Western Australian Electricity Market
Build Pack
List of Codes

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Document prepared by:

Western Power
ABN 18540492861

Prepared by: Metering Services	Reviewed by OR Approved by::
Name (prepared by) WAEM Build Pack Working Group	Name (reviewed/approved by) Metering Services Manager

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Version	Date	Changes
2.0	6 Nov 2006	Initial version
2.1	6 August 2008	Updated as part of Build pack V2.1 revision Event codes moved to B2B Procedure documents

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Table of Contents

1 Introduction

1.1 Purpose

The purpose of this document is to provide a list of the Codes used by the transactions in the Western Australian Electricity Market Build Pack that are not documented in the individual procedure documents. The document will also provide the file structure for applicable CSV files that are available on Western Power's website.

1.2   Commencement

This document is in force, and may be amended, in accordance with the Electricity Industry Customer Transfer Code 2004 (CTC) and Electricity Industry Metering Code 2005 (MC) Communication Rules.

1.3   Overview and Structure

This document contains the following Sections:

Section 2 contains a list of the Codes (in a tabular format) used by the transactions in the Western Australian Electricity Market Build Pack.

1.4   Interpretation

This document is to be interpreted in accordance with Sections 1.4 (1) of the CTC and MC.

1.5   Related Documents

This document should be read in conjunction with the other documents contained within the Western Australian Electricity Market Build Pack, as defined in the Western Australian Electricity Market Build Pack – Usage Guidelines.

1.6   Change Control

This document may be varied or amended from time to time by following the processes outlined in Section 5 (Change Control Management For Documents Under The Control of These Rules) of the Electricity Industry Customer Transfer Code 2004 and the Electricity Industry Metering Code 2005 Communication Rules.

2   Codes

2.1   State and Jurisdiction Codes

Code	Description
AAT	Australian Antarctic Territory
ACT	Australian Capital Territory
NSW	New South Wales
NT	Northern Territory
QLD	Queensland
SA	South Australia
TAS	Tasmania
VIC	Victoria
WA	Western Australia

2.2 Street Type Codes

The complete list of Street Type codes are published in "Key to Codes Used in the Build Pack " and is available from the Build Pack area of Western Power's website.

Note – these codes are enforced by the Enumerations file of the waeXML schema

2.3   Street Suffix Codes

Code	Description
CN	Central
E	East
EX	Extension
LR	Lower
N	North
NE	North East
NW	North West
S	South
SE	South East
SW	South West
UP	Upper
W	West

Note – these codes are enforced by the Enumerations file of the waeXML schema

2.4   Flat or Unit Type Codes

Code	Description
APT	Apartment
CTGE	Cottage
DUP	Duplex
FY	Factory

Code	Description
F	Flat
HSE	House
KSK	Kiosk
MSNT	Maisonette
MB	Marine Berth
OFF	Office
PTHS	Penthouse
RM	Room
SHED	Shed
SHOP	Shop
SITE	Site
SL	Stall
STU	Studio
SE	Suite
TNHS	Townhouse
U	Unit
VLLA	Villa
WARD	Ward
WE	Warehouse

Note – these codes are enforced by the Enumerations file of the waeXML schema

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2.5 Hazard Codes

Code	Description
AH	Watch Above Head
BD	Beware of dogs
BT	Beware of trains
BW	Barbed Wire Fence
EF	Electric fence
SH	General hazard
SS	Slippery Surface
TH	Toot horn

Note – The Hazard Code is provided in StandingDataNotifications to Code Participants. The Hazard Description is required in SiteAccessNotifications when provided by Code Participants, the hazard should be described in full without abbreviations

2.6 Property Type Codes

The table contains one column of the following length:- Code – string (20) in the format shown below:

Code
Commercial
Domestic
Farm
Industrial
Un-metered Supply

Note – these codes are enforced by the WA_Extensions file of the waeXML schema

2.7 Customer Type Code

The permitted values of the Customer Type Code are specified on page 63 of the WA B2B Procedure Service Order Process document.

