

CONTAX, Inc. — Intelligent Logistics

Ocean Freight Receipt and Invoice

ANSI X12 Transaction Set 310 · Version 4010

Transaction Set	310
Version	ANSI X12 Version 4010 (004010)
Functional Group ID	IO
Specification Version	2.0
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Introduction

This document defines the CONTAX implementation of the Ocean Freight Receipt and Invoice Transaction Set (310) under ANSI X12 Version 4010. It is intended for developers at ocean carriers configuring EDI invoice feeds to the CONTAX Intelligent Logistics (IL) platform.

The 310 transaction set is used by ocean carriers to provide a customer with an invoice for transportation and other charges related to shipments, including Original Invoices, Past Due Billings, Balance Due Bills, and Revisions. This guide normalizes the CONTAX 310 specification against the ANSI X12 Version 4010 standard, the Maersk Line X12 310 implementation (Stedi), and the Hamburg Sud X12 310 implementation (Stedi).

Key conventions:

- Req. Des. M = Mandatory; O = Optional; X = Conditional (see syntax notes).
- Dates use CCYYMMDD format. Times use HHMM or HHMMSS.
- B311 (SCAC) is mandatory for all 310 transmissions.
- GS01 must be IO for all 310 functional groups.
- ISA12 must be 00401 and GS08 must be 004010.
- ISA13 must be 9 digits, zero-padded, and must match IEA02 exactly. ST02 must match SE02.
- N722 (Equipment Type) and N702 (Equipment Number) are mandatory in every N7 segment.

Delimiters

Delimiter	Symbol	Hex	Description
Segment Terminator	~	0x7E	Terminates each segment
Data Element Separator	*	0x2A	Separates data elements within a segment
Component Separator	>	0x3E	Separates component elements within a composite

Requirement Designators

Code	Name	Definition
M	Mandatory	Must be present. Absence will cause rejection.
O	Optional	Include when the data is available and applicable.
X	Conditional	Required when a paired or related element is present. See Syntax Notes.

Transaction Set Map

Po s.	Se g.	Name	Re q.	Max Use	Loop Repea t	Notes
Interchange Control						
N/A	ISA	Interchange Control Header	M	1	—	Must Use
N/A	GS	Functional Group Header	M	1	—	Must Use — GS01 = IO
Header						
010	ST	Transaction Set Header	M	1	—	Must Use
020	B3	Beginning Segment for Carrier's Invoice	M	1	—	Must Use
03	B2	Set Purpose	O	1	—	Used — include on all transmissions

0	A					
06 0	N9	Reference Identification	O	15	—	Must Use — BM, BN, CT, PO, SI, FN, IK, CG, SCA
07 0	V1	Vessel Identification	M	2	—	Must Use — V101 or V102 required; V105 SCAC
11 0	C3	Currency	O	1	—	Used — ISO 4217 currency code
12 0	Y2	Container Details	O	10	—	Used — number and type of containers
13 0	N1	Name	M	1	10	Must Use — entity codes: BT CA CN SH AO C9 FP FW N1 N2
14 0	N2	Additional Name Information	O	1	N1	Used — second name line
15 0	N3	Address Information	O	2	N1	Used
16 0	N4	Geographic Location	O	1	N1	Used
18 0	R4	Port or Terminal	M	1	R4 × 20	Must Use — R L D E 1
19 0	DT M	Date/Time Reference	O	15	R4	Used — 139 140 035 161 369 378
20 0	R2	Route Information	O	13	—	Used — carrier SCAC and service type
21 0	K1	Remarks	O	12	—	Used — free-form carrier remarks
Detail						
01 0	LX	Assigned Number	M	1	LX × 999	Must Use — increments by 1 per container
02 0	N7	Equipment Details	M	1	N7	Must Use — N702 Equipment#, N722 ISO 6346 Type
02 5	QT Y	Quantity	O	1	N7	Used — QTY01=39 Shipped Qty
05 0	M7	Seal Numbers	O	5	N7	Used — container seal numbers
06 0	W0 9	Equipment and Temperature	O	1	N7	Used — reefer containers only
07 0	L1	Rate and Charges (Container Level)	O	1	L1	Must Use — per-container surcharges
08 0	C3	Currency	O	1	L1	Used
13 0	H1	Hazardous Material	O	1	H1	Used — IMDG/UNDG dangerous goods
15 0	L0	Line Item - Quantity and Weight	M*	1	L0 × 120	Must Use when loop entered
16 0	L5	Description, Marks and Numbers	O	999	L0	Used — commodity description
17 0	L1	Rate and Charges (Commodity Level)	O	1	L1	Used
18 0	C3	Currency	O	1	L1	Used

Summary						
010	L3	Total Weight and Charges	M	1	—	Must Use
030	L1	Rate and Charges (Summary Level)	O	1	L1	Used — invoice-level adjustments
040	C3	Currency	O	1	L1	Used
070	L11	Business Instructions and Reference Number	O	1	—	Used — BOL summary reference
080	SE	Transaction Set Trailer	M	1	—	Must Use
Interchange Control						
N/A	GE	Functional Group Trailer	M	1	—	Must Use
N/A	IEA	Interchange Control Trailer	M	1	—	Must Use

Interchange Control Segments

ISA — Interchange Control Header

Envelope · Position N/A · Mandatory · Max Use: 1

Purpose: To start and identify an interchange of one or more functional groups and interchange-related control segments.

Notes: ISA06 and ISA08 must be exactly 15 characters. ISA11 must be U. ISA12 must be 00401. ISA13 is 9 digits, zero-padded, and must match IEA02.

