



# Approved Products and Manufacturers

## Electrical

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September 2010	5.1		Revised DC Power supplies, minor changes to various part numbers
January 2018	5.2	All	Complete document revision. All products re-appraised.

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# 1. INTRODUCTION

This document lists products approved by Hunter Water for use in the water and sewerage networks, together with the names of manufacturers of the approved product. Information on suppliers of the products should be obtained directly from the manufacturers.

The document is intended to be read in conjunction with:

- (i) STS 500 – *General Requirements for Electrical Installations.*
- (ii) STS 550 – *General Requirements for SCADA and Automation Systems*
- (iii) The project technical specification and design drawings.
- (iv) WSAA Water Supply and Gravity Sewerage Codes Hunter Water Edition, Hunter Water Corporation Water and Sewer Design Manual, Standard Technical Specifications & Standard Construction Practice (Drawings).
- (v) The Water Services Association of Australia (WSAA) Product Specifications Hunter Water Edition

Further information and copies of Hunter Water Design Standards are available on the Hunter Water website:

<http://www.hunterwater.com.au/Building-and-Development/Drawings-Plans-Specifications/>

Further information on the process for product authorisation and the current copy of this document is available on the Hunter Water website:

<http://www.hunterwater.com.au/Building-and-Development/Approved-Designers-Suppliers-and-Contractors/Approved-Products-and-Manufacturers.aspx>

General background information on products and materials is also available on the WSAA website ([www.wsaa.asn.au](http://www.wsaa.asn.au)).

Not all products and materials appraised by WSAA are approved for use in the Hunter Water systems. HWC undertakes an independent assessment of the suitability of each product with HWC infrastructure, requirements and policies.

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## 2. AUTOMATION EQUIPMENT

### 2.1. ETHERNET SWITCHES – Managed Corporate Network

Manufacturer	Comments
CISCO	Managed by Hunter Water ICT. Contact your Hunter Water representative for additional information.

### 2.2. ETHERNET SWITCHES – Managed Automation Network

Manufacturer	Comments	Reference
SCHNEIDER CONNEXIUM	For PLC remote I/O applications. Managed Switches shall be used for all PLC IO applications. Where the distance exceeds 550 metres, single mode optical fibre managed switches shall be used.	TCSESM083F23F0 TCSESM083F2CU0

### 2.3. ETHERNET SWITCHES – Unmanaged

Manufacturer	Comments	Reference
WEIDMULLER	5 port Unmanaged Ethernet Switch - standard Network site installations only	1240840000
WEIDMULLER	8 port Unmanaged Ethernet Switch - standard Network site installations only	1240900000
WEIDMULLER	7 RJ45 ports + 1 SC fibre port	1412070000

### 2.4. HMI Screens

Manufacturer	Comments	Reference
SCHNEIDER	15" Colour Touch (Requires both components for a complete touch screen)	HMIG3U HMIDT732
SCHNEIDER	5.7" colour touch	HMISTU855

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## 2.5. PLC

Manufacturer	Comments	Reference
<i>SCHNEIDER</i>	M580 Level 1 PLC	BMEP581020
<i>SCHNEIDER</i>	M580 Level 5 PLC	BMEP585040
<i>SCHNEIDER</i>	For remote IO applications as defined by Hunter Water. E.g., Chemical Dosing Systems	Advantys IO

## 2.6. SCADA

Manufacturer	Comments
<i>CLEARSCADA</i>	SCADA system for Network and Treatment Plants

## 2.7. TELEMETRY

Manufacturer	Comments	Reference
<i>SCHNEIDER</i>	TBUP334-EC55-AB00S	SCADAPack 334E
<i>SCHNEIDER</i>	Trio Q series Digital radio	TBURQR4HH-E00E1L00
<i>SCHNEIDER</i>	Trio J Series Digital radio	TBURJR900-01002EH0
<i>NETCOMM</i>	3G Industrial M2M Router modem	NTC-6200-02

