

**QUADRO DI CAMPO
STRINGBOX 240**

Generatore Fotovoltaico

Stringa 1

Stringa 24

stringbox 240

LEGENDA

- Cavo in corrente continua per collegamento del modulo
- Cavo in corrente continua per collegamento delle stringhe di moduli in serie
- Cavo in corrente continua per collegamento del quadro di collegamento all'antenna
- Cavo galvanizzato per collegamento all'antenna di terra

**QUADRO DI CAMPO
STRINGBOX 320**

Generatore Fotovoltaico

Stringa 1

Stringa 32

stringbox 320

The diagram shows a digital logic circuit. At the top, a 5V supply is connected to a network of inverters and NAND gates. A 10V supply is connected to a 7401 NAND gate. The 7401 NAND gate has inputs 'Y0' and 'Y1', and an output 'M'. Below this, a 50.51 N block is shown with inputs 'LINE IN' and 'LINE STORAGE', and an output 'LINE OUT'. The 50.51 N block is connected to the 7401 NAND gate. The 7400 NAND gate is also shown, with inputs 'Y0' and 'Y1', and an output 'M'. The circuit is powered by a 5V supply and a 10V supply.

SYSTEM SPECIFICATIONS		PV INTERFACE	
RATED AC POWER (25°C / 80 °C)	Up to 3.3 MVA/3.0 MVA	Max DC Voltage Open circuit	1500 Vdc
GRID VOLTAGE	11 kV; 13.8 kV; 34.5 kV (OTHER OPTIONS AVAILABLE)	MPPT Min DC Voltage	849Vdc
GRID FREQUENCY	50 / 60 HZ	PV Inputs	Up to 36
REACTIVE POWER	FOUR-QUADRANT CONTROL, 0.9 LEADING TO 1.05 LAGGING AT RATED POWER	Max PV Short Circuit Current	±8kA
INVERTER EFFICIENCY	98.5 %	BATTERY SPECIFICATIONS	
OPERATING TEMPERATURE	-20°C to 50°C	BATTERY BLOCK POWER	500kWe
ALTITUDE	Derated over 2,000 meters	NUMBER OF BATTERY BLOCKS	Up to 6
SEISMIC RATING	Tested to Zone 4	BATTERY DURATION	2+ hours
DESIGN LIFETIME	Up to 25 years with battery augmentation, usage dependent	ROUND TRIP EFFICIENCY (DC/DC)	Varies by configuration
OPERATIONAL CAPABILITIES	Dispatchable PV, Pump Rate limiting, Frequency regulation, primary frequency response, Automatic Voltage regulation, Contingency Response	ENCLOSURE DIMENSIONS	Standard ISO container or customized to meet requirements
SYSTEM RESPONSE TIME	Max capacity change in <1 second	COOLING	Air to air DX
CONTROL & MONITORING	Controls include HMI, SCADA, Data Historian, Application Agents, and Advanced Performance Algorithms	FIRE SUPPRESSION	Non aqueous (e.g. inert gas or aerosol)
EXTERNAL CONTROL INTERFACE	SCADA and EMS integration available for common protocols including DNP3	BATTERY MONITORING	Including state of charge, state of health, maximum cell voltage, maximum cell temperature, power limits, current limits, component failures, ground fault