Data Element Summary

Req.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
M	ISA01	I01	Authorization Information Qualifier	M ID 2/2	00 = No Authorization Information Present
M	ISA02	I02	Authorization Information	M AN 10/10	Exactly 10 chars; pad with trailing spaces
M	ISA03	I03	Security Information Qualifier	M ID 2/2	00 = No Security Information Present
M	ISA04	I04	Security Information	M AN 10/10	Exactly 10 chars; pad with trailing spaces
M	ISA05	I05	Interchange ID Qualifier (Sender)	M ID 2/2	ZZ = Mutually Defined
M	ISA06	I06	Interchange Sender ID	M AN 15/15	Exactly 15 chars; carrier SCAC padded with spaces
M	ISA07	I05	Interchange ID Qualifier (Receiver)	M ID 2/2	ZZ = Mutually Defined
M	ISA08	I07	Interchange Receiver ID	M AN 15/15	CONTAX-assigned receiver ID, padded to 15 chars
M	ISA09	I08	Interchange Date	M DT 6/6	YYMMDD
M	ISA10	I09	Interchange Time	M TM 4/4	HHMM (24-hour clock)
M	ISA11	I10	Interchange Control Standards Identifier	M ID 1/1	U (fixed)
M	ISA12	I11	Interchange Control Version Number	M ID 5/5	00401 (fixed)
M	ISA13	I12	Interchange Control Number	M N0 9/9	9 digits, zero-padded. Must match IEA02.
M	ISA14	I13	Acknowledgment Requested	M ID 1/1	0 = None; 1 = Requested
M	ISA15	I14	Usage Indicator	M ID 1/1	P = Production Data; T = Test Data
M	ISA16	I15	Component Element Separator	M AN 1/1	> recommended. Must differ from element separator.

GS — Functional Group Header

Envelope · Position N/A · Mandatory · Max Use: 1

Purpose: To indicate the beginning of a functional group and to provide control information.

Notes: GS01 must be IO. GS06 must match GE02. GS08 must be 004010.

Data Element Summary

R e q.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
M	GS01	479	Functional Identifier Code	M ID 2/2	IO = Ocean Shipment Billing Details (310, 312, 980)
M	GS02	142	Application Sender's Code	M AN 2/15	Trading partner sender ID
M	GS03	124	Application Receiver's Code	M AN 2/15	CONTAX-assigned receiver code
M	GS04	373	Date	M DT 8/8	CCYYMMDD
M	GS05	337	Time	M TM 4/6	HHMM, HHMMSS
M	GS06	28	Group Control Number	M N0 1/9	Must match GE02
M	GS07	455	Responsible Agency Code	M ID 1/2	X = ASC X12
M	GS08	480	Version/Release/ Industry Identifier Code	M AN 1/12	004010 (fixed)

Heading

ST — Transaction Set Header

Header · Position 010 · Mandatory · Max Use: 1

Purpose: To indicate the start of a transaction set and assigns a control number.

Notes: ST02 must match SE02.

Data Element Summary

Req.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
M	ST01	143	Transaction Set Identifier Code	M ID 3/3	310 = Freight Receipt and Invoice (Ocean)
M	ST02	329	Transaction Set Control Number	M AN 4/9	Unique within the functional group. Must match SE02.

B3 — Beginning Segment for Carrier's Invoice

Header · Position 020 · Mandatory · Max Use: 1

Purpose: To transmit basic data relating to the carrier's invoice.

Syntax Notes:

- 1 If either B309 or B310 is present, then the other is required.

Semantic Notes:

- 1 B306 is the billing/invoice date.
- 2 On collect freight bills, B309 is the actual delivery date. For invoices prior to delivery, B309 is the estimated delivery date.
- 3 B311 (SCAC) is mandatory and identifies the issuing ocean carrier.

Data Element Summary

Req.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
O	B301	147	Shipment Qualifier	O ID 1/1	2 = Sea Waybill; B = Bill of Lading for Individual Shipment
M	B302	76	Invoice Number	M AN 1/22	Identifying number assigned by issuer; same as the BOL number
M	B304	146	Shipment Method of Payment	M ID 2/2	CC = Collect; PP = Prepaid (by Seller)
M	B306	373	Date (Invoice Date)	M DT 8/8	Date this 310 was issued. CCYYMMDD.
M	B307	193	Net Amount Due	M N2 1/12	Total charges to be paid. Implied 2 decimal places.
O	B308	202	Correction Indicator	O ID 2/2	AR = Adding Revenue; BE = Billing Error. Not required on original invoices.
X	B309	32	Delivery Date	X DT 8/8	Conditional — required if B310 is present. CCYYMMDD.
X	B310	374	Date/Time Qualifier	X ID 3/3	139 = Estimated; 140 = Actual. Required if B309 is present.
M	B311	140	Standard Carrier Alpha Code	M ID 2/4	SCAC of issuing carrier (e.g., MAEU, SUDU, CMDU).
O	B312	373	Date (Pickup/Departure Date)	O DT 8/8	Date shipment departed origin port.
O	B313	375	Tariff Service Code	O ID 2/2	CC, CD, DD, DP, HP, PD, PP

B2A — Set Purpose

Header · Position 030 · Optional · Max Use: 1

Purpose: To allow for positive identification of transaction set purpose.

Notes: Include B2A on all transmissions. Use code '00' for original invoices, '05' for corrections.