## 2.8. ANTENNA

Manufacturer	Comments	Reference
<i>RF Industries</i>	6.5dBi Multi-band Collinear antenna - For Modem antenna installations	COL7195
<i>RF Industries</i>	6 Element Yagi, 480-520 MHz, 9dBd for standard digital radio installations	YB6-62

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### 3. POWER EQUIPMENT

#### 3.1. CIRCUIT BREAKERS - ACB

Manufacturer	Comments	Reference
<i>TERASAKI</i>	Draw out or fixed as per STS 500	TemPower 2
<i>SCHNEIDER</i>	Draw out or fixed as per STS500	Masterpact NW/NT

#### 3.2. CIRCUIT BREAKERS - MCCB

Manufacturer	Comments	Reference
<i>TERASAKI</i>	Electronic Only	TemBreak 2
<i>SCHNEIDER</i>	Electronic Only	Compact NSX

#### 3.3. CIRCUIT BREAKERS - MCB / RCBOs

Manufacturer	Comments	Reference
<i>SCHNEIDER</i>	6kA Minimum	Acti 9 Series
<i>TERASAKI</i>	6kA Minimum	DIN-T Series
<i>CLIPSAL</i>	6kA Minimum - Load Centres Only	4CB Series

#### 3.4. MAIN SWITCH BOARDS & MOTOR CONTROL CENTRES

Manufacturer	Comments	Reference
<i>B &amp; R</i>	Custom boards by exception	Signature series

#### 3.5. DISTRIBUTION BOARDS

Manufacturer	Comments	Reference
<i>SCHNEIDER</i>	IP54, X15 (Pad lockable Handle for outdoor applications)	MD Series

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<i>NHP</i>	IP54, X15 (Pad lockable Handle for outdoor applications)	Concept Premier Series
<i>CLIPSAL</i>	Downstream of distribution boards only.	4 Series PVC

### 3.6. CONDUIT (FLEXIBLE METALLIC)

Manufacturer	Comments
<i>ANACONDA</i>	Nil
<i>ADAPTAFLEX</i>	Nil

### 3.7. EMC CABLE GLANDS

Manufacturer	Comments	Reference
<i>ALCO</i>	For braided shielded motor cables	ELMEMC
<i>LAPP</i>	For braided shielded motor cables	SKINTOP MS-M Brush Type

### 3.8. INDOOR GPOs AND SWITCHES

Manufacturer	Comments
<i>CLIPSAL</i>	Nil
<i>HPM</i>	Nil

### 3.9. WEATHERPROOF GPOs AND SWITCHES

Manufacturer	Comments
<i>CLIPSAL</i>	56 Series

### 3.10. INTERNAL SWITCHBOARD LIGHTING

Manufacturer	Comments	Reference
<i>NARVA</i>	LED strip light for switchboard internal lighting	87543

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### 3.11. LOAD BREAK SWITCHES

Manufacturer	Comments	Reference
<i>SCHNEIDER</i>	Including generator connection 3 position switches	INS
<i>SOCOMEK</i>	Including generator connection 3 position switches	SLB/SCO

### 3.12. POWER HEALTHY RELAY (PHASE FAILURE RELAY)

Manufacturer	Comments	Reference
<i>Crompton</i>	Power Healthy Relay with 24VDC aux supply	PVE-380/480-AUX

### 3.13. POWER FACTOR CORRECTION

Manufacturer	Comments	Reference
<i>SCHNEIDER</i>	Min 525V rating	Nil
<i>NHP</i>	Min 525V rating	Nil

### 3.14. POWER METERS

Manufacturer	Comments	Reference
<i>SCHNEIDER</i>	With remote mounted door display	METSEPM5563
<i>SCHNEIDER</i>	With remote mounted door display	METSEPM5563RD

