Specifications For PRE - INSTALLED OPTIONS CALSENSE® ET3000™ CONTROLLERS

Calsense® Transient Protection

PART#	DESCRIPTION		
CSTP110	CALSENSE® 110VAC SURGE ARRESTOR The Controller Assembly shall be provided with an 110VAC Surge Arrestor for the purpose of protecting the components against electrical surge coming in on the 120-volt A.C. power source wiring. This assembly shall consist of a surge arrestor installed on each leg of the 120-volt A.C. wiring to the Calsense® equipment and housed in an electrical enclosure within the assembly. CSTP110 is located at the point where the electrical power enters the assembly		

Calsense® Controller Communication Options

PART#	DESCRIPTION			
CS3GR	CALSENSE® GPRS CELLULAR Only The Controller Assembly shall be provided with the Calsense® GPRS Cellular Communication Board for the purpose of communicating between central computer and Calsense® CS 3000 controller. A separate GR Cellular antenna shall be required.			
CS3GRK	CALSENSE® GPRS CELLULAR AND GR STUBBY ANTENNA KIT The Controller Assembly shall be provided with the Calsense® GPRS Cellular Communication Board for the purpose of communicating between central computer and Calsense® CS 3000 controller. The GR-STUBBY antenna shall be pre-mounted and wired to the GPRS Cellular communication board.			
CS3EN	CALSENSE® ETHERNET COMMUNICATION BOARD The Controller Assembly shall be provided with the Calsense® Ethernet Communication Board for the purpose of communicating between central computer and Calsense® CS 3000 controller.			
CS3WEN	CALSENSE® Wi-Fi COMMUNICATION BOARD The Controller Assembly shall be provided with the Calsense® Wi-Fi Communication Board for the purpose of communicating between central computer and Calsense® CS 3000 controller via a customer's existing Wi-Fi network. A separate Wi-Fi antenna shall be required.			
CALSENSE® Wi-Fi COMMUNICATION BOARD KIT The Controller Assembly shall be provided with the Calsense® Wi-Fi Communication Board for the purpose of commu CS3WENK central computer and Calsense® CS 3000 controller via a customer's existing Wi-Fi network. The WEN-STUBBY anter pre-mounted and wired to the Wi-Fi communication board.				
CS3SR	CALSENSE® SPREAD SPECTRUM RADIO The Calsense® Controller Assembly shall be provided with the Calsense® Spread Spectrum 900 MHz Radio Board for the purpose of communicating between central computer and Calsense® CS 3000 controller. A separate SR Radio antenna shall be required.			



Specifications For PRE - INSTALLED OPTIONS CALSENSE® ET3000™ CONTROLLERS

Calsense® Controller Communication Options Cont.

PART#	DESCRIPTION		
CS3SRK	CALSENSE® SPREAD SPECTRUM RADIO AND SR STUBBY ANTENNA The Calsense® Controller Assembly shall be provided with the Calsense® Spread Spectrum 900 MHz Radio Board for the purpose of communicating between Calsense® CS 3000 controllers. The SR-STUBBY antenna shall be pre-mounted and wired to the SR Radio communication board.		
CS3M	CALSENSE® M-CHAIN HARDWIRE COMMUNICATION CARD The Controller Assembly shall be provided with a CS3M Hardware Communication Card and Terminal Board for the purpose of sharing communication between controllers from a primary communication via Paige P7171D communication cable. Each controller connected must include the Communication Card.		

Calsense® Communication Hub Option

PAF	RT#	DESCRIPTION
CS3	HUB	CALSENSE® COMMUNICATION HUB FOR CENTRAL COMPUTER AND CONTROLLERS IN THE FIELD The Controller Assembly shall be provided with the Calsense HUB Option to enable a CS3000 irrigation controller to act as a communica- tion hub to share a central link between Spread Spectrum Radio controllers.