Data Element Summary

Req.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
M	B2A01	353	Transaction Set Purpose Code	M ID 2/2	00 = Original; 01 = Cancellation; 05 = Replace/Correct; 06 = Confirmation

N9 — Reference Identification

Header · Position 060 · Optional · Max Use: 15

Purpose: To transmit identifying information as specified by the Reference Identification Qualifier.

Syntax Notes:

- 1 At least one of N902 or N903 is required.
- 2 If N906 is present, then N905 is required.

Data Element Summary

R e q.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
M	N901	128	Reference Identification Qualifier	M ID 2/3	BM = Bill of Lading Number; BN = Booking Number; CB = Combined Shipment; CG = Consignee's Order Number; CT = Contract Number; FN = Forwarder's/Agent's Reference Number; IK = Invoice Number (Manufacturer); PO = Purchase Order Number; PR = Price Quote Number; SCA = Standard Carrier Alpha Code; SI = Shipper's Identifying Number for Shipment
X	N902	127	Reference Identification	X AN 1/30	Required unless N903 is present.
X	N903	369	Free-Form Description	X AN 1/45	Required unless N902 is present.

V1 — Vessel Identification

Header · Position 070 · Mandatory · Max Use: 2

Purpose: To provide vessel details and voyage number.

Syntax Notes:

- 1 At least one of V101 or V102 is required.
- 2 If V108 is present, then V101 is required.

Semantic Notes:

- 1 V103 is the code identifying the country in which the ship (vessel) is registered.
- 2 V105 identifies the ocean carrier operating the vessel.

Data Element Summary

Req.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
X	V101	597	Vessel Code	X ID 1/8	Lloyd's register number or radio call sign. Required if V108 is present.
X	V102	182	Vessel Name	X AN 2/28	Name of ship as documented in Lloyd's Register of Ships.
O	V103	26	Country Code	O ID 2/3	ISO 3166-1 alpha-2 code of country where vessel is registered.
O	V104	55	Flight/Voyage Number	O AN 2/10	Carrier voyage or service number.
O	V105	140	Standard Carrier Alpha Code	O ID 2/4	SCAC of the ocean carrier operating the vessel.
O	V108	897	Vessel Code Qualifier	O ID 1/1	C = Ship's Radio Call Signal; L = Lloyd's Register of Shipping
O	V109	91	Transportation Method/Type Code	O ID 1/2	S = Ocean

C3 — Currency [Header]

Header · Position 110 · Optional · Max Use: 1

Purpose: To specify the currency being used in the transaction set.

Semantic Notes: C301 is the billing currency. Use ISO 4217 three-character codes (e.g., USD, EUR, CNY, JPY).

Data Element Summary

Req.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
M	C301	100	Currency Code	M ID 3/3	ISO 4217 currency code. Required when this segment is present.

Y2 — Container Details

Header · Position 120 · Optional · Max Use: 10

Purpose: To specify container information and transportation service to be used.

Notes: Repeat once per container type. Y201 + Y204 are both mandatory when Y2 is included.

Data Element Summary

Req.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
M	Y201	95	Number of Containers	M N0 1/4	Count of containers of the specified equipment type.
O	Y202	78	Container Type Request Code	O ID 1/1	C = Containers with Chassis
M	Y204	24	Equipment Type	M ID 4/4	ISO 6346 4-character container size and type code (e.g., 22G1, 42G1, 45R1).

LOOP N1 — PARTY IDENTIFICATION (REPEATS UP TO 10)

N1 — Name

Header · Position 130 · Mandatory · Max Use: 1 per loop

Purpose: To identify a party by type of organization, name, and code.

Syntax Notes:

- 1 At least one of N102 or N103 is required.
- 2 If either N103 or N104 is present, then the other is required.

Data Element Summary

R e q.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
M	N101	98	Entity Identifier Code	M ID 2/3	AO = Account Of; BT = Bill-to-Party; C9 = Contract Holder; CA = Carrier; CN = Consignee; FP = Payer; FW = Forwarder; N1 = Notify Party No. 1; N2 = Notify Party No. 2; SH = Shipper
X	N102	93	Name	X AN 1/60	Free-form party name. Required unless N103/N104 are provided.
X	N103	66	Identification Code Qualifier	X ID 1/2	25 = Carrier's Customer Code; 92 = Assigned by Buyer or Buyer's Agent; 94 = Assigned by Ultimate Destination
X	N104	67	Identification Code	X AN 2/80	Party code per N103 qualifier. Required if N103 is present.

N2 — Additional Name Information

Header · Position 140 · Optional · Max Use: 1

Purpose: To specify additional names or those longer than 60 characters in length.

Data Element Summary

Req.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
M	N201	93	Name	M AN 1/60	Second line of party name.
O	N202	93	Name	O AN 1/60	Third line of party name, if needed.

N3 — Address Information

Header · Position 150 · Optional · Max Use: 2

Purpose: To specify the location of the named party.

Data Element Summary

Req.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
M	N301	166	Address Information	M AN 1/55	Street address line 1.
O	N302	166	Address Information	O AN 1/55	Street address line 2.

N4 — Geographic Location

Header · Position 160 · Optional · Max Use: 1

Purpose: To specify the geographic place of the named party.

Notes: N402 is required only if the city name (N401) is in the United States or Canada.

Data Element Summary

Req.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
O	N401	19	City Name	O AN 2/30	Free-form city name.
O	N402	156	State or Province Code	O ID 2/2	Standard state/province code. Required for U.S. and Canada.
O	N403	116	Postal Code	O ID 3/15	International postal zone code excluding punctuation and blanks.
O	N404	26	Country Code	O ID 2/3	ISO 3166-1 alpha-2 country code (e.g., US, DE, CN, HK).

