

Model UX – Special Products

EDI can customize any of its underground products or design special products to meet the unique requirements of a particular application. These products are designated as Model UX followed by a sequence number. Contact us for additional information on any of these products.

Special and Custom Underground Products:

<u>Model</u>	<u>Description</u>
UX01 (UL50)	Model UX01 is a variant of Model UL bagged underground reference. The gel chamber has been enlarged to extend the design life to 50 years. It is used in similar applications as the Model UL but where extended service life is desired. Redesignated Model UL50.
UX02 (US50)	Model UX02 is a variant of Model US SlimLine underground reference. The gel chamber has been enlarged to extend the design life to 50 years. It is used in similar applications as the Model US but where extended service life is desired. Redesignated Model US50
UX03	Model UX03 is a variant of Model UD SlimLine dual element underground reference. The zinc element has been replaced with platinum for elevated temperature service such as beneath aboveground storage tanks containing heated product.
UX04	Model UX04 is a variant of Model US SlimLine underground reference. A rod coupon has been fitted on the end to enable installation in a bored hole.
UX05	Model UX05 is a zinc probe surrounded by backfill and contained in a small cotton bag.
UX06	Model UX06 is a sub-sized variant of Model US. Model UX06 has a 25 year design life; Model UX06A has a 12 year design life.
UX07	Model UX07 is a variant of Model UC underground CP coupon. The coupon exposed area can be varied from 6 to 65 sq. cm.
UX08	Model UX08 is a cylindrical metal coupon, either steel or ductile iron.
UX09	Model UX09 is a variant of Model UL bagged underground reference. It has been adapted for installation at the bottom of a test station riser.
UX10	Model UX10 is a multiple reference assembly consisting of 2 USs plus a ½ inch (1.2 cm) diameter rod coupon encased in cement. The entire assembly is contained in a cotton bag and encapsulated in backfill.

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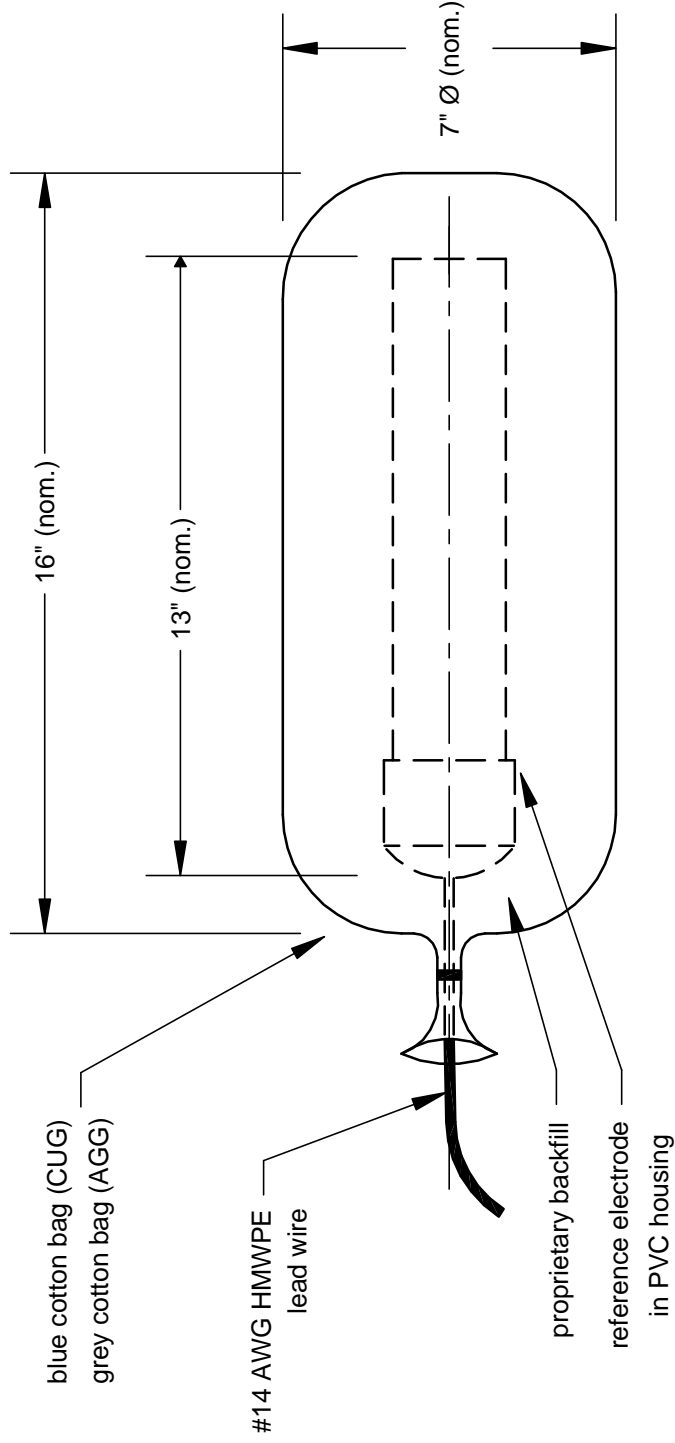
*U Series
Underground
Reference
Electrodes*



Model UX01 - 50 year (nom.) design life

Specify as EDI Model UX01-xxx-yy
where xxx is element type and yy is termination type

Model UX01 is a variation of Model UL. The gel chamber has been enlarged to extend design life. This model has been re-designated as EDI Model UL50.



Element Types

AGG = Ag/AgCl (saturated, gelled)
CUG = Cu/CuSO4 (saturated, gelled)

Termination Types

SW = 50' #14 AWG HMWPE lead wire
LWnnn = nnn' #14 AWG HMWPE lead wire

Installation

Remove bagged element from shipping carton.

Place in position in hole.

Thoroughly saturate the bag with potable water; use at least 5 gallons.

Measure and record potential of permanent electrode using a calibrated portable reference electrode.

Refill hole with suitable backfill.