Calsense® Data Communication Options

PART#	DESCRIPTION			
COMM-1YR-2	CALSENSE® CELLULAR DATA COMMUNICATION PACKAGE – 1 YEAR The Controller Assembly shall be provided with the Calsense® 1 Year pre-paid data communication plan for 1 cellular CS3GR(K) modem for 1-2 controllers.			
COMM-5YR-2	CALSENSE® CELLULAR DATA COMMUNICATION PACKAGE – 5 YEARS The Controller Assembly shall be provided with the Calsense® 5 Year pre-paid data communication plan for 1 cellular CS3GR(K) modem for 1-2 controllers.			
COMM-1YR-4	CALSENSE® CELLULAR DATA COMMUNICATION PACKAGE – 1 YEAR The Controller Assembly shall be provided with the Calsense® 1 Year pre-paid data communication plan for 1 cellular CS3GR(K) modem for 3-4 controllers.			
COMM-5YR-4	CALSENSE® CELLULAR DATA COMMUNICATION PACKAGE – 5 YEARS The Controller Assembly shall be provided with the Calsense® 5 Year pre-paid data communication plan for 1 cellular CS3GR(K) modem for 3-4 controllers.			
COMM-1YR-35	CALSENSE® CELLULAR DATA COMMUNICATION PACKAGE – 1 YEAR The Controller Assembly shall be provided with the Calsense® 1 Year pre-paid data communication plan for 1 cellular CS3GR(K) modem for 5-35 controllers			
COMM-5YR-35	CALSENSE® CELLULAR DATA COMMUNICATION PACKAGE – 5 YEARS The Controller Assembly shall be provided with the Calsense® 5 Year pre-paid data communication plan for 1 cellular CS3GR(K) modem for 5-35 controllers.			
COMM-1YR-36+	CALSENSE® CELLULAR DATA COMMUNICATION PACKAGE – 1 YEAR The Controller Assembly shall be provided with the Calsense® 1 Year pre-paid data communication plan for 1 cellular CS3GR(K) moden for 36+ controllers.			
COMM-5YR-36+	CALSENSE® CELLULAR DATA COMMUNICATION PACKAGE – 5 YEARS The Controller Assembly shall be provided with the Calsense® 5 Year pre-paid data communication plan for 1 cellular CS3GR(K) modem for 36+ controllers			



Specifications For PRE - INSTALLED OPTIONS CALSENSE® ET3000™ CONTROLLERS

Calsense® Data Communication Options

PART#	DESCRIPTION				
COMM-10YR-2	CALSENSE® CELLULAR DATA COMMUNICATION PACKAGE – 10 YEARS The Controller Assembly shall be provided with the Calsense® 10 Year pre-paid data communication plan for 1 cellular CS3GR(K) modem for 1-2 controllers.				
COMM-10YR-4	CALSENSE® CELLULAR DATA COMMUNICATION PACKAGE – 10 YEARS The Controller Assembly shall be provided with the Calsense® 10 Year pre-paid data communication plan for 1 cellular CS3GR(K) modem for 3-4 controllers.				
COMM-10YR-35	CALSENSE® CELLULAR DATA COMMUNICATION PACKAGE – 10 YEARS The Controller Assembly shall be provided with the Calsense® 10 Year pre-paid data communication plan for 1 cellular CS3GR(K) modem for 5-35 controllers.				
CS3GR-BUND-2 CS3GR-BUND-2 CALSENSE® CELLULAR DATA COMMUNICATION PACKAGE – 10 YEARS The Controller Assembly shall be provided with the Calsense® GPRS Cellular Communication Board for the purpose of between central computer and Calsense® CS 3000 controller. The GR-STUBBY antenna shall be pre-mounted and w Cellular communication board. The Controller Assembly shall als be provided with the Calsense® 10 Year pre-paid da plan for 1 cellular CS3GR(K) modem for 1-2 controllers.					
CS3GR-BUND-4 CCS3GR-BUND-4 CCS					
CS3GR-BUND-35	CALSENSE® CELLULAR DATA COMMUNICATION PACKAGE – 10 YEARS The Controller Assembly shall be provided with the Calsense® GPRS Cellular Communication Board for the purpose of communicating between central computer and Calsense® CS 3000 controller. The GR-STUBBY antenna shall be pre-mounted and wired to the GPRS Cellular communication board. The Controller Assembly shall als be provided with the Calsense® 10 Year pre-paid data communication plan for 1 cellular CS3GR(K) modem for 5-35 controllers.				