LOOP R4 — PORT OR TERMINAL (REPEATS UP TO 20)

R4 — Port or Terminal

Header · Position 180 · Mandatory · Max Use: 1 per loop

Purpose: Contractual or operational port or point relevant to the movement of the cargo.

Syntax Notes:

- 1 If either R402 or R403 is present, then the other is required.

Notes: R4 is required for each port to be identified. Carriers must provide at minimum: Place of Receipt (R), Port of Loading (L), Port of Discharge (D), and Place of Delivery (E).

Data Element Summary

R e q.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
M	R401	115	Port or Terminal Function Code	M ID 1/1	1 = Final Port of Discharge (Operational); D = Port of Discharge; E = Place of Delivery; L = Port of Loading; R = Place of Receipt
X	R402	309	Location Qualifier	X ID 1/2	UN = United Nations Location Code (UNLOCODE). Required if R403 is present.
X	R403	310	Location Identifier	X AN 1/30	5-character UNLOCODE (e.g., USNYC, HKHKG). Required if R402 is present.
O	R404	114	Port Name	O AN 2/24	Free-form port name.
O	R405	26	Country Code	O ID 2/3	ISO 3166-1 alpha-2 country code.
O	R408	156	State or Province Code	O ID 2/2	For U.S. ports.

DTM — Date/Time Reference [Loop R4]

Header · Position 190 · Optional · Max Use: 15

Purpose: To specify pertinent dates and times.

Syntax Notes:

- 1 At least one of DTM02, DTM03, or DTM05 is required.
- 2 If DTM04 is present, then DTM03 is required.
- 3 If either DTM05 or DTM06 is present, then the other is required.

Notes: Follow each R4 segment with a DTM for the applicable date at that port.

Data Element Summary

Req.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
M	DTM01	374	Date/Time Qualifier	M ID 3/3	035 = Delivered; 139 = Estimated; 140 = Actual; 161 = Loaded on Vessel; 369 = Estimated Arrival; 378 = Estimated Departure
X	DTM02	373	Date	X DT 8/8	CCYYMMDD. Required unless DTM03 or DTM05 provided.
X	DTM03	337	Time	X TM 4/8	HHMM format. Conditional.

R2 — Route Information

Header · Position 200 · Optional · Max Use: 13

Purpose: To specify carrier and routing sequences and details.

Data Element Summary

Req.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
M	R201	140	Standard Carrier Alpha Code	M ID 2/4	SCAC of the carrier for this routing leg.
M	R202	133	Routing Sequence Code	M ID 1/2	O = Origin Carrier (Air, Motor, or Ocean)
O	R212	56	Type of Service Code	O ID 2/2	CP, HH, HP, PC, PH, PP

K1 — Remarks

Header · Position 210 · Optional · Max Use: 12

Purpose: To transmit information in a free-form format for comment or special instruction.

Notes: Carriers commonly use K1 for standard legal disclaimers. CONTAX captures all K1 segments. Repeat up to 12 times for lengthy text.

Data Element Summary

Req.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
M	K101	61	Free-Form Message	M AN 1/30	First 30-character line of free-form text.
O	K102	61	Free-Form Message	O AN 1/30	Second 30-character line of free-form text.

Detail

LOOP LX — CONTAINER LINE ITEM (REPEATS UP TO 999)

LX — Assigned Number

Detail · Position 010 · Mandatory · Max Use: 1 per loop

Purpose: To reference a line number in a transaction set.

Notes: A separate LX loop is required for each container in the shipment. LX01 must start at 1 and increment by 1 for each subsequent LX loop.

Data Element Summary

R e q.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
M	LX01	554	Assigned Number	M N0 1/6	Sequential counter: 1, 2, 3 ... for each LX loop.

LOOP N7 — EQUIPMENT DETAILS (1 PER LX LOOP)

N7 — Equipment Details

Detail · Position 020 · Mandatory · Max Use: 1

Purpose: To identify the equipment.

Syntax Notes:

- 1 If either N703 or N704 is present, then the other is required.
- 2 If either N705 or N716 is present, then the other is required.
- 3 If either N708 or N709 is present, then the other is required.

Notes: N701 + N702 together form the full container ID (e.g., MSCU + 1234567 = MSCU1234567). N722 Equipment Type uses ISO 6346 4-character codes (e.g., 22G1=20ft General Purpose, 42G1=40ft General Purpose, 45R1=40ft High Cube Reefer).

Data Element Summary

Req.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
O	N701	206	Equipment Initial (Container Prefix)	O AN 1/4	Alphabetic prefix of container ID. Strongly recommended (e.g., MSCU, MSKU, MAEU).
M	N702	207	Equipment Number	M AN 1/10	Numeric serial part of container ID, excluding prefix.
X	N703	81	Weight	X R 1/10	Gross weight of cargo. Required if N704 is present.
X	N704	187	Weight Qualifier	X ID 1/2	G = Gross Weight. Required if N703 is present.
X	N705	167	Tare Weight	X NO 3/8	Weight of empty equipment. Required if N716 is present.
X	N708	183	Volume	X R 1/8	Volume of cargo. Required if N709 is present.
X	N709	184	Volume Unit Qualifier	X ID 1/1	E = Cubic Feet; X = Cubic Meters. Required if N708 is present.
X	N716	571	Tare Qualifier Code	X ID 1/1	A = Actual. Required if N705 is present.
O	N717	188	Weight Unit Code	O ID 1/1	K = Kilograms; L = Pounds
O	N718	761	Equipment Number Check Digit	O N0 1/1	ISO 6346 check digit.
O	N719	56	Type of Service Code	O ID 2/2	CC, CD, DD, HH, HP, PC, PP
M	N722	24	Equipment Type	M ID 4/4	ISO 6346 4-character container size and type code (e.g., 22G1, 42G1, 42R1, 45R1).
O	N723	140	Standard Carrier Alpha Code	O ID 2/4	SCAC of equipment operator.

