

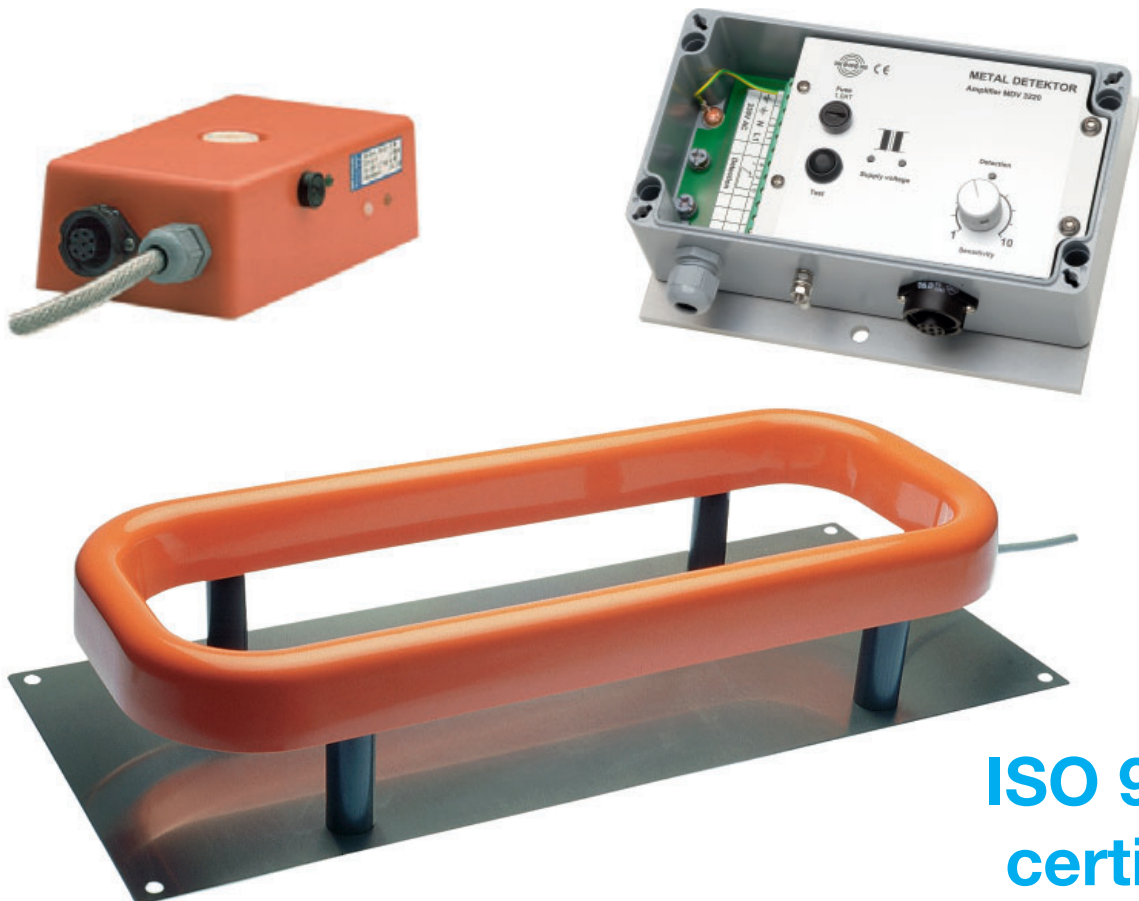
Special-Sensors for Automation



Metal Detectors

System 3000

- for jaw crusher
- for conveyer belt monitoring
- for waste separation

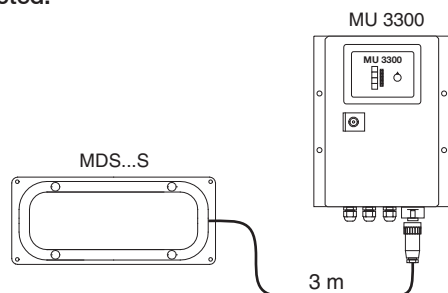


**ISO 9001
certified**

Technology and use

The metal detector System 3000 is designed to detect medium size and larger pieces of metal. The system has a very effective means of adjusting sensitivity. When used with the MU 3300 amplifier, it will respond at the highest level of sensitivity to medium size parts like nails, washers, or pieces of flatware. When used with the MDV amplifier, it will respond only to larger pieces of metal like teeth from an excavator bucket, tools, or metal paneling. If not discovered, these items could destroy stone-crushing machines, vibratory equipment, or wood-chipping machines. When used in this manner, the metal detector is suitable for protecting machinery, whereby smaller parts will not interrupt operation of the equipment. It detects metal during bulk material transport by means of contactless measurement.