### 3.15. SURGE ARRESTORS – POWER

Manufacturer	Comments	Reference
<i>NOVARIS</i>	3 Phase with alarm signalling contact	DINSAFE SDD3-50-275-A
<i>NOVARIS</i>	1 Phase with alarm signalling contact	DINSAFE SDD1-50-275-A

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**3.16. SURGE ARRESTORS – RADIO COMMS (COAX)**

Manufacturer	Comments	Reference
NOVARIS	Nil	CN-FF-90-3-M

**3.17. SURGE ARRESTORS – INSTRUMENTATION (ANALOGUE)**

Manufacturer	Comments	Reference
NOVARIS	G base used at PLC end, EC90 base used at instrument end	SLDH-G / SLDH-EC90

**3.18. UPS**

Manufacturer	Comments
APC	Nil
GE	Nil

**3.19. UPS – ISOLATION / BYPASS SWITCH**

Manufacturer	Comments
KRAUS & NAIMER	No key switch

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## 4. CONTROL EQUIPMENT

### 4.1. BATTERY (PLC BACKUP)

Manufacturer	Comments	Reference
PANASONIC	12V - Suitable Ah for use with Battery UPS.	UP-VW1245P1
CSB	Minimum capacity shall be 7.2 Ah.	GP1272F2
VISION	Batteries less than 16Ah shall be fitted with F2 terminals.	NP7-12FR

### 4.2. BATTERY HOLDER (FOR BACKUP BATTERY)

Manufacturer	Comments	Reference
PULS	Nil	UZ012.07

### 4.3. BATTERY UPS

Manufacturer	Comments	Reference
PULS	24VDC Input, 24VDC Output	UB10.241

### 4.4. CONTACTORS

Manufacturer	Comments	Reference
SPRECHER & SCHUH	With low level signal auxiliaries (if used)	CA7, CA6
SCHNEIDER	With low level signal auxiliaries (if used)	Tesys D, Tesys F

### 4.5. FLOAT SWITCHES

Manufacturer	Comments	Reference
FLYGT	Nil	ENM10

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#### 4.6. INDICATING LIGHTS

Manufacturer	Comments	Reference
<i>SPRECHER &amp; SCHUH</i>	Superbright LED's only	D7
<i>SCHNEIDER</i>	Superbright LED's only	ZB4, ZB5

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#### 4.7. ILLUMINATED PUSH BUTTONS

Manufacturer	Comments	Reference
<i>SPRECHER &amp; SCHUH</i>	Superbright LED's only	D7
<i>SCHNEIDER</i>	Superbright LED's only	ZB4, ZB5

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#### 4.8. LCD DISPLAYS

Manufacturer	Comments	Reference
<i>CROMPTON INSTRUMENTS</i>	For level indication	128-10AB
<i>WEIDMULLER</i>	For level indication	LPD350

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#### 4.9. LIMIT SWITCHES – CONTROL

Manufacturer	Comments	Reference
<i>SCHMERSAL</i>	Plastic or Alloy, depending on application	335 or 336
<i>SCHNEIDER</i>	Plastic or Alloy, depending on application	XCK-S or J

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#### 4.10. LIMIT SWITCHES – SWITCHBOARD INTERNAL LIGHTING SECURITY

Manufacturer	Comments	Reference
<i>SCHNEIDER</i>	Prewired with roller head	XCKMD210L1

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#### 4.11. MOTOR PROTECTION RELAYS

Manufacturer	Comments	Reference
<i>SPRECHER &amp; SCHUH</i>	Nil	CEP
<i>SCHNEIDER</i>	Nil	Tesys T

#### 4.12. POWER SUPPLIES

Manufacturer	Comments	Reference
<i>WEIDMULLER</i>	240VAC / 24VDC, 10 Amp	1478130000
<i>PULS</i>	240VAC / 24VDC, 10 Amp	CS10.241

#### 4.13. PRESSURE SWITCHES

Manufacturer	Comments	Reference
<i>IFM</i>	0 - 10 bar. Use with angle headed M12 cable	PK6524