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Permanent Underground Reference

SCALE 1/4

DATE 12/04/02

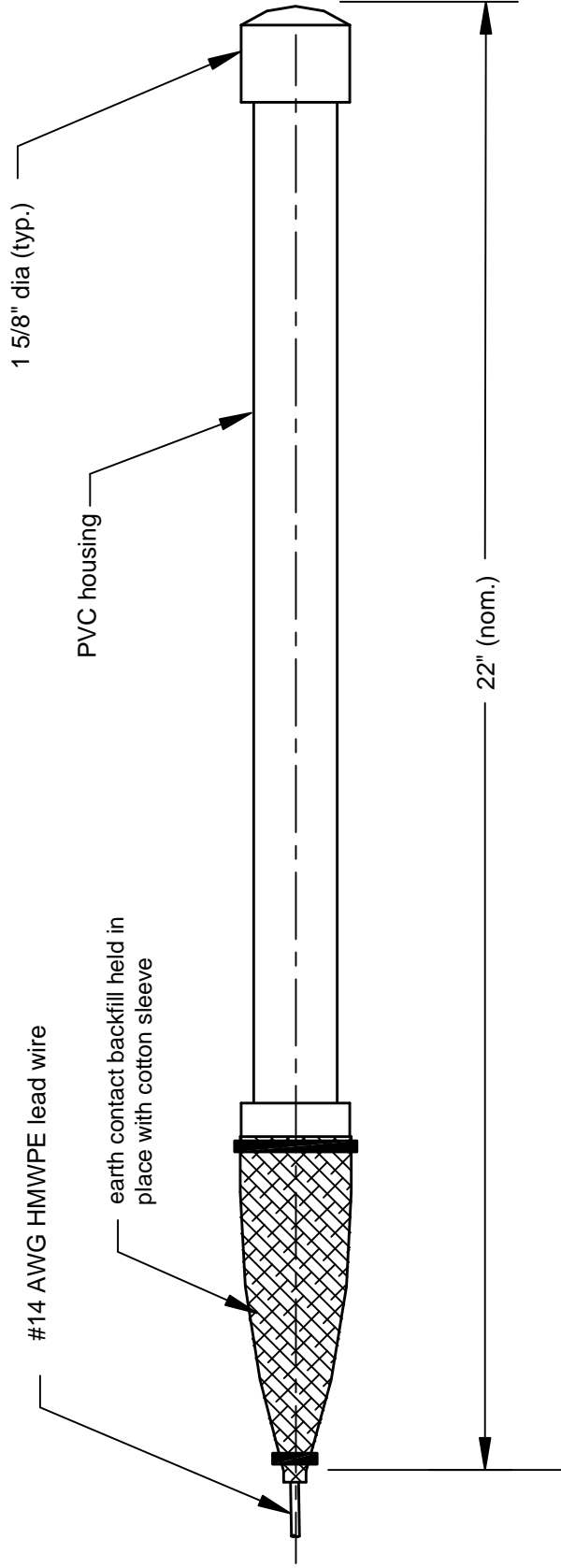
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DRAWING NUMBER

UX01ASY

Model UX02 - 50 year (nom.) design life

Model UX02 is a variation of Model US. The gel chamber has been enlarged to extend design life. This model has been re-designated as: EDI Model US50.



Specify as Model UX02-xxx-yy where

xxx is element type and
yy is termination type

Element Types

AGG = Ag/AgCl (saturated, gelled)
CUG = Cu/CuSO4 (saturated, gelled)

Termination Types

SW - 50' #14AWG HMWPE lead wire
LWnnn - nnn' #14 AWG HMWPE lead wire

Refer to the following EDI drawings for installation guidance:
USAPP1 - Installation in a bore hole
USAPP2 - Installation beneath an above ground storage tank
USAPP3 - Installation in a test station riser

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SlimLine™ Underground Reference

SCALE 3/8

DATE 12/04/02

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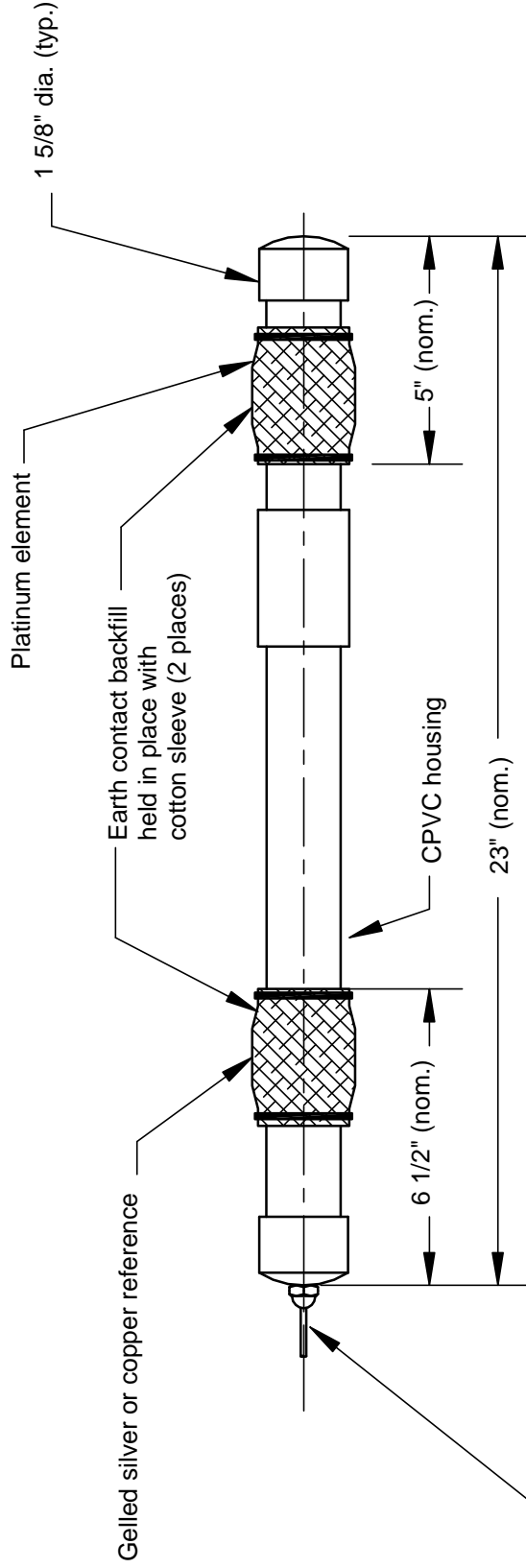
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UX02ASY

Specify as EDI Model UX03-xxx-LWnnn where
 xxx is element type and
 nnn is cable length in feet

Element Types

AGG = Ag/AgCl (saturated, gelled) plus zinc
 CUG = Cu/CuSO4 (saturated, gelled) plus zinc



Model UX03 is a variation of Model UD. It is intended for use in elevated temperature underground applications.