The System 3000 consists of an amplifier and an inductive detector coil. The amplifier is equipped with an automatic adjustment regulator that ensures reliable operation even when disturbing metal parts are in close proximity to the detector coil. In addition, the adjustment regulator also ensures that only metal parts that are in motion will be detected.

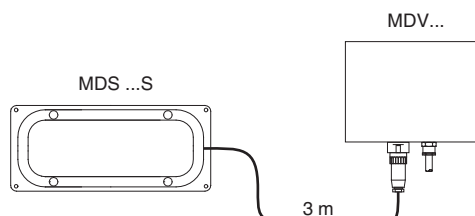


One of the amplifier's tasks is to process the signals emitted by the metal detector coil and convert them into an electronic pulse. The detector coil generates an electromagnetic field. As soon as a piece of metal passes by the coil, it disturbs that field, resulting in a signal that can be evaluated.

The operator adjusts the metal detector's sensitivity on the potentiometer. The coil's sensitivity is dependent on several factors, including: the coil's environment, the electromagnetic characteristics of the material to be detected, and the speed with which the material is transported.

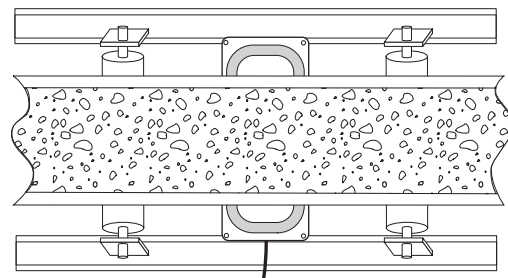
The MU 3300 amplifier has a self-monitoring function. Any error that appears in the system will activate a separate output relay. The unit's electronics are installed in a robust metal housing that has a window for the functional display.

The MDV 3172 and MDV 3220 amplifier are particularly well suited for use in difficult environments like those that involve dirt, temperature fluctuations, or vibration. These models therefore possess only the most critical adjustment and display functions.



The detector coils are mounted with PVC columns on an aluminium baseplate that shields the coils from electromagnetic disturbances coming from the substructure. The baseplate simultaneously provides stability. Whenever the operator must arrange the detector coil in the presence of iron structural elements, he can use the aluminium plate to shield the coil.

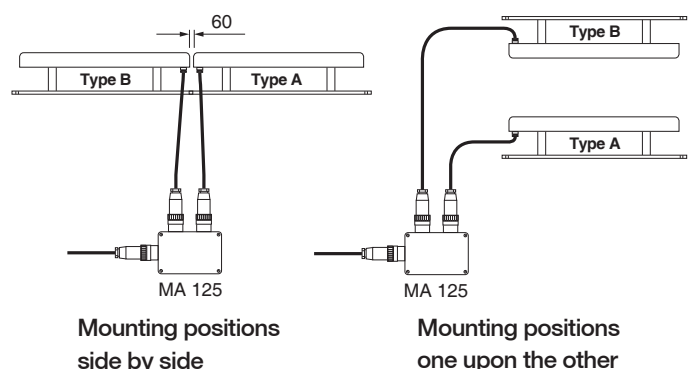
It is preferable to arrange the detector coils underneath the material transport belts in order to minimize the chance of mechanical damage to the coil. The distance to the belt's transport rollers should be at least equal to the width of a coil. In order to most effectively exploit the metal detector's sensitivity, maintain a metal-free area around the detector coil approximately equal to 1.5 to 2 times the coil diameter.



If the coil is installed in a hanging position above the transport belt, always make sure that no structural parts made of iron are too close to the coil and especially that they do not vibrate. If this cannot be avoided, it will be necessary to reduce the sensitivity. This will consequently reduce the detection distance or may have the result that only large pieces of metal will be detected.

The detector coils have a special 3-meter long cable. If the distance between the detector coil and the amplifier is longer than 3 meters, connect these two units with the KS 031 DS... extension cable. The longest permissible distance is 50 meters. In order to ensure that the system will work properly at that distance, we recommend using the EGE special extension cable.