QTY — Quantity [Loop N7]

Detail · Position 025 · Optional · Max Use: 1

Purpose: To specify quantity information.

Data Element Summary

R e q.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
M	QTY0 1	673	Quantity Qualifier	M ID 2/2	39 = Shipped Quantity
O	QTY0 2	380	Quantity	O R 1/15	Number of pieces or units in this container.
O	QTY0 3/ C001- 01	355	Unit or Basis for Measurement Code	O ID 2/2	PC = Piece

M7 — Seal Numbers [Loop N7]

Detail · Position 050 · Optional · Max Use: 5

Purpose: To record seal numbers used and the organization that applied the seals.

Notes: Repeat M7 up to 5 times per container for multiple seals. Seal numbers are required by customs in many trade lanes.

Data Element Summary

R e q.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
M	M701	225	Seal Number	M AN 2/15	Unique number on seal.
O	M702	225	Seal Number	O AN 2/15	Second seal, if applicable.
O	M703	225	Seal Number	O AN 2/15	Third seal, if applicable.
O	M704	225	Seal Number	O AN 2/15	Fourth seal, if applicable.
O	M705	98	Entity Identifier Code	O ID 2/3	CA = Carrier; LW = Customer; SH = Shipper

W09 — Equipment and Temperature [Loop N7]

Detail · Position 060 · Optional · Max Use: 1

Purpose: To relate equipment type and required temperatures.

Syntax Notes:

- 1 If either W09-02 or W09-03 is present, then the other is required.

Notes: Include W09 for all refrigerated or temperature-controlled containers (e.g., N722 = 22R1, 45R1, 22H1).

Data Element Summary

Req.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
M	W0901	40	Equipment Description Code	M ID 2/2	CN = Container; CZ = Refrigerated Container
X	W0902	408	Temperature	X R 1/4	Required set-point. Negative values use '-'; decimal separator '.'. Required if W0903 present.
X	W0903	355	Unit or Basis for Measurement Code	X ID 2/2	CE = Centigrade/Celsius; FA = Fahrenheit. Required if W0902 present.
O	W0908	488	Percent (Humidity)	O N0 1/3	Humidity percentage: 0 to 100.
O	W0909	380	Quantity (Ventilation)	O R 1/15	Air exchanges per hour expressed as CBM/hr.

LOOP L1 — RATE AND CHARGES — CONTAINER LEVEL (1 PER SURCHARGE LINE, WITHIN N7)

L1 — Rate and Charges (Container Level)

Detail · Position 070 · Optional · Max Use: 1

Purpose: To specify rate and charges detail relative to a container including freight charges, advances, special charges, and entitlements.

Syntax Notes:

- 1 If either L102 or L103 is present, then the other is required.
- 2 If either L117 or L118 is present, then the other is required.

Notes: Use one L1 loop per surcharge line at the container level. Common codes: BAS (base freight), BSC (bunker), DTC (destination THC), SAJ (surcharge dollar).

Data Element Summary

Req.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
O	L101	213	Lading Line Item Number	O N0 1/3	Matches LX01 for this container.
X	L102	60	Freight Rate	X R 1/9	Rate per unit. Required if L103 present.
X	L103	122	Rate/Value Qualifier	X ID 2/2	BL, CM, ER, PA, PS, PW, PZ, WM. Required if L102 present.
O	L104	58	Charge	O N2 1/12	Charge amount in transaction currency. Implied 2 decimal places.
O	L108	150	Special Charge or Allowance Code	O ID 3/3	BAS, BLC, BSC, BUA, CAC, CHG, CLN, CON, CUF, DTC, EMS, EPC, EXP, HAZ, HHB, ODF, PBL, SAJ, SEG
O	L111	16	Charge Method of Payment	O ID 1/1	E = Collect; P = Prepaid
O	L112	276	Special Charge Description	O AN 2/25	Free-form charge description when L108 code is not sufficient.
X	L117	220	Billed/Rated-as Quantity	X R 1/11	Quantity basis for this charge. Required if L118 present.
X	L118	221	Billed/Rated-as Qualifier	X ID 2/2	BX = Box; NR = Container. Required if L117 present.

C3 — Currency (Container Level)

Detail · Position 080 · Optional · Max Use: 1

Purpose: To specify the currency being used for container-level charges.

Data Element Summary

Req.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
M	C301	100	Currency Code	M ID 3/3	ISO 4217 currency code. Required when this segment is present.

LOOP H1 — HAZARDOUS MATERIAL (WITHIN N7 — IMDG DANGEROUS GOODS ONLY)

H1 — Hazardous Material

Detail · Position 130 · Optional · Max Use: 1

Purpose: To specify information relative to hazardous material.

Syntax Notes:

- 1 If either H107 or H108 is present, then the other is required.

Notes: Provide H1 for each IMDG hazard class in the container. If the proper shipping name exceeds 30 characters, the text will be split: first 30 characters in H104, remainder in H106.