Model UX03 is limited to a maximum service temperature of 200F. When it is used beneath a storage tank containing heated product, it should be buried deep enough so that the temperature at the electrode is below 200F.

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Elev. Temp. Underground Reference

Conventional Cu/CuSO4 and Ag/AgCl references have a reduced life expectancy at elevated temperatures. The platinum element on the UX03 is calibrated against the other element during the period when both are functioning properly. Once the other element has stopped working, readings can continue to be made with the platinum element.

SCALE 1/4

DATE 12/04/02

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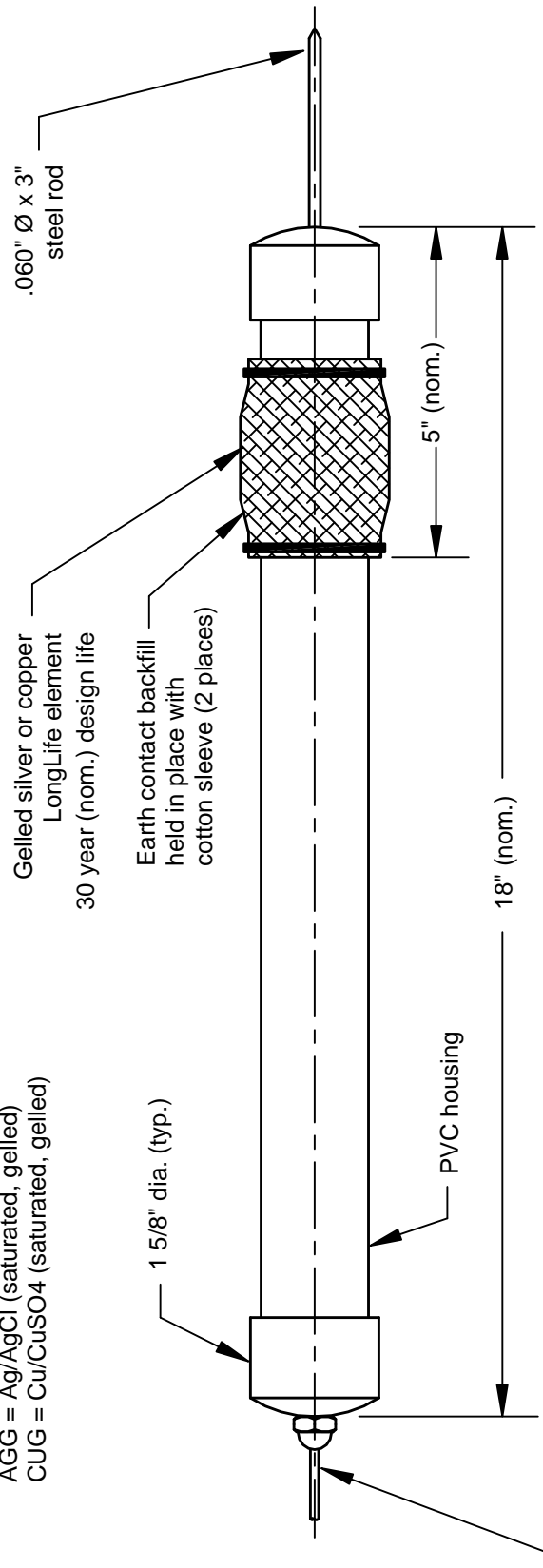
UX03ASY

Model UX04 is a variant of Model US1. It is intended for installation in bored holes.

Specify as EDI Model UX04-xxx-LWnnn where
 xxx is element type and
 nnn is cable length in feet

Element Types

AGG = Ag/AgCl (saturated, gelled)
 CUG = Cu/CuSO4 (saturated, gelled)



Install by pressing steel rod into undisturbed soil. Use fine backfill in area around cotton bag.

This sensor can be used as a cathodic protection coupon, the working electrode for three electrode linear polarization tests, or as one electrode for semi-quantitative resistivity measurements on soil between electrode and structure.

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Underground Reference with Sensor