Calsense® Data Communication Options

PART#	DESCRIPTION		
GR-STUBBY	CALSENSE® GPRS CELLULAR STUBBY ANTENNA The Controller Assembly shall be provided with the Calsense® GPRS Cellular Stubby Antenna for the purpose of communicating between the Cloud and Calsense® controller with GR Cellular Board. The GR Stubby antenna shall be pre-mounted and wired to the GPRS Cellular communication board.		
GR-STICK	CALSENSE® GPRS CELLULAR 5 dBi STICK ANTENNA The Controller Assembly shall be provided with the Calsense® GPRS Cellular Stick Antenna for the purpose of communicating between the Cloud and Calsense® controller with GR Cellular Board. The GR Stick antenna shall operate at 5 dBi range. The GR-STICK shall be provided separately for installation. Antenna cable is not included and required (See cable options).		



Specifications For PRE - INSTALLED OPTIONS CALSENSE® ET3000™ CONTROLLERS

Calsense® Communication Antenna Options Cont.

PART#	DESCRIPTION			
GR-YAGI11	CALSENSE® GPRS CELLULAR 11-dBi YAGI DIRECTIONAL ANTENNA The Controller Assembly shall be provided with the Calsense® GPRS Cellular high-gain Yagi Antenna for the purpose of communicating between the Cloud and Calsense® controller with GR 4G LTE Cellular Board. The GR Yagi antenna shall operate at 11 dBi range. The GR-YAGI shall be provided separately for installation. Antenna cable is not included and required (See cable options).			
SR-STUBBY	CALSENSE® SPREAD SPECTRUM RADIO STUBBY ANTENNA The Controller Assembly shall be provided with the Calsense® SR Stubby Antenna for the purpose of communicating between the Cloud and Calsense® controller with SR Radio Board. The SR Stubby antenna shall be pre-mounted and wired to the SR Radio communication board.			
SR-STICK6	CALSENSE® SPREAD SPECTRUM RADIO 6 dBi STICK ANTENNA The Controller Assembly shall be provided with the Calsense® SR 6 dBi Stick Antenna for the purpose of communicating between the Cloud and Calsense® controller with SR Radio Board. The SR Stick antenna shall operate at 6 dBi range. The GR-STICK6 shall be provided separately for installation. Antenna cable is not included and required (See cable options).			
SR-STICK9	CALSENSE® SPREAD SPECTRUM RADIO 9 dBi STICK ANTENNA The Controller Assembly shall be provided with the Calsense® SR 9 dBi Stick Antenna for the purpose of communicating between the Cloud and Calsense® controller with SR Radio Board. The SR Stick antenna shall operate at 9 dBi range. The GR-STICK9 shall be provided separately for installation. Antenna cable is not included and required (See cable options).			
SR-YAGI9	CALSENSE® SPREAD SPECTRUM RADIO 9 dBi YAGI DIRECTIONAL ANTENNA The Controller Assembly shall be provided with the Calsense® SR 9 dBi Yagi Antenna for the purpose of communicating between the Cloud and Calsense® controller with SR Radio Board. The SR Yagi antenna shall operate at 9 dBi range. The GR-Yagi9 shall be provided separately for installation. Antenna cable is not included and required (See cable options).			
WEN-STUBBY	CALSENSE® Wi-Fi STUBBY ANTENNA The Controller Assembly shall be provided with the Calsense® Wi-Fi Stubby Antenna for the purpose of communicating between the Cloud and Calsense® controller with Wi-Fi Board. The WEN Stubby antenna shall be pre-mounted and wired to the WEN communication board.			
WEN-YAGI11	CALSENSE® Wi-Fi 11-dBi YAGI DIRECTIONAL ANTENNA The Controller Assembly shall be provided with the Calsense® Wi-Fi high-gain Yagi Antenna for the purpose of communicating between the Cloud and Calsense® controller with a Wi-Fi Board. The WEN Yagi antenna shall operate at 11 dBi range. The WEN-YAGI11 shall be provided separately for installation. Antenna cable is not included and required (See cable options).			
ANT-PROT	CALSENSE® ANTENNA PROTECTION The Calsense® Controller Assembly shall be provided with the Calsense Antenna Protection against surge.			
SRFILT	CALSENSE® SPREAD SPECTRUM FILTER The Calsense® Controller Assembly shall be provided with the Calsense SR Radio Frequency Filter to protect against radio signal interference			