2.8 Floor or Level Type Codes

Code	Description
B	Basement
FL	Floor
G	Ground Floor
L	Level
LG	Lower Ground Floor
M	Mezzanine
UG	Upper Ground Floor

Note – these codes are enforced by the Enumerations file of the waeXML schema

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2.9   NMI Classification Codes

Code	Description
<5.7KW	Less than 5.7KW
>5.7KW	Greater than 5.7KW
SMALL	Less than 5.7KW
LARGE	Greater than 5.7KW
GENERATR	Generator
WHOLESAL	Wholesale Transmission Node Identifier
EPROFILE	External Profile Shape
SAMPLE	Sample Meter
INTERCON	Interconnector

Note – these codes are not enforced by the waeXML schema

2.10   NMI Status Codes

Code	Description
A	Active – means that the exit point or embedded network child is not greenfield and has at least one current meter.
D	De-energised – means that the meter is installed at the exit point but is de-energised or disconnected, temporarily preventing the supply of electricity.
X	Extinct – this means permanently disconnected such that electricity will never again be supplied at the exit point or embedded network child.
G	Green Field Site – means that the new connection service order for the exit point has not yet been completed.

Note – these codes are not enforced by the waeXML schema

2.11   Voltage Codes

Code	Description
HV	High Voltage
LV	Low Voltage

Note – these codes are enforced by the WA_Extensions file of the waeXML schema. Please note that EHV is not valid in WA, though it is permitted by the waeXML schema.

2.12   Contracted Maximum Demand Units of Measure

Code	Description
KVA	Kilovolt Ampere
KW	Kilowatt

Note – these codes are not enforced by the waeXML schema

2.13   Substation (TNI) Codes

Where the zone substation for a NMI is not known, a TNI of WNWI, WRIS or WSWI will be allocated depending on the network system to which the exit point belongs. The file contains four columns of the following length:- Code – string (4), Description – string (50), Location Zone – string (8) and Network System – string (4), in the format shown below:

Code	Description	Location Zone	Network System
WALB	Albany	MIXED	SWIS
WAMT	Amherst	URBAN	SWIS
…	…	…	…
WNWI	Unknown TNI in NWIS	N/A	NWIS
WRIS	Unknown TNI in Regional Area	N/A	REG
WSWI	Unknown TNI in SWIS	N/A	SWIS

Note – these codes are not enforced by the waeXML schema

The official list of TNI codes are published by the Independent Market Operator (IMO) and are available from the website of the Network Operator.

2.14 Distribution Loss Factor (DLF) Codes

The official list of DLF codes are published by the Independent Market Operator (IMO) and are available from the IMO.

2.15 Network Tariff Codes

The official list of Network Tariff codes are published in "Key to Codes Used in the Build Pack " and is available from the Build Pack area of Western Power's website.

Code	Description
AEB	Anytime Energy (Business)
AER	Anytime Energy (Residential)
CMDPRE	Contract Maximum Demand (Pre July 01)
….	….
LVCMDT	Transition Low Voltage CMD

Note – these codes are not enforced by the waeXML schema

2.16 Meter Installation Codes (InstallationTypeCode)

Code	Description
COMMS1	Type 1 Meter Installation with Communications
COMMS2	Type 2 Meter Installation with Communications
COMMS3	Type 3 Meter Installation with Communications
COMMS4	Type 4 Meter Installation with Communications
MRIM	Type 5 Manual Read Interval Meter
BASIC	Type 6 Basic Meter

Note – these codes are not enforced by the waeXML schema

2.17 Meter Status Codes

Code	Description
C	Current
D	De-Energised
R	Removed

Note – these codes are enforced by the Electricity file of the waeXML schema

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2.18 Customer Funded Meter Codes

Code	Description
YES	Customer has contributed to the meter
NO	Customer has not contributed to the meter

Note – these codes are enforced by the WA_Extensions file of the waeXML schema

2.19 Meter Requirements for Transfer Codes

The table contains one column of the following length:- Description – string (50) in the format shown below:

Code
no new meter or comms required
new meter required
comms required
new meter and comms required
program change required
program change and comms required

Note – these codes are not enforced by the waeXML schema

2.20 Meter Use Codes

Code	Description
AVERAGE	Where a check metering installation for a metering point satisfies the requirements under the Code for a revenue metering installation for the metering point, the average of the 2 validated data sets may be used to determine the energy measurement.
CHECK	A meter, other than a revenue meter, used as a source of metering data for Type 1 and Type 2 metering installations as specified in the Metering Code. (Section 3.13, Table 1)
LOGICAL	A meter that has been created for the purpose of calculating metering data, where a physical meter does not exist.
REVENUE	A meter that is used for obtaining the primary source of metering data.
SUB	A meter that is used to record metering data and is beyond the point of the Revenue Meter (this is determined by the wiring of the electrical installation).