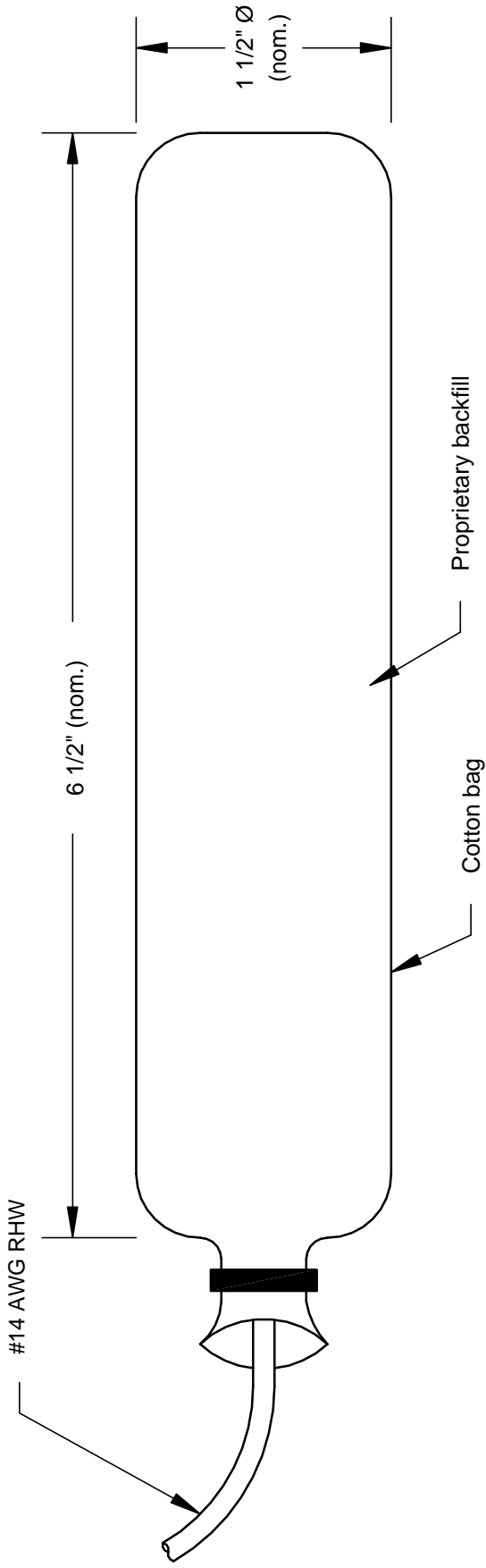
SCALE 3/8

DATE 04/14/03

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DRAWING NUMBER UX04ASY

Model UX05x-ZIN-LWnnn



Note:
nnn in model designation refers to wire length in feet
x in model designation refers to design life
A = extended life, B = standard life

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Encapsulated Zinc Underground Probe

SCALE	FULL	DATE	06/28/00	DRAWN BY	FJA	DRAWING NO.	UX05ASY
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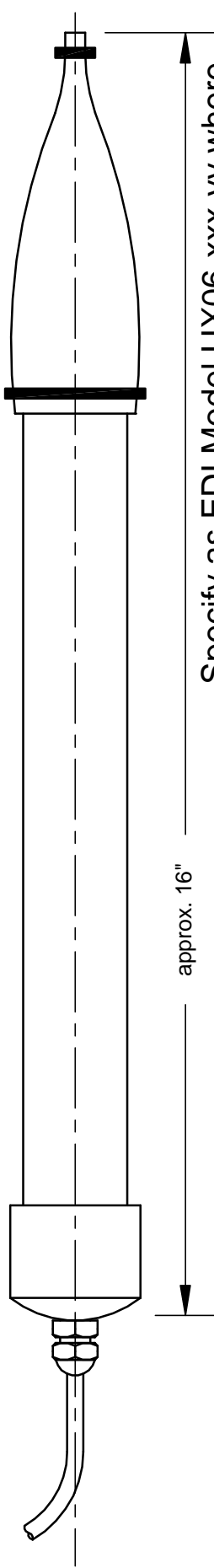
Element Types

AGG = Saturated gelled Ag/AgCl
CUG = Saturated gelled Cu/CuSO4

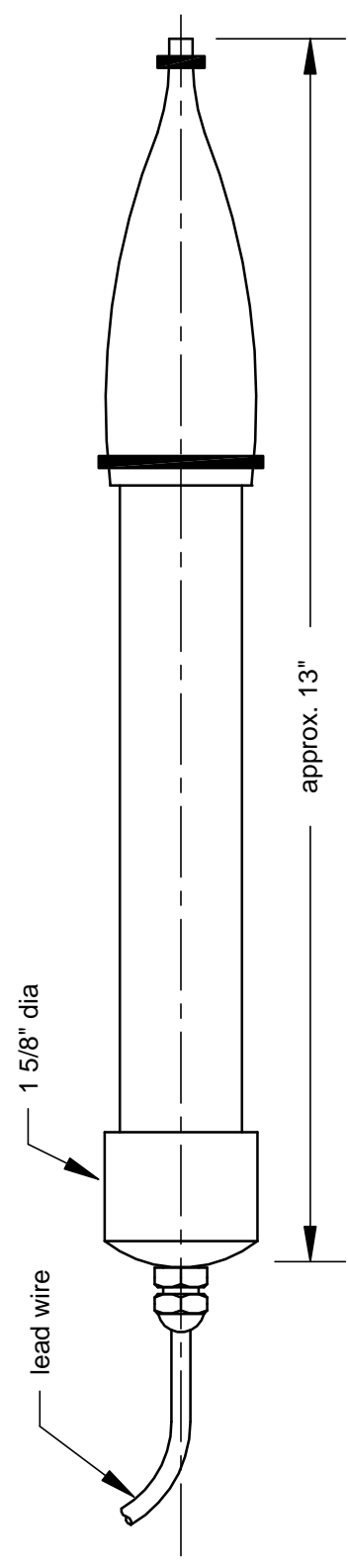
Termination Types

LWnnn = nnn ft. #14 AWG RHW lead wire
CW - custom wire, as specified by customer

Model UX06 is a variant of Model US. The gel chamber has been shortened and the contact bag placed on the end opposite the wire. Model UX06 has a 25 year design life; Model UX06A has a 12 year design life.



Specify as EDI Model UX06-xxx-yy where
xxx = element type, AGG or CUG
yy = termination, LWnnn or CWnnn
Design life is 25 years



Specify as EDI Model UX06A-xxx-yy where
xxx = element type, AGG or CUG
yy = termination, LWnnn or CWnnn
Design life is 12 years