IMPERIAL TECHNICAL SERVICES support@imperialtechnical.com



Specifications For PRE - INSTALLED OPTIONS CALSENSE® ET3000™ CONTROLLERS

Calsense® Communication Antenna Cable Options

PART#	DESCRIPTION
LMR-195-DB-10FT	CALSENSE® ANTENNA CABLE FOR GR-STICK5 The Calsense® Controller Assembly shall be provided with the 10' of LMR-195 cable for field installation on a pole or building.
LMR-195-DB-20FT	CALSENSE® ANTENNA CABLE FOR GR-STICK5 The Calsense® Controller Assembly shall be provided with the 20' of LMR-195 cable for field installation on a pole or building.
LMR-195-DB-40FT	CALSENSE® ANTENNA CABLE FOR GR-STICK5 The Calsense® Controller Assembly shall be provided with the 40' of LMR-195 cable for field installation on a pole or building.
LMR-195-DB-50FT	CALSENSE® ANTENNA CABLE FOR GR-STICK5 The Calsense® Controller Assembly shall be provided with the 50' of LMR-195 cable for field installation on a pole or building.
LMR-400-DB-10FT	CALSENSE® ANTENNA CABLE FOR SPREAD SPECTRUM RADIO ANTENNA The Calsense® Controller Assembly shall be provided with the 10' of LMR-400 cable for field installation on a pole or building.
LMR-400-DB-20FT	CALSENSE® ANTENNA CABLE FOR SPREAD SPECTRUM RADIO ANTENNA The Calsense® Controller Assembly shall be provided with the 20' of LMR-400 cable for field installation on a pole or building.
LMR-400-DB-30FT	CALSENSE® ANTENNA CABLE FOR SPREAD SPECTRUM RADIO ANTENNA The Calsense® Controller Assembly shall be provided with the 30' of LMR-400 cable for field installation on a pole or building.
LMR-400-DB-40FT	CALSENSE® ANTENNA CABLE FOR SPREAD SPECTRUM RADIO ANTENNA The Calsense® Controller Assembly shall be provided with the 40' of LMR-400 cable for field installation on a pole or building.
LMR-400-DB-50FT	CALSENSE® ANTENNA CABLE FOR SPREAD SPECTRUM RADIO ANTENNA The Calsense® Controller Assembly shall be provided with the 50' of LMR-400 cable for field installation on a pole or building.