Note – these codes are not enforced by the waeXML schema

2.21 Transaction Group Codes

Code	Description
CATS	Customer Transfers
CUST	Customer Details
MSGS	Message Acknowledgements
MTRD	Meter Data
NMID	NMI Data
SITE	Site Details
SORD	Service Order

Note – these codes are enforced by the Header file of the waeXML schema. Please note that not all the XSD allowed values are supported by WA. Only the above list is supported.

2.22 Change Reason Codes

Code	Description
1000	Customer Transfer
1025	Correction Transfer to reverse an Erroneous Transfer

Note – these codes are not enforced by the waeXML schema

2.23 Transfer / Change Status Codes

Code	Description
PEN	Transfer request is pending
CAN	Transfer request has been withdrawn
COM	Transfer has been completed

Note – these codes are not enforced by the waeXML schema

2.24 Phone Service Type Codes

Code
Fixed Voice
Mobile Voice
Fax
Modem
Pager

Note – these codes are enforced by the ClientInformation file of the waeXML schema

2.25 Person Name Type Codes

Code	Description
LGL	Legal Name
MDN	Maiden Name
BTH	Birth Name
TRB	Tribal Name
PRF	Preferred Name
AKA	Known As Name
XFR	Cross-Reference Name
STG	Stage Name

Note – these codes are enforced by the ClientInformation file of the waeXML schema

2.26 Role Status Codes

Code	Description
C	Current
N	New

Note – these codes are enforced by the WA_Extensions file of the waeXML schema

2.27 Time of Day Codes

Code	Description
ALLDAY	All Day
PEAK	Peak
OFFPEAK	Off Peak
HISHLDR	High Shoulder
LOSHLDR	Low Shoulder
DMA	Accumulated Maximum Demand (Greatest maximum demand from available interval demand)
DMI	Current Maximum Demand (Maximum demand for current calendar month)

Note – these codes are not enforced by the waeXML schema

2.28 Quality Flag

The Quality Flags that are used in the NEM12 and NEM13 format files are defined in the Metering Data File Format document that can be found on the NEMMCO website (http://nemmco.com.au/met_sett_sra/mdff.html)

2.29 Reason Codes

BC 10/7: Bevan yet to complete review of this table…

May need to review Interval reason codes, especially in relation to the "In Use" column.

Remove Comments Column after asking Kat

Reason Code	Reason Code Description	Comments	In Use
0	Free Text Description	?	N
1	Meter Removed	Y	Y
2	Too wet to read	N	Y?
3	Quarantine	Y	Y
4	Savage Dog	Y	Y
5	Meter Removed	?	N? (1)
6	Too Wet	?	Y?
7	Can't Locate Meter	Y	Y
8	Vacant Premises	Y	Y
9	Meter Change	Y	Y
10	Lock Seized	Y	Y
11	In Wrong Walk	Y	Y
12	Locked Premises	Y	Y
13	Locked Gate	Y	Y
14	Locked Meter Box	Y	Y
15	–Overgrown Access	Y	Y
16	Noxious Weeds	N	N
17	Unsafe Meters	N	N
18	Read Below Previous	N	N
19	Consumer Wanted	?	?
20	Meter Leaning	N	N