#### 4.14. PROXIMITY SWITCHES

Manufacturer	Comments	Reference
<i>IFM</i>	Stainless Steel or Plastic depending on application	Nil
<i>P &amp; F</i>	Stainless Steel or Plastic depending on application	Nil

#### 4.15. PUSH BUTTONS

Manufacturer	Comments	Reference
<i>SPRECHER &amp; SCHUH</i>	Nil	D7
<i>SCHNEIDER</i>	Nil	ZB4, ZB5

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**4.16. RELAYS - CONTROL**

Manufacturer	Comments	Reference
<i>SPRECHER &amp; SCHUH</i>	Nil	CS8
<i>SCHNEIDER</i>	Nil	Tesys D or K

**4.17. RELAYS – PLC INTERFACE - MECHANICAL**

Manufacturer	Comments	Reference
<i>OMRON</i>	Gold flashed, low level switching c/w LED and diode suppression	Nil
<i>WEIDMULLER</i>		Nil
<i>SCHNEIDER</i>		Nil
<i>PHOENIX</i>		Nil

**4.18. RELAYS – PLC INTERFACE – OPTICAL**

Manufacturer	Comments	Reference
<i>WEIDMULLER</i>	240VAC/24VDC, 24VDC/24VDC depending on application, 100mA	Termopto

**4.19. SELECTOR SWITCHES – 22.5mm**

Manufacturer	Comments	Reference
<i>SCHNEIDER</i>	Metal only	ZB4-BJ

**4.20. SELECTOR SWITCHES – CAM**

Manufacturer	Comments	Reference
<i>KRAUS &amp; NAIMER</i>	Gold flashed contacts	CAD11

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#### 4.21. SIGNAL CONDITIONING - ANALOGUE ISOLATORS

Manufacturer	Comments	Reference
<i>RED LION</i>	With PGMMOD programmer	IAMS

#### 4.22. SIGNAL CONDITIONING – THERMISTOR RELAYS

Manufacturer	Comments	Reference
<i>SPRECHER &amp; SCHUH</i>	Manual reset	RT7
<i>SCHNEIDER</i>	Manual reset	LT3

#### 4.23. SOFT STARTERS

Manufacturer	Comments	Reference
<i>ZENER</i>	Nil	SS 6000
<i>SCHNEIDER</i>	Depending on application	ALTISTART 22, 48

#### 4.24. THERMAL OVERLOADS

Manufacturer	Comments	Reference
<i>SPRECHER &amp; SCHUH</i>	To match associated contactor	CT 7
<i>SCHNEIDER</i>	To match associated contactor	TeSys D

#### 4.25. TIMERS

Manufacturer	Comments	Reference
<i>SCHNEIDER</i>	Specific Function, On Delay or Off delay	RE11R*MU
<i>SPRECHER &amp; SCHUH</i>	Specific Function, On Delay or Off delay	RZ7-FE*

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**4.26. VARIABLE SPEED DRIVES**

<b>Manufacturer</b>	<b>Comments</b>	<b>Reference</b>
<i>SCHNEIDER</i>	Depending on Application	ALTIVAR 630/650
<i>ZENER</i>	Depending on Application	MSC-3

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**4.27. TERMINALS - POWER**

<b>Manufacturer</b>	<b>Comments</b>
<i>WEIDMULLER</i>	Nil
<i>PHOENIX</i>	Nil

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**4.28. TERMINALS - CONTROL**

<b>Manufacturer</b>	<b>Comments</b>
<i>WEIDMULLER</i>	Nil
<i>PHOENIX</i>	Nil

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## 5. INSTRUMENTATION EQUIPMENT

### 5.1. CHLORINE CONTROLLERS

Manufacturer	Comments	Reference
SIEMENS	Nil	Acutec
SIEMENS	Nil	PCU / SCU
SIEMENS	Nil	Chlorinators