IMPERIAL TECHNICAL SERVICES support@imperialtechnical.com



Specifications For PRE - INSTALLED OPTIONS CALSENSE® ET3000™ CONTROLLERS

Calsense® Add-On Modules and Software Options

PART#	DESCRIPTION			
CS3-8STA-KIT	CALSENSE® 8 STATION BOARD The Controller Assembly shall be provided with the Calsense® add -on card and terminal board to add up to 8 additional conventionally wired stations to an existing controller. A single CS3000 supports up to 6 of these 8 station boards for a total of 48 stations.			
CS3-FL	CALSENSE® FLOW SENSE Software only The Controller Assembly shall be provided with a FLOWSENSE option for the purpose of allowing the user to set the irrigation schedule in a stand-alone, multiple, or central controller based on irrigation system capacities. This feature allows use of the controllers to share flow, master valve, and pump information between each other. Each controller sharing this information must be specified with the –CS3-FL option.			
СЅЗѠҜ	CALSENSE® WEATHER CARD and TERMINAL The Controller Assembly shall be provided with the Calsense® Weather Card and Terminal for the purpose of allowing a weather source input to a CS3000 controller including Calsense® ET Gage, Rain Bucket, or Wind Gage, or third-party Rain Switch and/or Freeze Switch.			
CS3LK	CALSENSE® FLOW INTERFACE FOR 4 ADDITIONAL LIGHT CIRCUITS The Controller Assembly shall be provided with a option for the purpose of controlling external devices such as lights, gates, and water eatures. Each controller requiring the need to control these external devices must have this CS3LK feature. External relays and the levice that is to be controlled are not included.			
CS3-2WOPT	CALSENSE® 2-WIRE OPTION The Controller Assembly shall be provided with the Calsense® 2-Wire Terminal and Cover for the purpose of adding 2-Wire interface to a CS3000 conventional-wired base model controller.			
CS3POCK	CALSENSE® POC KIT The Controller Assembly shall be provided with the Calsense® POC card and terminal board for the purpose of adding a conventionally wired POC (master valve and flow sensor) to a 2-Wire controller.			
CSRB-1	CALSENSE® RAIN BUCKET AND INTERFACE TO READ RAIN SENSING The Controller Assembly shall be provided with a Tipping Rain Bucket and CSRB-1 Interface Board for the purpose of monitoring rainfall at .01" increments. The CSRB-1 can be connected to more than one controller on a given site or data may be shared with other Calsense® controllers. The CSRB-1 consists of 9.5"h x 6.25" diameter aluminum housed rain bucket suitable for flat surface or pole mounting. Pole is not included. The CSRB-1 Interface is a factory installed board installed with a controller.			
CSWG-1	CALSENSE® WIND GAGE The Controller Assembly shall be provided with a Wind Gage and CSWG-1 Interface Board for the purpose of monitoring rainfall at .01" increments. The CSWG-1 can be connected to more than one controller on a given site or data may be shared with other Calsense® controllers. The CSWG-1 consists of 7.5"h x 4.0" cup diameter aluminum constructed sensor suitable for flat surface or pole mounting. Pole is not included. The CSWG-1 Interface is a factory installed board installed with a controller. The CSWG-1 may be located up to 60' from controller with supplied two-conductor cable.			

IMPERIAL TECHNICAL SERVICES support@imperialtechnical.com

Specifications For PRE - INSTALLED OPTIONS CALSENSE® ET3000™ CONTROLLERS

Calsense® 2-Wire Decoder Options

PART#	DESCRIPTION			
CS3DEC2	CALSENSE® TWO VALVE FIELD DECODER The Calsense® 128 station Decoder System Assembly shall be provided with a two-valve field Decoder for the purpose of providing an interface between the CS3000 controller to each valve. Each Decoder shall have a pre-programmable station address from 1-128. The CS-2W-ST is capable of two outputs. A maximum of 70 – 2 station decoders may be used on a single 128 station CS3000 controller.			
CS3POC	CALSENSE® 2-WIRE POC DECODER The Controller Assembly shall be provided with the Calsense® POC Decoder for the purpose of allowing a single master valve and flow sensor output to a single CS3000 controller.			
CS3MOIST	CALSENSE® 2-WIRE MOISTURE SENSOR The Controller Assembly shall be provided with the Calsense® 2-Wire Soil Moisture Sensor Decoder with 1-station output and attached moisture sensor for the purpose of measuring soil moisture, temperature, and salinity.			
GRD-K	8' GROUND ROD and CLAMP The Controller Assembly shall be provided with an 5/8" x 8' Ground Rod, 5/8" Clamp, and 10' of #6 bare ground wire for the purpose of providing grounding protection to the controller electrical components.			
GP8-K	8' GROUND PLATE and 25' of #6 GROUND WIRE The Controller Assembly shall be provided with a 4" x 96" Copper Ground Plate, and 25' of #6 ground wire for the purpose of providing grounding protection to the controller electrical components. The #GP8-K Kit shall be used primarily with an 8' Ground Rod per National Electric Code requirements for grounding. Includes 2- 50 lb. bags of PowerFill TM or PowerSet® backfill material for ground plate installation.			
GP3-K	3' GROUND PLATE and 10' of #6 GROUND WIRE The Controller Assembly shall be provided with a 4" x 36" Copper Ground Plate, and 10' of #6 ground wire for the purpose of providing grounding protection to the controller electrical components. The #GP3-K Kit shall be used primarily on two wire decoder system path grounding along with the specific manufacturer's surge suppression device per each specific manufacturer's grounding requirements. Includes 1- 50 lb. bag of PowerFill [™] or PowerSet® backfill material for ground plate installation.			

