2. RESET-BUTTON, EXTERNAL (TO RESET THE FAULT INDICATION)
3. CONNECTION AVAILABLE FOR A TEST-BUTTON

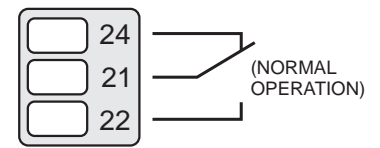
CONNECT ONLY POTENTIAL FREE CONTACTS (NO EXTERNAL SUPPLIED VOLTAGE) !  
 MAX. (TOTAL) POWER CONSUMPTION = 100 MA (FOR ALL CONNECTIONS / f1 + f2)



## INPUTS AND OUTPUTS

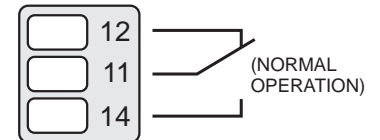
### c RELAY 2 (OPERATIONAL)

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



### d RELAY 1 (METAL)

- FLOATING RELAY-CHANGE OVER CONTACT ACTUATED WHEN METAL IS DETECTED MAX. CONTACT LOAD: 250 V / 3 A  
PULSE DURATION (AUTO-RESET): 0,14 SEC. TO 19 SEC. (ADJUSTABLE)



### e POWER SUPPLY

- 100 - 240 VAC, 50/60 HZ; CURRENT CONSUMPTION MAX. 750 MA  
(OTHER VERSIONS AVAILABLE)



## MATERIALS OVERVIEW

**DETECTOR COIL:** COVER PLATE MADE OF DUROPLEX (15 MM)  
COIL TRAY AND CONNECTION BOX = SHEET STEEL (ST 37)  
TEXTURED PAINTED (RAL)

**ELECTRONIC BOX:** SHEET STEEL (ST 37) POWDER COATED

### **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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