### 5.2. CHLORINE RESIDUAL MEASUREMENT

Manufacturer	Comments	Reference
ENDRESS & HAUSER	Nil	Memosens
SIEMENS	c/w Variasens Measuring Cell & FC1 Sensor	DEPOLOX 5 SFC

### 5.3. DISSOLVED OXYGEN

Manufacturer	Comments	Reference
ROYCE	Analyser with Electro chemical cleaning sensor	9200/96A
ENDRESS & HAUSER	Nil	Nil

### 5.4. FLOW MEASUREMENT – MAGNETIC

Manufacturer	Comments	Reference
ABB	For applications where approved.	WaterMaster
ABB	For applications where approved.	AquaMaster 3
ENDRESS+HAUSER	MAGFLOW	PROMAG L400

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### 5.5. FLOW MEASUREMENT – MASS

Manufacturer	Comments	Reference
ROSEMOUNT	For Mass Flow applications	Micro Motion

### 5.6. FLOW MEASUREMENT – ULTRASONIC

Manufacturer	Comments	Reference
ENDRESS & HAUSER	Clamp-on applications only	Nil

### 5.7. FLOW MEASUREMENT – THERMAL

Manufacturer	Comments	Reference
IFM	Nil	SI Series

### 5.8. FLUORIDE MEASUREMENT

Manufacturer	Comments	Reference
PROMINENT	Fluoride Meter Mounted on Panel	DULCOMETER® D1C

### 5.9. LEVEL MEASUREMENT - HYDROSTATIC

Manufacturer	Comments	Reference
VEGA	1 or 2.5 bar depending on application	VEGAWELL 52 series

### 5.10. LEVEL MEASUREMENT - RADAR

Manufacturer	Comments	Reference
VEGA	VEGAPULS WL61 series	PSWL61.XXBXXDKTX

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### 5.11. LEVEL MEASUREMENT - PROBES

Manufacturer	Comments	Reference
MULTITRODE	Nil	MTR

### 5.12. pH MEASUREMENT

Manufacturer	Comments	Reference
ENDRESS & HAUSER		Memosens
Siemens	c/w Variasens Measuring Cell with pH sensor with cable and plug in card	Sitrans DEPLOX 5 SFC

### 5.13. PRESSURE TRANSMITTERS

Manufacturer	Comments	Reference
ROSEMOUNT	1000 kPa, 4-20mA OUTPUT, 1/4" NPT FEMALE	3051TG2A2A21BB4M4DOQ4
ROSEMOUNT	5500 kPa ,4-20mA OUTPUT, 1/4" NPT FEMALE	3051TG3A2A21BB4M4
ROSEMOUNT	6.2 mBAR, 4-20mA OUTPUT, TRADITIONAL FLANGE, 316 SST, SST DRAIN/VENT	3051CD2A02A1BM5B1H2
ROSEMOUNT	DIFF PRESSURE MEASUREMENT	3051 SERIES
IFM	0 - 10 bar. Requires additional connection cable with right angled M12 connector.	PT5404
IFM	1 - 16 bar. Requires additional connection cable with right angled M12 connector.	PT5414
VEGA	VegaBar82 0-100kPa Pressure Transmitter	B82.IXLFSAGGSHXKIMAX
VEGA	VegaBar82 0-6000kPa Pressure Transmitter	B82.IXLFSAGKSHXKIMAX

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**5.14. TURBIDITY MEASUREMENT**

<b>Manufacturer</b>	<b>Comments</b>	<b>Reference</b>
<i>ENDRESS &amp; HAUSER</i>		Memosens

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## 6. HIGH VOLTAGE EQUIPMENT

All High voltage switchgear and equipment to be selected in consultation with the Hunter Water High Voltage Installation Responsible Person.

Final selection to be approved by the Hunter Water High Voltage Installation Responsible Person or nominated representative.