Reason Code	Reason Code Description	Comments	In Use
21	Switched Off	N	N
22	Meter Face Cover Unsealed	N	N
23	Meter Terminal Cover Unsealed	N	N
24	Active Link Unsealed	N	N
25	Neutral Link Unsealed	N	N
26	Service Fuse/Breaker Unsealed	N	N
27	Relay/Time Switch Unsealed	N	N
28	Damaged Meter	Y	Y
29	Hole in Relay	N	N
30	Meter Stop Sw On	N	N
31	Unsealed Contactor	N	N
32	Damaged Equipment	Y	Y
33	Faulty Relay	N	N
34	Meter Not In Hh	Y	N
35	Faulty Time clock	Y	Y
36	Meter Too High	Y	Y
37	Ladder Required	Y	Y
38	Unsafe Meter Room	Y	Y
39	Reverse Energy Observed	Y	Y
40	Check Time/Day	Y	Y
41	Meter Not Scrolling	Y	Y
42	Error Electric Meter	Y	Y
43	Power Outage	Y	Y
44	Caution Required	Y	Y
45	Readings Failed To Validate	N	N
46	Oppressive Heat	N	N
47	Refused Access	Y	Y
48	Time switch requires reset	Y	Y
49	Wet Paint	Y	Y
50	Wrong Tariff	N	N
51	Installation Demolished	Y	Y
52	Meter Access Blocked	Y	Y
53	Bees/Wasps In Meter Box	Y	Y
54	Meter box lid unhinged	Y	Y
55	Dial out of alignment	Y	Y
56	Meter box door jammed shut	Y	Y
57	Hot water on day rate	N	N
58	Meter Ok - Supply Failure	Y	Y
59	Cannot read meter display	Y	Y
60	Illegal Connection	Y	Y
61	Meter exposed to weather	Y	Y
62	Meter stopped/Reversing/Faulty	Y	Y
63	Meter tampered with	Y	Y
64	Key Required	Y	Y
65	Wrong Key Provided	Y	Y
66	Lock Damaged	Y	Y
67	Area flooded	Y	Y
68	Zero Consumption	N	N
69	Reading Exceeds Estimate	N	N
70	Probe Reports Tampering	Y	Y

Reason Code	Reason Code Description	Comments	In Use
71	Probe Read Error	Y	Y
72	Meter number/register number mismatch	Y	Y
73	Low Consumption	N	N
74	High Consumption	N	N
75	Customer Read (Not Supplied)	Y	Y
76	Communications Fault	?	?
77	Estimation Forecast	N	N
78	Null Data	Y	N
79	Power Outage Alarm	N	N
80	Short Interval Alarm	N	N
81	Long Interval Alarm	N	N
82	CRC Error	N	N
83	RAM Checksum Error	N	N
84	ROM Checksum Error	N	N
85	Data Missing Alarm	N	N
86	Clock Error Alarm	N	N
87	Reset Occurred	N	N
88	Watchdog Timeout Alarm	N	N
89	Time Reset Occurred	N	N
90	Test Mode	N	N
91	Load Control	N	N
92	Added Interval (Data Correction)	N	N
93	Replaced Interval (Data Correction)	N	N
94	Estimated Interval (Data Correction)	N	N
95	Pulse Overflow Alarm	N	N
96	Data Out Of Limits	N	N
97	Excluded Data	N	N
98	Parity Error	N	N
99	Energy Type (Register Changed)	N	N

2.30 Unit of Measurement (UOM) Codes

Code	Description
KWH	Kilowatt Hours
WH	Watt Hours
KVARH	KiloVolt Ampere Reactive Hours
VARH	Volt Ampere Reactive Hours
KVAR	Kilo Volt Ampere Reactive
VAR	Volt Ampere Reactive
KW	Kilowatts
W	Watts
KVAH	KiloVolt Ampere Hours
VAH	Volt Ampere Hours
KVA	KiloVolt Amperes
VA	Volt Amperes
KV	KiloVolts
V	Volts
KA	Current kiloAmps
A	Current Amps

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Code	Description
PF	Power Factor

2.31 Investigation Codes

The Investigation Codes usage guidelines and values can be found on pages 18-20 of the WA B2B Procedures Meter Data Process document.

