



**THE
OKONITE
COMPANY**

WATER TREATMENT



Cables for Water Treatment Facilities



Setting the Standard

OKONITE CABLES

THE SUPERIOR CHOICE FOR WATER TREATMENT PLANTS

Introduction

There are two main types of water treatment plants. Waste water treatment plants, speed up the natural process of cleansing waste water that can be released back into our environment. Potable water treatment plants are used to purify water to make it safe for drinking.

Millions of gallons of untreated water flow each day through treatment plants. Okonite cables are there to power the pumps, controls and instruments to ensure the whole process is fast and most importantly, reliable. Water treatment plants provide critical resources that maintain our quality of life.



Applications

Where reliable electrical systems are required for power or control equipment, Okonite cable is the solution. Whether it be cable in tray, direct buried, aerial, or in conduit, Okonite has the quality cable for your application.

Variable Frequency Drives (VFD's) are the most popular method for controlling motors and pumps. These solid state devices typically use pulse-width modulation to achieve the desired output waveform in motor control or speed control. These VFD's present unique challenges as they can lead to premature motor/pump bearing failure. Steps must be taken to minimize the effects of voltage impulses, common mode current and poor grounding.

(continued on page 3)



CLX armored cables have been scientifically and field proven to reduce the deleterious effects on bearings due to these attributes:

- CLX armor acts as a high conductivity return ground path (in most cases exceeding that of traditional ground paths).
- CLX armor provides superior high frequency shielding due to the continuously welded sheath.
- All 600V, 2.4kV non-shielded & 5/8kV shielded 3/c CLX cable constructions consist of three symmetrically placed ground wires, limiting the common mode current as compared to other construction types.
- Symmetrically cabled power and grounding conductors have a better balance and “EMI cancellation effect” than randomly placed conductors in conduit.

Simply put, CLX uniquely provides the best path to ground for the harmful electrical effects associated with Frequency Drives rather than the path through the motor bearings.

CLX armored cables are the perfect solution when using Variable Frequency Drives.

Jacket Considerations

Sunlight resistance, heat aging, low temperature conditions, abrasion, flexibility, flame retardance and chemical resistance are just some of the characteristics that should be considered when specifying a cable jacket. Common jacket types are:

- Okoseal (PVC)
- Okolon (CPE)
- Okoclear (Low Smoke Zero Halogen Polyolefin)
- Okolene (Polyethylene)

Flame Retardancy

Flame retardancy is a key design factor in Water Treatment plant cables. Testing protocols by UL, IEEE and ICEA dictate the method by which cables are to be tested. Okonite's new Flame Test Chamber was recently constructed at our Orangeburg campus to provide cutting edge technology

Ratings

UL, IEEE, and ICEA also provide standards on cable ratings. See page 5 for the U.L. Listing Cable Selector Chart.

Technical Support

Our in-house staff of expert Application Engineers and our direct sales force can provide valuable services to assist in any cable related issue. Cable design, technical engineering papers, installation calculations and training can be provided.

Okonite Reliability

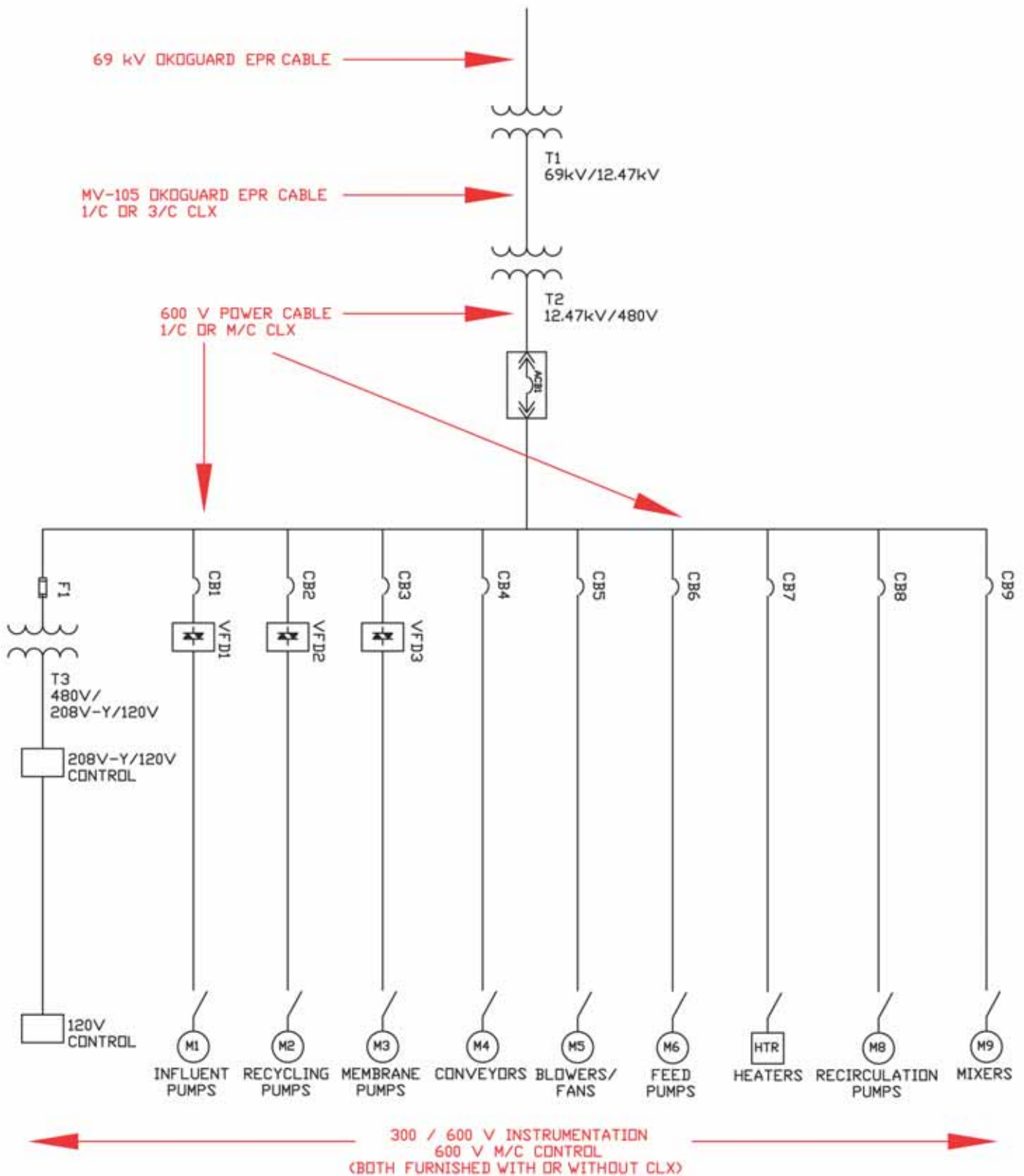
Since 1878, Okonite has led the industry in quality and service. Our line of stock cable products, as well as special cable capabilities, can meet any cable need. Let Okonite help you make your next Water Treatment Plant a success.