Data Element Summary

R e q.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
M	H101	62	Hazardous Material Code	M AN 4/10	UN/UNDG number (e.g., 1263 for Paint, 2187 for Ethylene).
O	H102	209	Hazardous Material Class Code	O AN 1/4	IMDG hazard class (e.g., 3, 8, 6.1, 4.1).
O	H103	208	Hazardous Material Code Qualifier	O ID 1/1	I = IMO Code; U = United Nations
O	H104	64	Hazardous Material Description	O AN 2/30	Proper shipping name (first 30 characters).
O	H105	63	Hazardous Material Contact	O AN 1/24	Emergency contact name and phone number.
O	H106	200	Hazardous Materials Page	O AN 1/6	UN/IMDG page reference or continuation of H104 when > 30 chars.
X	H107	77	Flashpoint Temperature	X N0 1/3	Lowest ignition temp, whole numbers only. Required if H108 present.
X	H108	355	Unit or Basis for Measurement Code	X ID 2/2	CE = Centigrade/Celsius; FA = Fahrenheit. Required if H107 present.

LOOP L0 — LINE ITEM QUANTITY AND WEIGHT (WITHIN LX LOOP, REPEATS UP TO 120)

L0 — Line Item - Quantity and Weight

Detail · Position 150 · Mandatory* · Max Use: 1

Purpose: To specify quantity, weight, volume, and type of service for a line item. (* M when loop is entered; loop entry is Optional.)

Syntax Notes:

- 1 If either L004 or L005 is present, then the other is required.
- 2 If either L006 or L007 is present, then the other is required.
- 3 If either L008 or L009 is present, then the other is required.

Data Element Summary

R e q.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
O	L001	213	Lading Line Item Number	O N0 1/3	Sequential commodity line number.
X	L002	220	Billed/Rated-as Quantity	X R 1/11	Rating basis quantity. Required if L003 present.
X	L003	221	Billed/Rated-as Qualifier	X ID 2/2	Qualifier for L002. Required if L002 present.
X	L004	81	Weight	X R 1/10	Cargo weight. Required if L005 present.
X	L005	187	Weight Qualifier	X ID 1/2	A1, G, N, T. Required if L004 present.
X	L006	183	Volume	X R 1/8	Cargo volume. Required if L007 present.
X	L007	184	Volume Unit Qualifier	X ID 1/1	E = Cubic Feet; X = Cubic Meters. Required if L006 present.
X	L008	80	Lading Quantity	X N0 1/7	Number of pieces or units. Required if L009 present.
X	L009	211	Packaging Form Code	X ID 3/3	BAG, BDL, BOX, CAS, CTN, PCS, PLT, ROL, SKD. Required if L008 present.
O	L011	188	Weight Unit Code	O ID 1/1	K = Kilograms; L = Pounds

L5 — Description, Marks and Numbers [Loop L0]

Detail · Position 160 · Optional · Max Use: 999

Purpose: To specify the line item in terms of description, quantity, packaging, and marks and numbers.

Syntax Notes:

- 1 If either L503 or L504 is present, then the other is required.
- 2 If either L508 or L509 is present, then the other is required.

Data Element Summary

R e q.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
O	L501	213	Lading Line Item Number	O N0 1/3	Matches L001.
O	L502	79	Lading Description	O AN 1/50	Commodity description. Include PO/reference numbers as needed.
X	L503	22	Commodity Code	X AN 1/30	HS / Schedule B code if available. Required if L504 present.
O	L506	87	Marks and Numbers	O AN 1/48	Container/carton marks and numbers.

LOOP L1 — RATE AND CHARGES — COMMODITY LEVEL (WITHIN L0 LOOP, REPEATS UP TO 20)

L1 — Rate and Charges (Commodity Level)

Detail · Position 170 · Optional · Max Use: 1

Purpose: To specify rate and charges detail relative to a commodity line item.

Syntax Notes:

- 1 If either L102 or L103 is present, then the other is required.
- 2 At least one of L104, L105, or L106 is required when this segment is used.
- 3 If either L117 or L118 is present, then the other is required.

Data Element Summary

Req.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
O	L101	213	Lading Line Item Number	O N0 1/3	
X	L102	60	Freight Rate	X R 1/9	Required if L103 present.
X	L103	122	Rate/Value Qualifier	X ID 2/2	See container-level L103 code list. Required if L102 present.
X	L104	58	Charge	X N2 1/12	At least one of L104, L105, or L106 required.
X	L105	191	Advances	X N2 1/9	Incidental transportation charges.
O	L108	150	Special Charge or Allowance Code	O ID 3/3	See container-level L108 code list.
O	L111	16	Charge Method of Payment	O ID 1/1	E = Collect; P = Prepaid
O	L112	276	Special Charge Description	O AN 2/25	
X	L117	220	Billed/Rated-as Quantity	X R 1/11	Required if L118 present.
X	L118	221	Billed/Rated-as Qualifier	X ID 2/2	BX = Box; NR = Container. Required if L117 present.

C3 — Currency (Commodity Level)

Detail · Position 180 · Optional · Max Use: 1

Purpose: To specify the currency being used for commodity-level charges.

Data Element Summary

Req.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
M	C301	100	Currency Code	M ID 3/3	ISO 4217 code.

Summary

L3 — Total Weight and Charges

Summary · Position 010 · Mandatory · Max Use: 1

Purpose: To specify the total shipment in terms of weight, volume, rates, charges, advances, and prepaid amounts applicable to one or more line items.

Syntax Notes:

- 1 If either L301 or L302 is present, then the other is required.
- 2 If either L309 or L310 is present, then the other is required.
- 3 If L312 is present, then L301 is required.