By using connection box MA 125 two detector coils can operate together with one amplifier MDV.../ MU.... The maximum cable length between one coil and the connection box MA 125 is 3 m.



Amplifier for detector coils

Series MU

High sensitivity

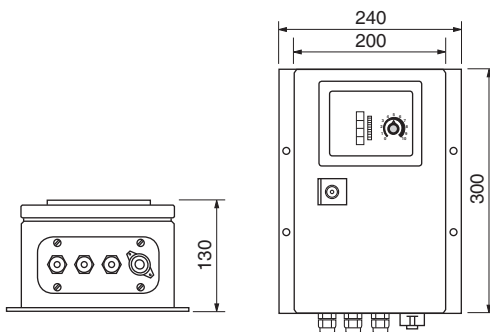
Automatic adaption

Self monitoring function

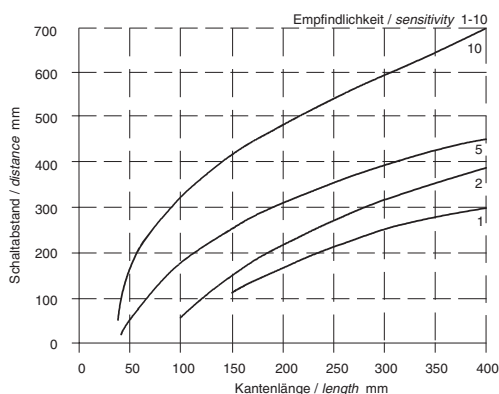
Reset function

230 / 115 V AC



Design	MU 3300
Dimensions	
ID-No.	P81012
Type	MU 3300
Supply voltage [V]	230 / 115 AC $\pm 10\%$
Current consumption [mA]	<60
Output	Relay / Change over contact
Switching voltage	250 V AC / 220 V DC
Switching current	4 A
Switching power	1000 VA / 60 W ($\cos \varphi = 1$)
Ambient temperature [°C]	-20...+60
Time delay [s]	typ. 60
EMC class	A
Protection [EN 60529]	IP 65
Display	LED-array
Housing material	Steel

Sensitivity diagram (steel cube ST 37)

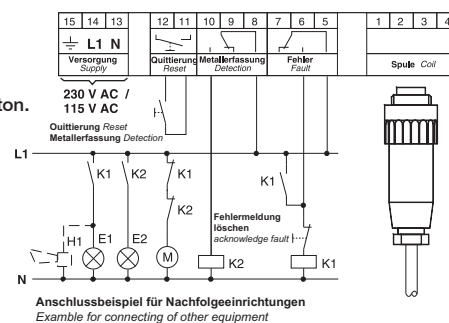


Connections

Relay „Detection“ decays when metal is detected.

Metal detection is acknowledged with reset button.

Relay „Fault“ decays on fault condition.



Accessories

see page 8.07

Amplifier for detector coils

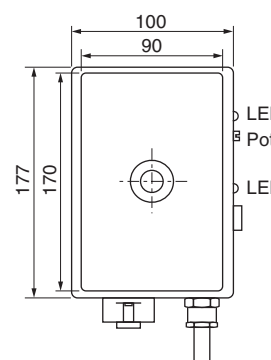
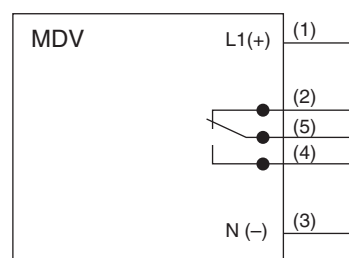
Series MDV

Automatic regulation adaption

Waterproof IP 67

For detector coil with cable plug



Design		MDV 3172		
Dimensions				
ID-No.	P81010	P81017	P81011	
Type	MDV 3172 WR2	MDV 3172 WR1	MDV 3172 GR	
Supply voltage [V]	230 AC ±10%	115 AC ±10%	24 DC ±10%	
Current consumption [mA]	<20	<60	<100	
Output	Relay / Change over contact			
Switching voltage	250 V AC / 220 V DC			
Switching current	1 A AC / 2 A DC			
Switching power	125 VA / 60 W			
Ambient temperature [°C]	-25...+70			
EMC class	A			
Protection [EN 60529]	IP 67			
Display	LED			
Housing material	PBT			
Connection	2 m PVC cable 7x0,5 mm²			
Note:				
The amplifier MDV 3172 has a relay-change over-function. During metal detection, the relay is activated and contact 4-5 is closed (2-5 is open). After switch-on, the contact 5-4 is closed for 2 seconds. This can be used for testing purposes.				
Accessories	Central screw M16x1 (Z00105) is part of delivery			