Okonite is an ESOT company and has been since 1972.



See the Okonite Cable on-line catalog at www.okonite.com or contact your local Okonite office for our stock catalog Bulletin - OSL

TYPICAL WATER TREATMENT FACILITY SCHEMATIC



⚠ NOTE: THIS DRAWING IS INTENDED FOR GRAPHIC PURPOSES ONLY. IT IS NOT INTENDED TO PORTRAY AND ACTUAL ELECTRICAL SYSTEM



Instrumentation
Type SP-OS,
Okoseal jacket.
300V PLTC/ITC
600V TC



Instrumentation
Type SP-OS, CLX sheath,
CT rated, Okoseal jacket.
300V PLTC/ITC
600V MC & MC-HL



Multi-Conductor 600V
Power & Control
Cable TC rated.
Various insulations and
jackets available
per application.



**CLX - Multi
Conductor 600V**
Power & Control Cable.
MC-HL, CT rated. Various
insulations and jackets
available per application.



**1/C 5/8kV
through 35kV**
Okoguard (EPR) Insulation,
shielded, rated MV-105.
Okoseal or Okolon jacket
available. CT rating
also available.



3/C 5/8kV through 35kV CLX
Okoguard (EPR)
Insulation, shielded, rated
MV-105, MC-HL for CT Use, Overall
Okoseal jacket.



1/C 69kV
Okoguard (EPR)
Insulation, shielded
with Okoseal jacket.

CABLE U.L. SELECTOR

CABLE TYPE	U.L. LISTING	OKONITE CATALOG SERIES
1/c 5/8kV	MV-105, CT Use	114-23-XXXX
1/c 15kV	MV-105, CT Use	115-23-XXXX
3/c 2.4kV non-shielded CLX	MV-90 or MC-HL, CT Use	571-21-XXXX
3/c 5/8kV CLX	MV-105 or MC-HL, CT Use	571-22-XXXX
3/c 15kV CLX	MV-105 or MC-HL, CT Use	571-23-XXXX
Multi-Cond 600V Power & Control TC	Type TC-ER	202-10-XXXX 112-10-XXXX
Multi-Cond 600V Power & Control TC	Type TC, XHHW-2	202-31-XXXX 112-31-XXXX
Multi-Cond 600V CLX Power & Control MC	Type MC, MC-HL for CT Use, XHHW-2	546-31-XXXX 571-31-XXXX
300V P-OS/SP-OS Instrumentation	Type ITC/PLTC/FPL	264-10/15-XXXX
300V CLX P-OS/SP-OS Instrumentation	Type ITC/PLTC/FPL	564-10/15-XXXX
600V P-OS/SP-OS Instrumentation	Type TC	264-60/65-XXXX
600V CLX P-OS/SP-OS Instrumentation	Type MC, MC-HL for CT Use	561-60/65-XXXX 564-60/65-XXXX
P-OS/SP-OS Thermocouple	Type ITC/PLTC	284-20-XXXX
CLX P-OS/SP-OS Thermocouple	Type ITC/PLTC	584-20-3401

* Specific applications may require select construction that are not considered stock items. Consult your Okonite representative for more information

District Offices, Manufacturing Plants & Service Centers

Manufacturing Plants



*Orangeburg, SC - Manufacturing Plant



*Orangeburg, SC - Compound Facility



*Richmond, KY - Manufacturing Plant



*Santa Maria, CA - Manufacturing Plant



*Ashton, RI - Manufacturing Plant

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*Qualified to provide nuclear Products



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