Data Element Summary

R e q.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
X	L301	81	Weight	X R 1/10	Total gross weight of shipment.
X	L302	187	Weight Qualifier	X ID 1/2	A1, G, N, T. Required if L301 present.
X	L309	183	Volume	X R 1/8	Total volume.
X	L310	184	Volume Unit Qualifier	X ID 1/1	E = Cubic Feet; X = Cubic Meters. Required if L309 present.
O	L311	80	Lading Quantity	O N0 1/7	Total piece/unit count.
O	L312	188	Weight Unit Code	O ID 1/1	K = Kilograms; L = Pounds

LOOP L1 — RATE AND CHARGES — SUMMARY LEVEL

L1 — Rate and Charges (Summary Level)

Summary · Position 030 · Optional · Max Use: 1

Purpose: To specify rate and charges detail at the invoice level, including invoice-level adjustments, totals, or charges that apply to the entire shipment.

Syntax Notes:

- 1 If either L102 or L103 is present, then the other is required.
- 2 If either L117 or L118 is present, then the other is required.

Data Element Summary

Req.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
O	L101	213	Lading Line Item Number	O N0 1/3	
X	L102	60	Freight Rate	X R 1/9	
X	L103	122	Rate/Value Qualifier	X ID 2/2	See container-level L103 code list.
O	L104	58	Charge	O N2 1/12	Invoice-level charge amount.
O	L108	150	Special Charge or Allowance Code	O ID 3/3	See container-level L108 code list.
O	L111	16	Charge Method of Payment	O ID 1/1	E = Collect; P = Prepaid
O	L112	276	Special Charge Description	O AN 2/25	
X	L117	220	Billed/Rated-as Quantity	X R 1/11	
X	L118	221	Billed/Rated-as Qualifier	X ID 2/2	BX = Box; NR = Container

C3 — Currency (Summary Level)

Summary · Position 040 · Optional · Max Use: 1

Purpose: To specify the currency for summary-level charges.

Data Element Summary

Req.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
M	C301	100	Currency Code	M ID 3/3	ISO 4217 code.

L11 — Business Instructions and Reference Number

Summary · Position 070 · Optional · Max Use: 1

Purpose: To specify instructions in this business relationship or a reference number.

Syntax Notes:

- 1 If either L1101 or L1102 is present, then the other is required.
- 2 At least one of L1101 or L1103 is required.

Notes: Include L11 with L1102=BM and L1101= the bill of lading number on every 310 to provide a summary-level BOL reference tying the invoice to the transport document.

Data Element Summary

Req. Qual.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
O	L1101	127	Reference Identification	O AN 1/30	Bill of lading number. Required if L1103 absent.
O	L1102	128	Reference Identification Qualifier	O ID 2/3	BM = Bill of Lading Number
O	L1103	352	Description	O AN 1/80	Free-form reference description.

SE — Transaction Set Trailer

Summary · Position 080 · Mandatory · Max Use: 1

Purpose: To indicate the end of the transaction set and provide the count of the transmitted segments (including the beginning ST and ending SE segments).

Notes: SE is the last segment of each transaction set. SE01 must equal the exact total number of segments from ST through SE inclusive.

Data Element Summary

Req.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
M	SE01	96	Number of Included Segments	M N0 1/10	Total count including ST and SE.
M	SE02	329	Transaction Set Control Number	M AN 4/9	Must equal ST02.

GE — Functional Group Trailer

Envelope · Position N/A · Mandatory · Max Use: 1

Purpose: Indicates the end of a functional group.

Notes: GE02 must match GS06.

Data Element Summary

Req.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
M	GE01	97	Number of Transaction Sets Included	M N0 1/6	Total transaction sets in the functional group.
M	GE02	28	Group Control Number	M N0 1/9	Must match GS06.

IEA — Interchange Control Trailer

Envelope · Position N/A · Mandatory · Max Use: 1

Purpose: Defines the end of the interchange.

Data Element Summary

Req.	Ref. Des.	Data Elem.	Name	Req / Type / Size	Notes & Valid Values
M	IEA01	I16	Number of Included Functional Groups	M N0 1/5	Count of functional groups.
M	IEA02	I12	Interchange Control Number	M N0 9/9	Must match ISA13 exactly. Nine digits, zero-padded.

Validation Rules and Error Handling

Control Number Matching

Rule / Condition	Requirement / Resolution
ISA13 = IEA02	Interchange control numbers must match exactly.
GS06 = GE02	Group control numbers must match exactly.
ST02 = SE02	Transaction set control numbers must match exactly.
SE01 = Segment Count	SE01 must equal the exact count of all segments from ST through SE inclusive.

Conditional Element Pairs

Both elements in each pair must be present when either one is used:

Rule / Condition	Requirement / Resolution
B3: B309 Delivery Date / B310 Date-Time Qualifier	If either is present, both are required.
N7: N703 Weight / N704 Weight Qualifier	If either is present, both are required.
N7: N705 Tare Weight / N716 Tare Qualifier Code	If either is present, both are required.
N7: N708 Volume / N709 Volume Unit Qualifier	If either is present, both are required.
R4: R402 Location Qualifier / R403 Location ID	If either is present, both are required.
W09: W0902 Temperature / W0903 Unit of Measure	If either is present, both are required.
L1: L102 Freight Rate / L103 Rate-Value Qualifier	If either is present, both are required.
L1: L117 Billed Quantity / L118 Billed Qualifier	If either is present, both are required.
H1: H107 Flashpoint Temp / H108 Unit of Measure	If either is present, both are required.
L3: L301 Weight / L302 Weight Qualifier	If either is present, both are required.
L3: L309 Volume / L310 Volume Unit Qualifier	If either is present, both are required.