Amplifier for detector coils

Series MDV

Automatic regulation adaption

Waterproof IP 67

For detector coil with cable plug

With sensitivity adjustment knob

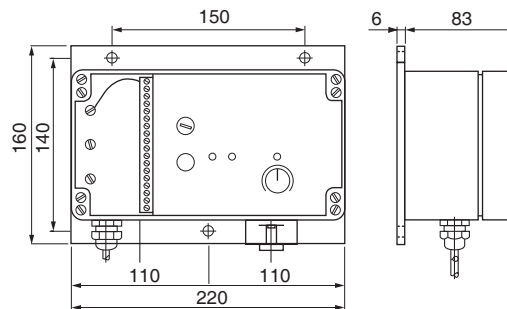
Test button



Design

MDV 3220

Dimensions



ID-No.	P81060	P81061
Type	MDV 3220 WR2	MDV 3220 GR
Supply voltage [V]	230 AC $\pm 10\%$	24 DC $\pm 10\%$
Current consumption [mA]	<20	<100
Output	Relay / Change over contact	
Switching voltage	250 V AC / 220 V DC	
Switching current	1 A AC / 2 A DC	
Switching power	125 VA / 60 W	
Ambient temperature [°C]	-25...+70	
EMC class	A	
Protection [EN 60529]	IP 67	
Display	LED	
Cable diameter [mm]	4...10	
Housing material	Aluminium	
Connection	Screw terminals	

Note:

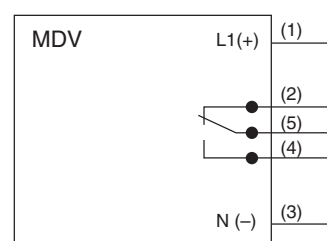
With the potentiometer it is possible to adjust the sensitivity.

The amplifier MDV 3220 has a relay-change over-function. During metal detection, the relay is activated and contact 4-5 is closed (2-5 is open).

By pushing the test button it is possible to test the complete function of the MDV 3220.

		3	1		4	2	5
		N	L1				
230 V AC				Metallerrfassung Detection			

		3	1		4	2	5
		-	+				
24 V DC				Metallerrfassung Detection			

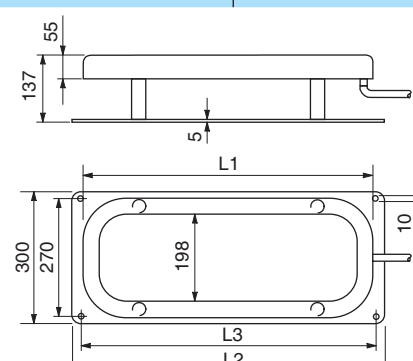


Detector coils

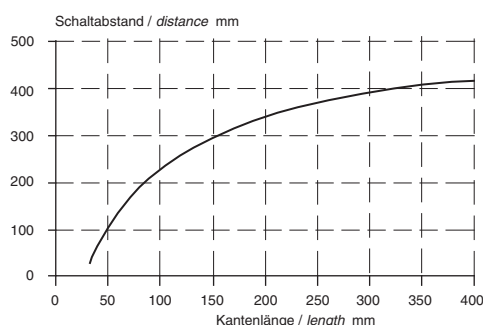
Series MDS

Designed for outdoor use
Rugged construction
Substantially made



Design	MDS 3065-S		MDS 3095-S	
Dimensions				
	Dimensions L1-L2-L3 [mm]		650-700-670	950-1000-970
ID-No.	P81054	P81055	P81056	P81057
Type	MDS 3065-SA	MDS 3065-SB	MDS 3095-SA	MDS 3095-SB
Coil type	A	B	A	B
Ambient temperature [°C]	-25...+70			
Protection [EN 60529]	IP 67			
Housing material	PBT / Aluminium plate			
Connection	3 m PUR cable with cable plug			

Sensitivity diagram (steel cube ST 37)



Maximum sensitivity for
detector coil MDS 3065 with MDV

Note:

When using two detector coils one coil must be coil type A and the other coil type B. The maximum detection width increases up to 1800 mm (see connection box MA 125, page 8.07).