Investigation Code	Business Rules
Confirm Reading For Vacant Site	This code is used where a substitution is provided for a vacant site and the Recipient reasonably believes the consumption is overstated.
Confirm Zero Consumption	This code is used where the Participant requires confirmation of a zero consumption value.
Incomplete Data	This code is used where the Participant reasonably believes that they have not received a complete set of data. For example, there is a gap in the provided data (eg one day's data is not provided for the period requested). This code must only be used following a Meter Data Request that has resulted in incomplete MDFF Data being provided.
Invalid MDFF Data	This code is used where the Participant reasonably believes that the MDFF Data does not match the configuration information in the MDFF Data. For example, a datastream is provided in the MDFF Data that does not match the *NMIConfiguration*.
Invalid Standing Data	This code is used where the Participant reasonably believes that the configuration data in the MDFF Data is not consistent with the Standing Data provided. The Participant must not use this code until the required timeframe for receiving standing data has passed.
Missing Datastream	This code is used where the Participant reasonably believes that the data is incomplete based on the configuration information provided in the MDFF file. This code must only be used following a Meter Data Request that has resulted in incomplete MDFF Data being provided.
Require Actual Reading or Substitute	This code is used where the Participant has received an Estimate reading and requires either an Actual or Substitute reading. This code must only be used following a Meter Data Request that has resulted in Estimated MDFF Data being provided.
Require Final Substitute	This code is used where the Participant has received a Substitute reading and requires a Final Substitute reading. This code must only be used following a Meter Data Request that has resulted in Substitute MDFF Data being provided.
Require Latest Version	This is where the correct latest version of the meter and configuration data (as provided in Standing Data) has not been made available to the Participant within the required timeframe. This code must only be used following a Meter Data Request.
Scheduled Reading Required	This code is used where the Participant reasonably believes that the Next Scheduled Read Date has lapsed and the MDFF Data has not been provided within the required timeframe.

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Investigation Code	Business Rules
	This code must only be used following a Meter Data Request that has resulted in Estimated MDFF Data being provided.
Service Order Reading Required	This code is used where the Participant has received a ServiceOrderResponse with a *ServiceOrderStatus* of "Partially Completed" or "Completed" and the associated MDFF Data has not been provided within the required timeframe. The Participant must use reasonable endeavours provide the Service Order Number in the *InvestigationDescription* field. This code must only be used following a Meter Data Request that has resulted in Estimated MDFF Data being provided.
Verify High Reading	This code is used where the Participant reasonably believes the meter reading is too high compared to the consumption history for the site, or following a customer complaint.
Verify Low Reading	This code is used where the Participant reasonably believes the meter reading is too low compared to the consumption history for the site, or following a customer complaint.
Other	Any other reason not covered by the other *InvestigationCodes*, or where multiple *InvestigationCodes* apply.

2.32 Meter Reading Schedule

The official list of Routes and their applicable schedule is available in the "Annual Reading Schedule" on Western Power's website and can be downloaded as a CSV file.

The file contains seventeen columns in the format shown below:

Route ID	Meter Read Method	Schedule Reading Day Number	Meter Read Frequency	Date of Future Read (1)	Date of Future Read (2)	Date of Future Read (......)	Date of Future Read (12)	Date of Future Read (13)
024DOW01	MV90	02	Day of Week (01-28)	03/01/2006	07/02/2006	....	07/11/2006	05/12/2006
034DOW01	MV90	03	Day of Week (01-28)	04/01/2006	08/02/2006	....	08/11/2006	06/12/2006
....	....	....	....	....	....	....	....	....
075FBA02	MVRS	07	Bi-Monthly (42 Working Days)	10/01/2006	09/03/2006	....		

2.33 Meter Read Method

Code	Description
AMR	Automated Meter Reading System
CSRPIR	Customer Supplied Reading - Phone In Reading
CSRSCR	Customer Supplied Reading - Self Read Card
CSRWP	Customer Supplied Reading - Web Portal
CSRBR	Customer Supplied Reading - Bulk Read
MVRS	Manually Read Basic Meter
MV90	Interval Meter (manual or remotely read)

2.34 Service Order Response Type

BC 10/7: Do we need this at all? Covered by the B2B doc SO pg ?.

Code
Closure

2.35 Service Order Completion Status

Service Order Completion Status codes can be found on page 67 of the WA B2B Procedures Service Order Process.

2.36 Service Order Type

The Service Order Type codes can be found on page 12 of the WA B2B Procedures Service Order Process.

2.37 Service Order Response Code

The Service Order Response codes can be found on pages 27-28 of the WA B2B Procedures Service Order Process.