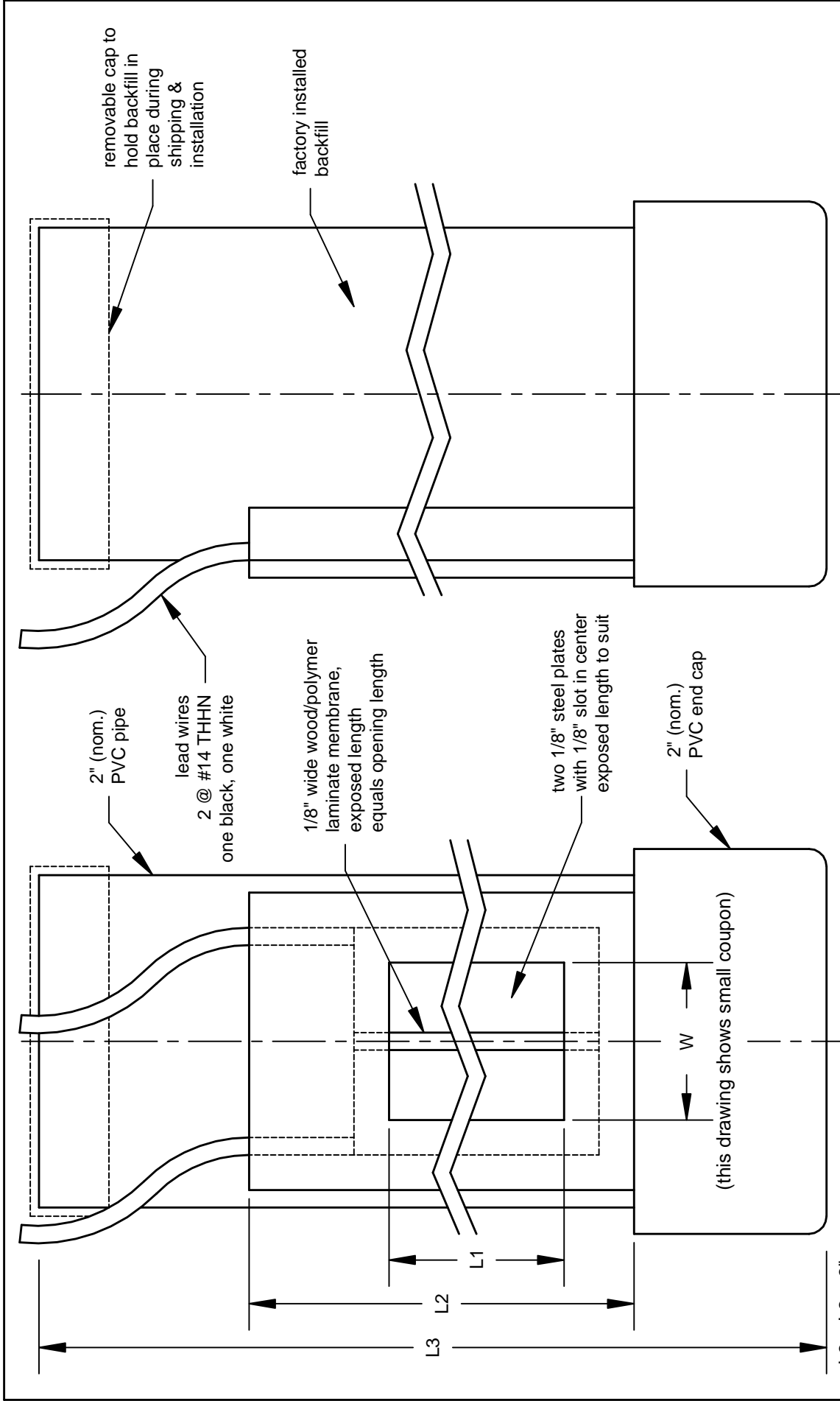
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Sub-size Underground Reference

SCALE	HALF	DATE	12/05/02	DRAWN BY	FJA	DRAWING NUMBER	UX06ASY
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$L3 = L2 + 3"$

Size	L2	W	L1	Exposed area
Small	4 1/2"	1 1/8"	1.55"	1.55 sq.in.
	Typical Range	1" - 3"	1" - 3"	10 sq.cm. 6 - 19 sq.cm.
Large	5 1/2"	2 5/8"	3.10"	7.75 sq.in.
	Typical Range	2.5 - 10 sq.in.	1" - 4"	50 sq.cm. 16 - 65 sq.cm.

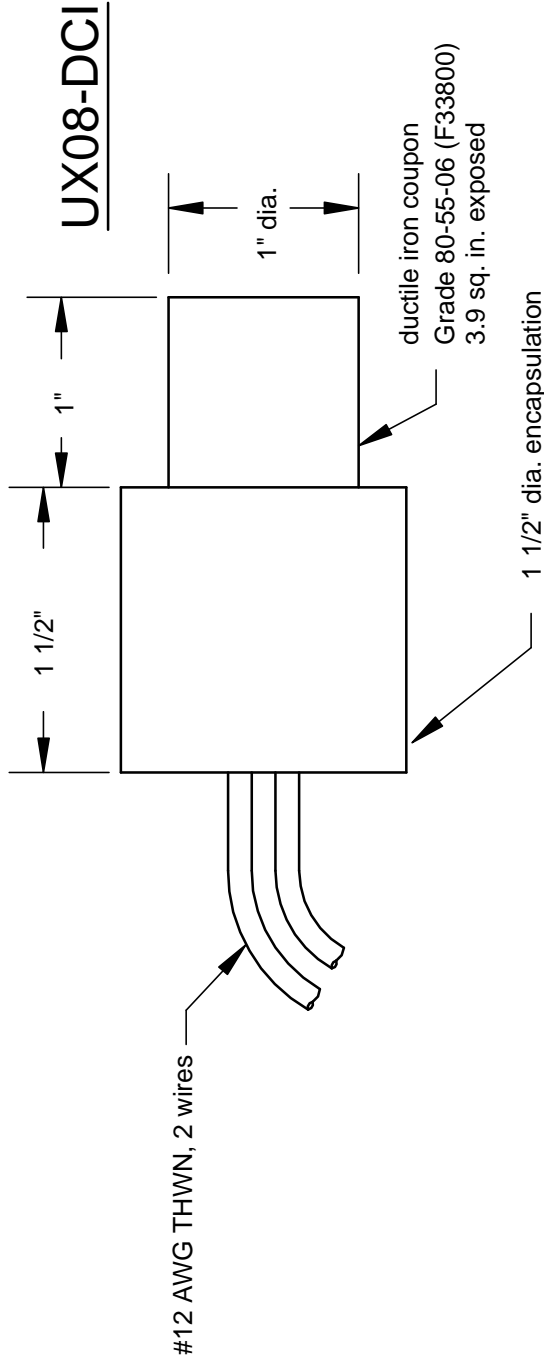
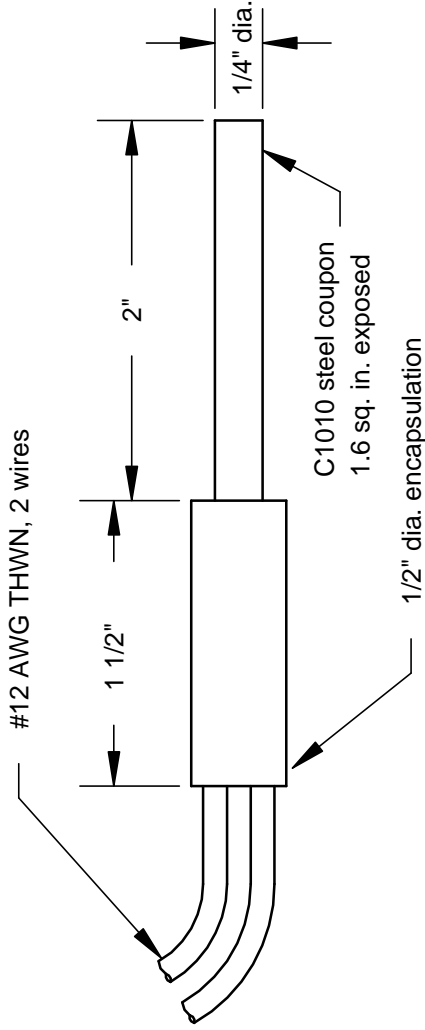
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Test Station Coupon Assembly