The standard cable length for the connection cable of the detector coil is 3 m. The extension cable type KS031-DS has two plugs, which can be connected at the amplifier and also at the detector coil. The maximum length of the extension cable is 50 m.

Coils MDS 3065-S (P81007) and MDS 3095-S (P81009) are replaced by MDS 3065-SA (P81054) or MDS 3095-SA (P81056) respectively. The technical and mechanical specifications are unchanged.

Accessories	Extension cable KS031-DS..., see page 8.07
-------------	--

Accessories

SUPPLY ISOLATION UNIT NTG 251/255, DTG 24

Type	ID-No.	Design
NTG 251	P81030	230 V AC
NTG 255	P81032	115 V AC
DTG 24	P81053	24 V DC

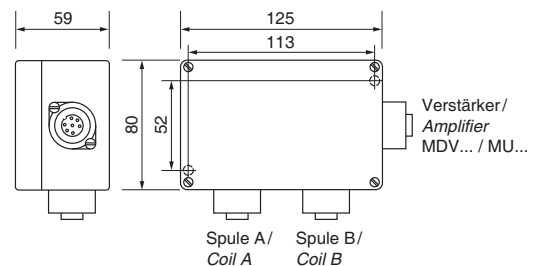
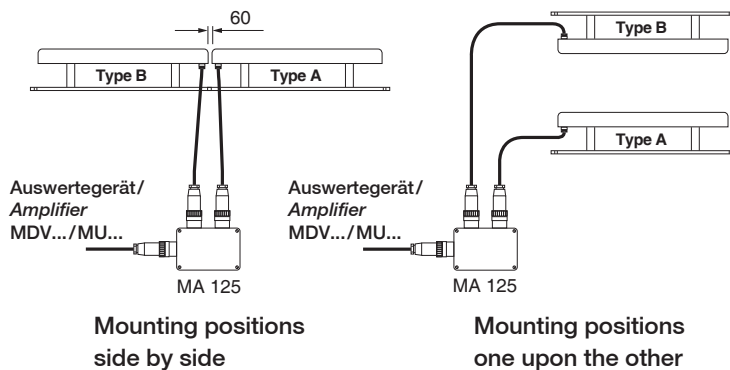
The power supply isolation unit is connected between the power supply and the amplifier MDV... It limits the power supply overvoltage and therefore protects the amplifier against overloading. It is used wherever no overvoltage protection is available, where the power supply takes place via an overhead power transmission network or an unstabilised battery charger, or where high inductive loads, e.g. motors, are directly switched. The power supply isolation unit acts also as an interface filter. The floating changeover output contact is designed to be connected to a power relay. It is not suitable for high loads.



CONNECTION BOX MA 125

Type	ID-No.	Design
MA 125	P81058	Connection box

By using connection box type MA 125 two detector coils can operate together with one amplifier MU / MDV.... The maximum cable length between one coil and the connection box MA 125 is 3 m.



Ambient temperature	-25 °C...+70 °C
Protection	IP 67
Housing material	Aluminium
Connection	C16 plug-connection
Mounting size	52 x 113 mm

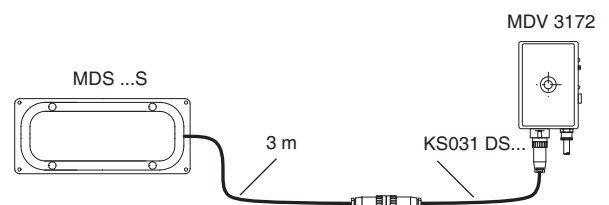
EXTENSION CABLES KS031-DS

Type	ID-No.	Design
KS031-DS05	P81051	5 m IP 68
KS031-DS10	P81052	10 m IP 68
KS031-DSXX	S.....	max. 50 m

XX: Special length up to 50 m with plug connectors.

The KS031-DS... double-end cable connects in particular the detector coil with an extension cable (watertight) that has on its opposite end a plug for connecting to the MDV... or MU... amplifiers.

The KS031 special connection cable is specially designed for use with the Series 3000 of metal detectors. Due to its solid construction and resistant polyurethane sheath, it will not generate any disturbances that could initiate an error signal in the amplifier.