Common Rejection Reasons

Rule / Condition	Requirement / Resolution
ISA / GS / ST control number mismatch	Ensure ISA13=IEA02, GS06=GE02, ST02=SE02.
SE01 segment count incorrect	Recount all segments ST through SE inclusive.
B311 (SCAC) missing	B311 is Mandatory — include your 4-character SCAC code.
N722 (Equipment Type) missing	N722 is Mandatory — provide ISO 6346 4-character equipment type code.
N702 (Equipment Number) missing	N702 is Mandatory — include the container serial number.
V1 missing Vessel Code AND Vessel Name	At least one of V101 or V102 must be present.
B309 present without B310 (or vice versa)	Both B309 and B310 must be present together.
Date not in CCYYMMDD format	All DT-type elements require 8-digit CCYYMMDD format.

ISA12 not '00401'	CONTAX requires ISA12 = 00401.
GS01 not 'IO'	All 310 transactions must use GS01 = IO.
GS08 not '004010'	Version identifier must be 004010.
L1 charge present without L103	If L102 (rate) is present, L103 (qualifier) is required.

Transmission and Connectivity

Rule / Condition	Requirement / Resolution
AS2	Preferred method. Real-time acknowledgment. ISA06 = carrier SCAC; ISA08 = CONTAX-assigned ID.
SFTP	File drop, scheduled processing. Credentials provided by CONTAX onboarding team.
VAN	Supported via major Value-Added Networks. Contact CONTAX for routing instructions.

Use ISA15 = T for test transmissions. Test files are validated but do not post to production invoicing. CONTAX returns a 997 Functional Acknowledgment for each received functional group. Rejection codes in the 997 identify the specific segment and element in error.

EDI Integration Support: edi-support@contax.com | Include your SCAC, trading partner name, and test file samples.

Appendix A — Annotated EDI Sample

A complete 310 transaction with one dry container, multiple charge lines. All required segments are present.

```

ISA*00*                *00*                *ZZ*MAEU                *ZZ*CONTAX
*260617*1430*U*00401*000005001*0*P*>~
GS*IO*MAEU*CONTAX*20260617*1430*5001*X*004010~
ST*310*50010001~
B3*2*MAEUBLA123456**CC**20260617*250000**20260801*140*MAEU*20260510*DD~
B2A*00~
N9*BM*MAEUBLA123456~
N9*BN*BKG987654321~
N9*CT*CTR-2026-44512~
V1*9HJK2*MAERSK EINDHOVEN*DK*626E*MAEU***L~
C3*USD~
N1*SH*GLOBAL EXPORTS LTD*25*SH-00441~
N3*100 TRADE PARK DRIVE*SUITE 400~
N4*DALLAS*TX*75201*US~
N1*CN*PACIFIC RIM IMPORTS INC*25*CN-00882~
N3*88 HARBOUR VIEW ROAD~
N4*HONG KONG***HK~
N1*FW*GLOBAL FREIGHT SOLUTIONS*25*FW-00113~
N1*BT*PACIFIC RIM IMPORTS INC*25*CN-00882~
R4*R*UN*USDAL*DALLAS*US***TX~
DTM*161*20260510~
R4*L*UN*USLGB*LONG BEACH*US***CA~
DTM*140*20260515~
R4*D*UN*HKHKG*HONG KONG*HK~
DTM*139*20260801~
R4>E*UN*HKHKG*HONG KONG*HK~
DTM*139*20260803~
R2*MAEU*0*****DD~
K1*This EDI message is transmitted for*informational purposes only.~
LX*1~
N7*MSKU*0575479*22000*G*3800***61.330*X*****0040*A*K*0*DD***42G1*MAEU~
QTY*39*1748*PC~
M7*SEAL12345***CA~
L1*1*1800*PS*180000****BAS***P*OCEAN FREIGHT*****180000*NR~
L1*1*350*PS*35000****BSC***P*BUNKER SURCH*****1*NR~
L1*1*200*PS*20000****DTC***P*DEST THC*****1*NR~
L0*1***22000*G*61.330*X*1748*PCS**K~
L5*1*EARTHENWARE - POs 527100/527003 FREIGHT PREPAID~
L5*1*ALSO NOTIFY: PACIFIC RIM IMPORTS TEL +852 2234 5678~
L3*22000*G*****61.330*X*1748*K~
L11*MAEUBLA123456*BM*Bill of Lading~
SE*49*50010001~
GE*1*5001~
IEA*1*000005001~
    
```

Revision History

Rule / Condition	Requirement / Resolution
Version 1.0 — 2022-01-13	Initial release. Basic segment set: ST, B3, N9, V1, C3, Y2, N1/N3/N4, R4/DTM, LX, N7, L0, L5, L1, L3, SE.
Version 2.0 — 2026-06-17	Full normalization against ANSI X12 4010, Maersk 310 (Stedi), and Hamburg Sud 310 (Stedi). Reformatted to CONTAX EDI 214 specification style. Added: ISA/GS envelope specification; B2A; B301, B308, B309/B310 conditional pair, B313; N2 in N1 Loop; expanded entity and reference qualifier codes; V105, V108, V109; R2, K1; expanded R401 port function codes and DTM01 qualifiers; QTY, M7, W09, H1 Loop, container-level L1 Loop, Summary L1 Loop, L11; validation rules, conditional element pairs table, rejection codes, connectivity section, and annotated EDI sample.