SCALE FULL DATE 04/12/01 DRAWN BY FJA DRAWING NUMBER UX07ASY

UX08-STL



Note: Specify as EDI Model UX08-xxx-2Wnnn
where nnn is length of lead wires in feet, color as specified.
and xxx is coupon material
STL is C1010 steel
DCI is F33800 ductile iron

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Cylindrical Coupon

SCALE FULL

DATE 10/24/00

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DRAWING NO. UX08ASY

Specify as EDI Model UX09-xxx-yy where

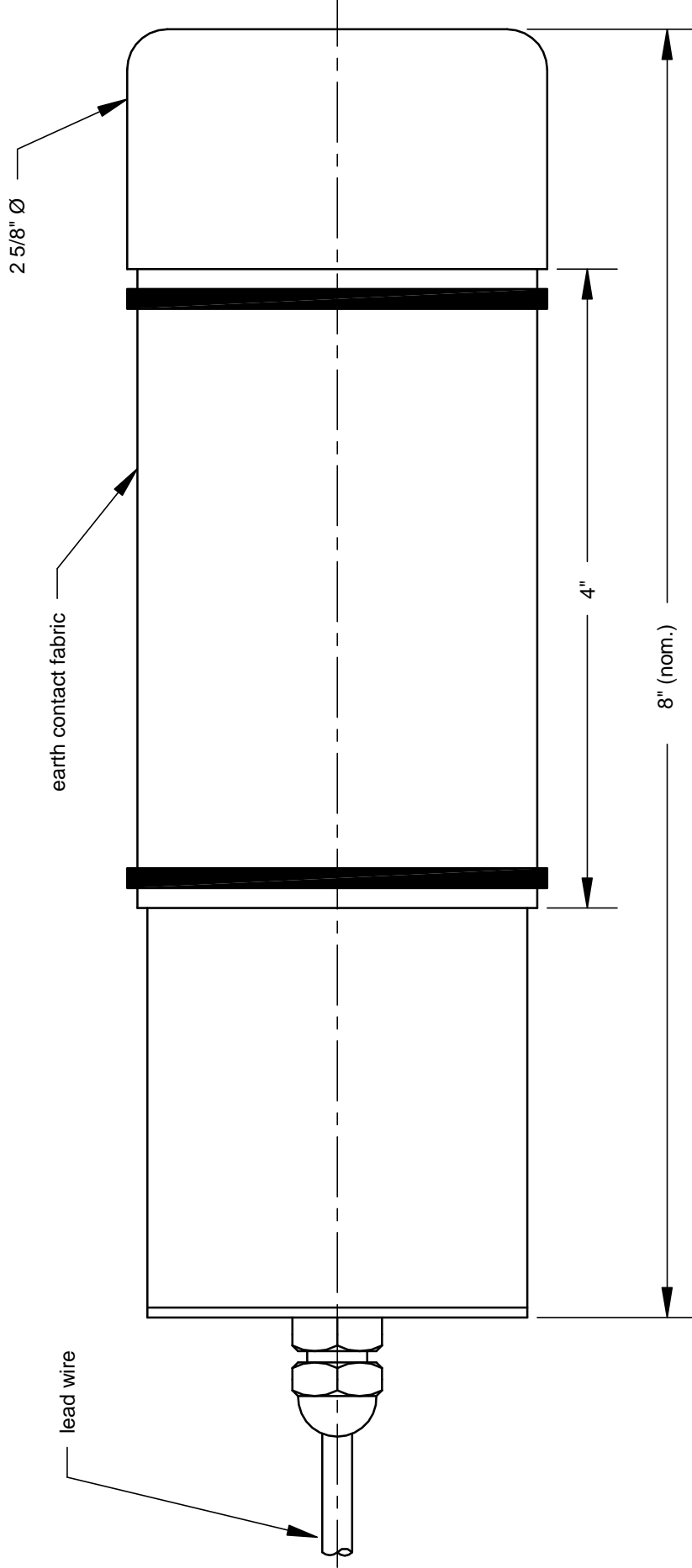
xxx = element type, AGG or CUG
 yy = termination, LWnnn or CWnnn

Element Types

AGG = Saturated gelled Ag/AgCl
 CUG = Saturated gelled Cu/CuSO4

Termination Types

LWnnn = nnn ft. #14 THHN lead wire
 CW = custom wire as specified by customer



Model UX09 is a variant of Model UL. The gel chamber is smaller and the earth contact bag has been moved to the side wall. Model UX09 is designed to be directly bonded to a test station riser. See EDI drawings UX09APP1 and UX09APP2 for typical installation. Design life is 25 years.