Calsense® Flow Sensor Options

PART#	DESCRIPTION				
	CALSENSE® FLOW SENSOR (DATA INDUSTRIAL) The Controller Assembly shall be provided with a Calsense® Flow Sensor assembly for use in conjunction with a master valve to monito and shut down the irrigation system in the event of an excess flow condition. This assembly shall consist of a tee mounted flow sensor* only for installation in the piping system.				
	Part Number	Sensor Size	Velocity (FPS)	Low/High Flow Range	
	FM 1B	1" Brass	5 – 7.5 FPS	2-30 GPM	
FM-XX	FM 1.25B	1 ¼" Brass	5 – 7.5 FPS	3-50 GPM	
1101700	FM 1.5B	1 ½" Brass	5 – 7.5 FPS	6-60 GPM	
	FM 1.5	1 1⁄2" PVC	5 – 7.5 FPS	6-60 GPM	
	FM 2B	2" Brass	5 – 7.5 FPS	10-130 GPM	
	FM 2	2" PVC	5 – 7.5 FPS	10-130 GPM	
	FM 3	3" PVC	5 – 7.5 FPS	20-175 GPM	
	*FMBX	3-10" Brass Insert	5 – 7.5 FPS	75-1000 GPM	
	* Saddle is not included with FMBX In	* Saddle is not included with FMBX Insert. Purchased separately.			

IMPERIAL TECHNICAL SERVICES support@imperialtechnical.com

1480 Hancock St, Anaheim, CA, 92807 P: 714-696-7535 F: 714-696-7545 6630 Patterson Rd, Livermore CA 94550 P: 925-667-2190 F: 925-667-2197



Specifications For PRE - INSTALLED OPTIONS CALSENSE® ET3000™ CONTROLLERS

Calsense® Flow Sensor Options

PART#	DESCRIPTION	DESCRIPTION			
	CALSENSE® FLOW SENSOR (FLOMEC® ULTRASONIC FLOW METER) The Controller Assembly shall be provided with a Flomec® Ultrasonic Flow Meter assembly for use in conjunction with a master valve to monitor and shut down the irrigation system in the event of an excess flow condition. This assembly shall consist of a tee mounted flow sensor* only for installation in the piping system.				
FM XU	Part Number FM 1U	Sensor Size 1" PVC Sch. 80	Velocity Range (FPS) 5 – 7.5 FPS	*Low/High Flow Range .5-40 GPM	
T M XO	FM 1.5U	1 ½" PVC Sch. 80	5 – 7.5 FPS	1-80 GPM	
	FM 2U	2" PVC Sch.80	5 – 7.5 FPS	2- 150 GPM	
	FM 3U	3" PVC Sch. 80	5 – 7.5 FPS	4-300 GPM	
	FM 4U	4" PVC Sch.80	5 – 7.5 FPS	8-600 GPM	
	FM 6U	6" SADDLE 5 – 7.5 FF	25	12-800 GPM	

Calsense® 2-Wire Decoder Options

PART#	DESCRIPTION	
CS3RR	CALSENSE® CELLULAR HAND-HELD SMARTPHONE REMOTE The Controller Assembly shall be provided with the Calsense Hand-Held Cellular Smartphone for the purpose of remote valve operation for the Calsense CS3000 controller. The #CS3RR shall include 1 Year pre-paid data communication plan.	
COMM-1YR-RR	CALSENSE® CELLULAR DATA COMMUNICATION FOR HAND-HELD REMOTE (#CS3RR) The Controller Assembly shall be provided with the Calsense 1 Year pre-paid data communication plan for 1 cellular communication for the #CS3RR Hand-Held Remote.	
COMM-5YR-RR	CALSENSE® CELLULAR DATA COMMUNICATION FOR HAND-HELD REMOTE (#CS3RR) The Controller Assembly shall be provided with the Calsense 5 Years pre-paid data communication plan for 1 cellular communication for the #CS3RR Hand-Held Remote.	