Headquarters
EGE-Elektronik
Spezial-Sensoren GmbH

Ravensburg 34
D-24214 Gettorf
Tel. +49 (0) 4346 / 41580
Fax +49 (0) 4346 / 5658

Internet: www.ege-elektronik.com



EGE-Elektronik ApS
Forstallé 79
DK-6200 Aabenraa
Tel. +45 70207271
Fax +45 70207272



EGE-Specialsensorer AB
Stationsgatan 4
S-51250 Svenljunga
Tel. +46 32512060
Fax +46 32512064



Stork AS
Brynsveien 100
N-1352 Kolsås
Tel. +47 67176400
Fax +47 67176401



Vision Systems OY
PL353
FI-40101 Jyväskylä
Tel. +358 (0)10 322 7100
Fax +358 (0)10 322 7119



Molex France
18 Parc Burospace
F-91571 Bièvres Cedex
Tel. +33 2 32 96 04 28
Fax +33 2 32 96 04 21



Cematic-Electric B.V.
Spinel 200
NL-3316 LG Dordrecht
Telefon +31 74 2433422
Telefax +31 74 2913333



ICM Ital Control Meters Srl
Via della Valle 67
I-20048 Carate Brianza (Mi)
Tel. +39 0362 8052 00
Fax +39 0362 8052 01



Bibus Spain, S. L.
Rua do Arroncal, Via C – Nave 4A
ES-36350 Nigran
Tel. +34 986 247286
Fax +34 986 209247



Powelectrics Limited
Unit 12 Ninian Park
Ninian Way
Tamworth
GB-Staffordshire B77 5ES
Tel. +44 1827 310666
Fax +44 1827 310999



Bachofen AG
Ackerstraße 42
CH-8610 Uster
Tel. +41 449441111
Fax +41 449441233



VWR International GmbH
Graumannsgasse 7
A-1150 Wien
Tel. +43 1 97 002 - 0
Fax +43 1 97 002 - 600



Countapulse Controls (PTY) LTD.
P.O.B. 40393
ZA-2022 Cleveland
Tel. +27 116157556
Fax +27 116157513



HITECH Ltd.
1-35-2 Simouma, Setagaya,
JPN-Tokyo 154-0002
Tel. +81 35430 2301
Fax +81 35430 2302



Colterlec Pty Ltd.
Unit 2 106-110 Beaconsfield Street
AUS-Silverwater NSW 2128
Tel. +61 1300 362626
Fax +61 1300 017100



**PROTEK TEKNİK ELEKTRİK
TİC.SAN.LTD.ŞTİ.**
Okçumusa Cad. Kismet Han
No: 36/2 P.K.
TR-34420 Karaköy-Istanbul
Tel. +90 212 237 20 00
Fax +90 212 235 46 09



IAC & Associates
2105 Fasan Drive
Oldcastle
CDN-Ontario N0R 1L0
Tel. +1 519 7370311
Fax +1 519 7370314
TF +1 800 711 1900



Yuden-Tech Co., Ltd.
5F., No. 121, Lide St.,
Zhonghe City, Taipei County 235,
Taiwan (R.O.C.)
Tel. +886 2 8221 2958
Fax +886 2 8221 2492



**Shanghai Beishidietian
Business Trade Co., Ltd.**
4F, No. 88-1, Lane 7039,
Zhongchun Rd., Minhang Area
Shanghai City
Tel. +86 21 54887307
Fax +86 21 54887305



CSE-W. Arthur Fischer Ltd.
15 Polaris Place, Greenmount
NZ-East Tamaki, Auckland
Tel. +64 9271 3810
Fax +64 9265 1362



KOLEKTOR SISTEH d.o.o.
Šlandrova ulica 10
SI-1231 Ljubljana - Črnuče
Slovenija
Tel. +386 1 5636 300
Fax +386 1 7227 930



Introl Sp. z o.o.
ul. Kościuszki 112
40-519 Katowice
Tel. +48 32 789 00 00
Fax +48 32 205 33 77



Bibus Portugal, LDA
Centro Empresarial AAA
Rua Ponte da Pedra, 240 - C4
4470-108 Gueifães - Maia
Porto
Tel. +351 22 906 50 50
Fax +351 22 906 50 53



Futron Electronics PTE Ltd.
1004 Toa Payoh North
#04-08/09/10
Singapore 318995
Tel. +65 6250 2456
Fax +65 6250 6592



Useong Electrade Co.,
D-1006, Technopark
No. 1345, Soha-dong, Gwangmyeong-si
Gyeonggi-do,
Korea
Tel. +82 (0) 2 2686 7314
Fax +82 (0) 2 2686 7316