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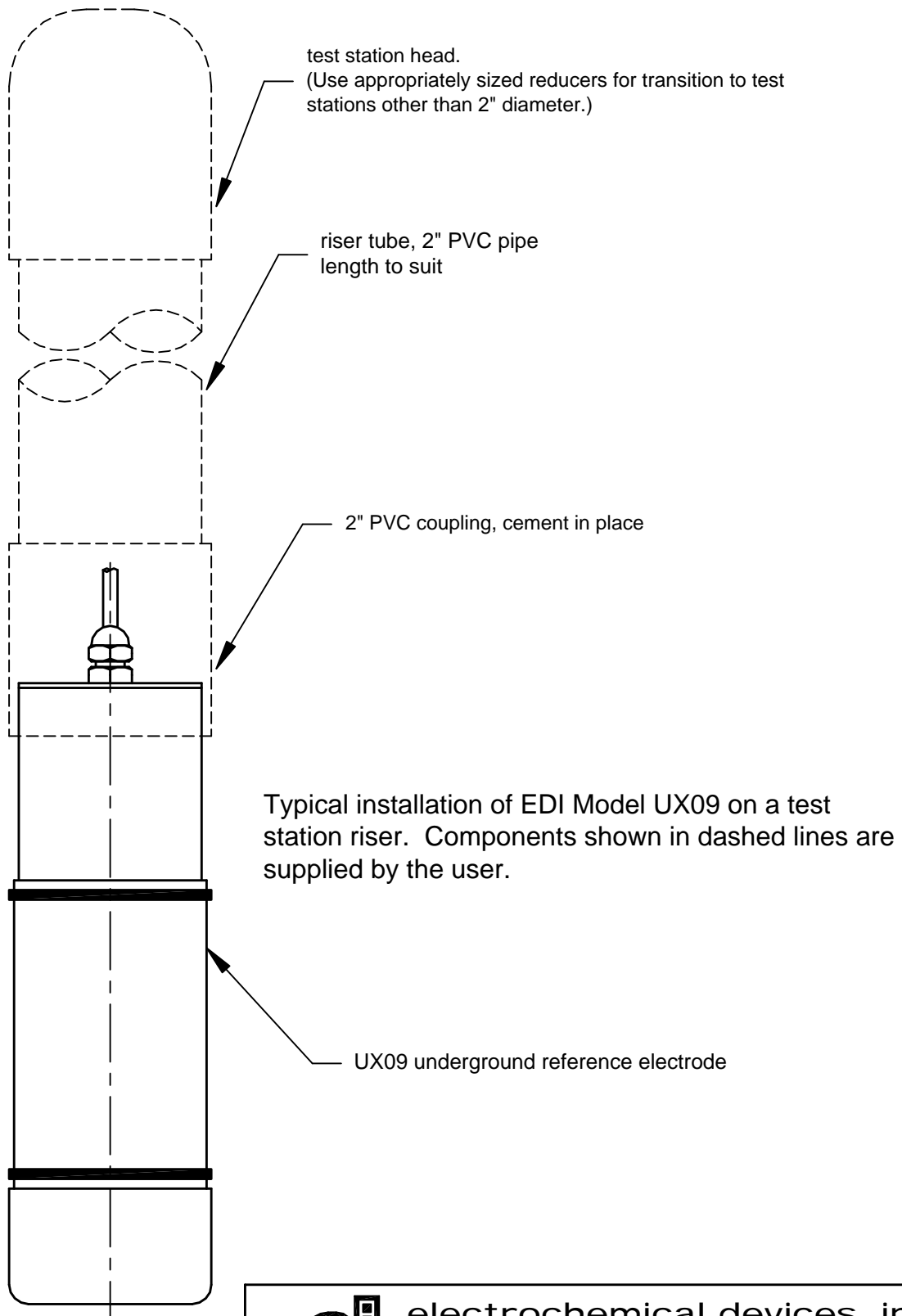
Riser Shoe Reference Electrode

SCALE FULL

DATE 12/05/02

DRAWN BY FJA

DRAWING NUMBER UX09ASY



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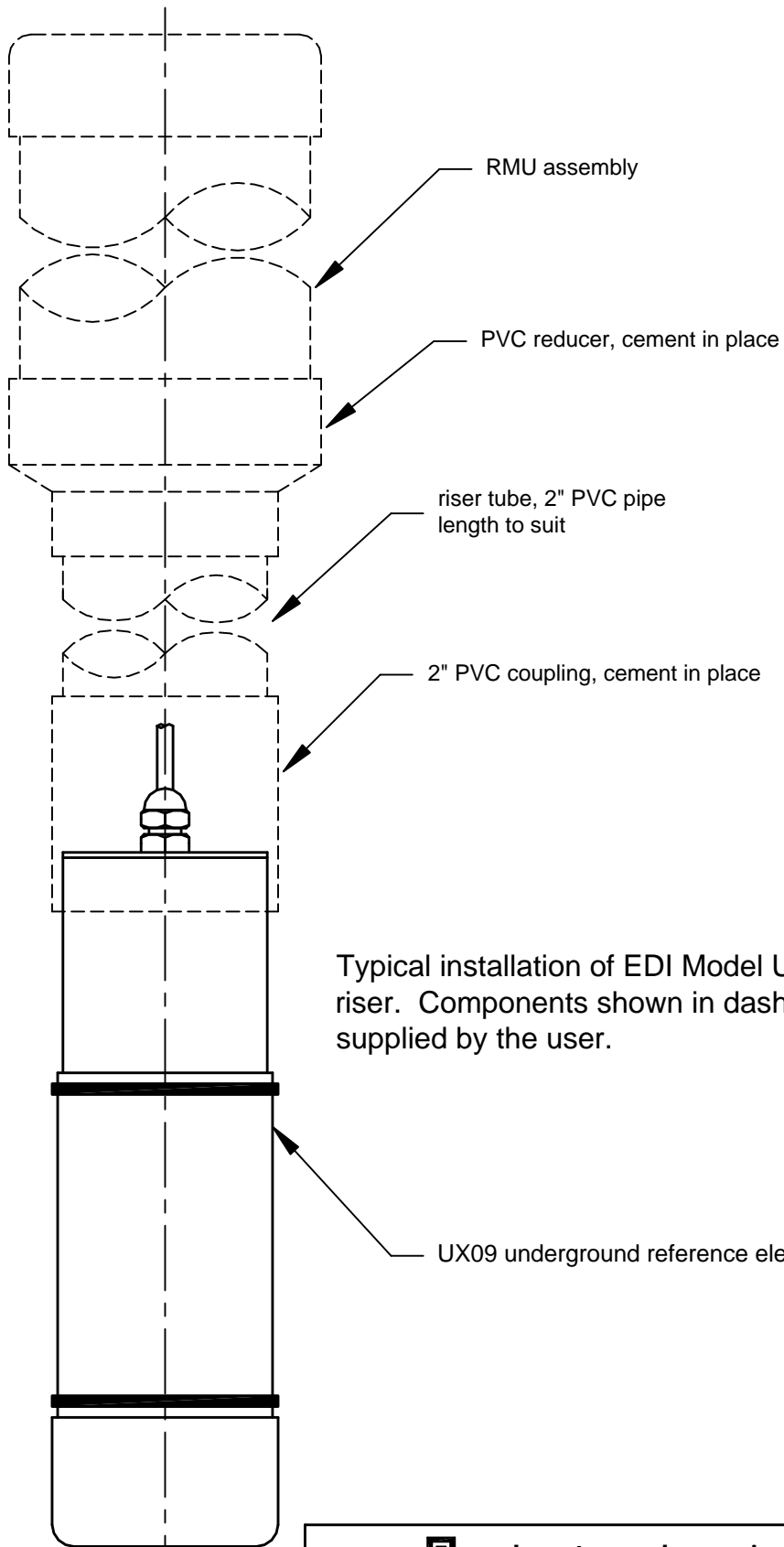