2.38 Service Order Product Code

The complete list of Product codes are published in "Key to Codes Used in the Build Pack" and is available from the Build Pack area of Western Power's website.

Code	Description
CAN1	Cancel Metro
CAN2	Cancel Rural
DE1	De-energise
…	…
EM2	Exchange Meter
SPR2	Special Read

2.39 Service Order to Product Mapping

The complete list of Service Orders and related Product codes are published in "Key to Codes Used in the Build Pack " and is available from the Build Pack area of Western Power's website.

The data included in this spreadsheet includes:

- Service Order Type (eg Adds and Alts)

- Service Order Subtype (eg Exchange Meter)

- Completion Status (eg Completed)

- Network Zone (eg SWIN)

- Zone Type (eg Urban)

- Meter Install Code (eg Type 6 Basic Meter Installation)

- Meter Design (eg Electronic)

- Meter Configuration (eg CT – Current Transformer)

- Supply Phases (eg 1 Phase)

- Excluded Services Charge Description (eg EM1 : EXCL_EM1_Excl. Service Charge EM1 : From 22-May-2006)

2.40 Customer Details Notification Sensitive Load

The Sensitive Load codes can be found on page 19 of the WA B2B Procedures Customer and Site Details Process.

2.41 Customer Details Notification Movement Type

The Movement Type codes can be found on page 19 of the WA B2B Procedures Customer and Site Details Process.

2.42 Meter Data Notification Method Flags

The Meter Data Notification Method Flags reference referenced by the Schedule 7 of the WA Metrology Procedure, which can be found on the Metering and transfer codes page of the Network Operator's website:

(http://www.westernpower.com.au/mainContent/workingWithPower/NetworkAccessServices
/MeteringCodeCommunicationsRules.html).

2.43 Datastream Type

Code
Interval
Non-Interval
Consumption
Profile

2.44 Datastream Status Codes

Code	Description	Explanation
Active	Active MDM Datastream	This code is generated when an MDM datastream is to be used in the settlements process.
Inactive	Inactive MDM Datastream	This code is generated when an MDM datastream is not to be used in the settlements process.

2.45 Consumption Type

Code
Actual
Cumulative

2.46 Register Status Codes

Code	Description	Explanation
C	Current	This code is generated when a register on the meter is current (ie active).
R	Removed	This code is generated when a register has been removed from a meter.

2.47 Participant Role Codes

Code	Description
FRMP	Financially Responsible Market Participant
LNSP	Local Network service Provider
LR	Local Retailer
ROLR	Retailer of Last Resort
RP	Responsible Person

Note: Please see the Roles document for a description of the Roles used in the WAEM.

2.48 Supply Phases Codes

The Supply Phases codes are covered on page 65 of the WA B2B Procedures Service Order Process document.

2.49 Customer Details Request Reason Codes

The Request Reason codes can be found on page 17 of the WA B2B Procedures Customer and Site Details Process.

2.50 Metering Required

The Metering Requried codes are covered on page 65 of the WA B2B Procedures Service Order Process document.

2.51 Service Order Subtype

The Service Order Subtype codes are covered on pages 24-26 of the WA B2B Procedures Service Order Process document.

2.52 Installation Types

The Installation Type codes are covered on page 64 of the WA B2B Procedures Service Order Process document.

2.53 Service Time Types

Please note that although all of the following codes are accepted by the Network Operator, all values will be changed to "Business Hours" upon receipt.

Code
Any Time
Business Hours
Non-Business Hours

2.54 Meter Models

The official list of Meter Models are published in "Key to Codes Used in the Build Pack " and is available from the Build Pack area of Western Power's website.

Model ID	Model Description	Voltage	Phases	Current	Design	Interval Capable
E101	Electronic 1P LV Direct Non Int	LV	1	DIR - Direct Connect	Electronic	N
E102	Electronic 1P LV Direct Non Int	LV	1	DIR - Direct Connect	Electronic	N
E103	Electronic 1P LV Direct Int	LV	1	DIR - Direct Connect	Electronic	Y
…	…	…	…	…	…	…
E307	Electronic 3P CT Int	LV	3	CT – Current Transformer	Electronic	Y

2.55 Direction Indicator

Code
Import
Export