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SCALE NONE DATE 12/05/02

DRAWN BY FJA DRAWING NUMBER UX09APP1

Installation - Test Station Riser



Typical installation of EDI Model UX09 on an RMU riser. Components shown in dashed lines are supplied by the user.

UX09 underground reference electrode

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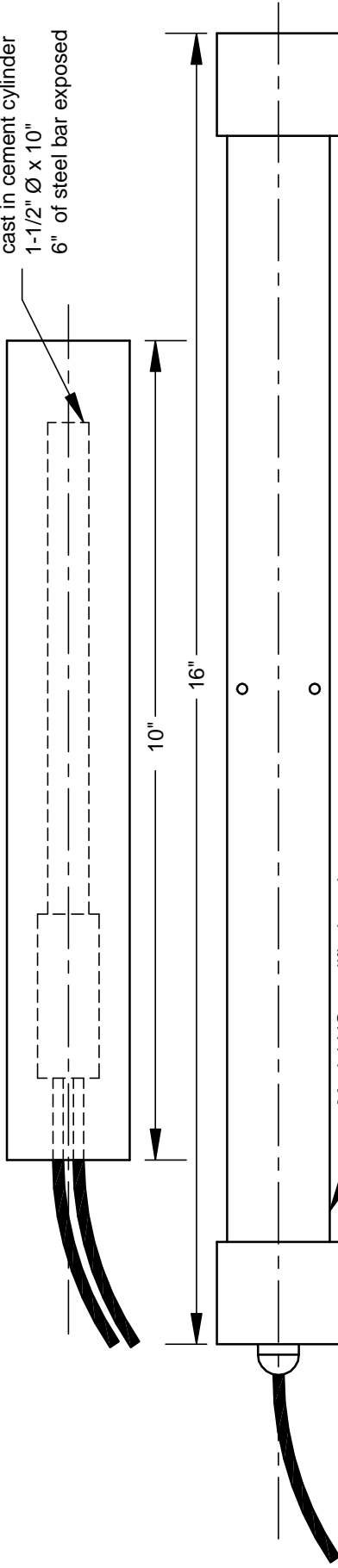


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SCALE	NONE	DATE	12/05/02
DRAWN BY	FJA	DRAWING NUMBER	UX09APP2

Installation - RMU Riser

1/2" steel rod or #4 rebar,
cast in cement cylinder
1-1/2" Ø x 10"
6" of steel bar exposed



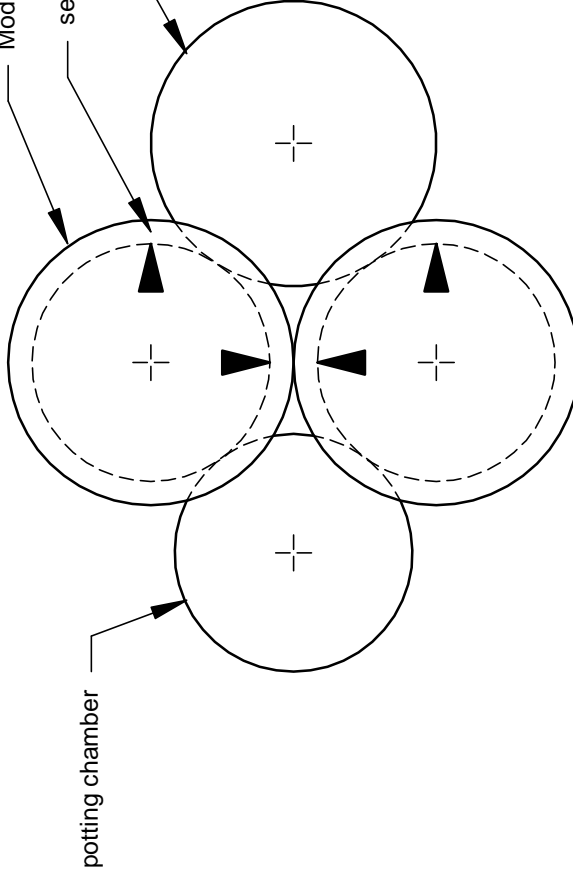
Wire connections - Lead wires are spliced to a four conductor cable. Conductors are #14 PVC insulated with a nylon sheath; outer jacket is black PVC, 3/8" Ø. All splices are located in potting chamber and encapsulated in polyurethane or epoxy potting compound.

Model US modified to place sensing ports at mid-point.

Model US (one of two)

sensing port location (typ.)

concrete cylinder containing steel rod



Assembly details - The two Model US references, the concrete cylinder and the potting chamber are secured as shown. Sensing ports on references face the concrete cylinder. Assembly contained in a cotton bag filled with gypsum-bentonite backfill. Approximate bag dimensions are 7" Ø x 20" long. Approximate weight is about 30 lbs.

Specify as **EDI Model UX10-xxx-LWnnn**

where xxx is element type

AGG = Ag/AgCl

CUG = Cu/CuSO4

and nnn is cable length in feet

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UX10 Multiple Reference Assembly

SCALE VARIES

DATE 09/18/02

DRAWN BY FJA

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