STANDARDS COMPLIANCE	IEEE 1547, IEC 61733, IEC 61734, IEC 61735, IEC 61736, IEC 61737, IEC 61738, IEC 61739, IEC 61740, IEC 61741, IEC 61742, IEC 61743, IEC 61744, IEC 61745, IEC 61746, IEC 61747, IEC 61748, IEC 61749, IEC 61750, IEC 61751, IEC 61752, IEC 61753, IEC 61754, IEC 61755, IEC 61756, IEC 61757, IEC 61758, IEC 61759, IEC 61760, IEC 61761, IEC 61762, IEC 61763, IEC 61764, IEC 61765, IEC 61766, IEC 61767, IEC 61768, IEC 61769, IEC 61770, IEC 61771, IEC 61772, IEC 61773, IEC 61774, IEC 61775, IEC 61776, IEC 61777, IEC 61778, IEC 61779, IEC 61780, IEC 61781, IEC 61782, IEC 61783, IEC 61784, IEC 61785, IEC 61786, IEC 61787, IEC 61788, IEC 61789, IEC 61790, IEC 61791, IEC 61792, IEC 61793, IEC 61794, IEC 61795, IEC 61796, IEC 61797, IEC 61798, IEC 61799, IEC 61800, IEC 61801, IEC 61802, IEC 61803, IEC 61804, IEC 61805, IEC 61806, IEC 61807, IEC 61808, IEC 61809, IEC 61810, IEC 61811, IEC 61812, IEC 61813, IEC 61814, IEC 61815, IEC 61816, IEC 61817, IEC 61818, IEC 61819, IEC 61820, IEC 61821, IEC 61822, IEC 61823, IEC 61824, IEC 61825, IEC 61826, IEC 61827, IEC 61828, IEC 61829, IEC 61830, IEC 61831, IEC 61832, IEC 61833, IEC 61834, IEC 61835, IEC 61836, IEC 61837, IEC 61838, IEC 61839, IEC 61840, IEC 61841, IEC 61842, IEC 61843, IEC 61844, IEC 61845, IEC 61846, IEC 61847, IEC 61848, IEC 61849, IEC 61850, IEC 61851, IEC 61852, IEC 61853, IEC 61854, IEC 61855, IEC 61856, IEC 61857, IEC 61858, IEC 61859, IEC 61860, IEC 61861, IEC 61862, IEC 61863, IEC 61864, IEC 61865, IEC 61866, IEC 61867, IEC 61868, IEC 61869, IEC 61870, IEC 61871, IEC 61872, IEC 61873, IEC 61874, IEC 61875, IEC 61876, IEC 61877, IEC 61878, IEC 61879, IEC 61880, IEC 61881, IEC 61882, IEC 61883, IEC 61884, IEC 61885, IEC 61886, IEC 61887, IEC 61888, IEC 61889, IEC 61890, IEC 61891, IEC 61892, IEC 61893, IEC 61894, IEC 61895, IEC 61896, IEC 61897, IEC 61898, IEC 61899, IEC 61900, IEC 61901, IEC 61902, IEC 61903, IEC 61904, IEC 61905, IEC 61906, IEC 61907, IEC 61908, IEC 61909, IEC 61910, IEC 61911, IEC 61912, IEC 61913, IEC 61914, IEC 61915, IEC 61916, IEC 61917, IEC 61918, IEC 61919, IEC 61920, IEC 61921, IEC 61922, IEC 61923, IEC 61924, IEC 61925, IEC 61926, IEC 61927, IEC 61928, IEC 61929, IEC 61930, IEC 61931, IEC 61932, IEC 61933, IEC 61934, IEC 61935, IEC 61936, IEC 61937, IEC 61938, IEC 61939, IEC 61940, IEC 61941, IEC 61942, IEC 61943, IEC 61944, IEC 61945, IEC 61946, IEC 61947, IEC 61948, IEC 61949, IEC 61950, IEC 61951, IEC 61952, IEC 61953, IEC 61954, IEC 61955, IEC 61956, IEC 61957, IEC 61958, IEC 61959, IEC 61960, IEC 61961, IEC 61962, IEC 61963, IEC 61964, IEC 61965, IEC 61966, IEC 61967, IEC 61968, IEC 61969, IEC 61970, IEC 61971, IEC 61972, IEC 61973, IEC 61974, IEC 61975, IEC 61976, IEC 61977, IEC 61978, IEC 61979, IEC 61980, IEC 61981, IEC 61982, IEC 61983, IEC 61984, IEC 61985, IEC 61986, IEC 61987, IEC 61988, IEC 61989, IEC 61990, IEC 61991, IEC 61992, IEC 61993, IEC 61994, IEC 61995, IEC 61996, IEC 61997, IEC 61998, IEC 61999, IEC 62000, IEC 62001, IEC 62002, IEC 62003, IEC 62004, IEC 62005, IEC 62006, IEC 62007, IEC 62008, IEC 62009, IEC 62010, IEC 62011, IEC 62012, IEC 62013, IEC 62014, IEC 62015, IEC 62016, IEC 62017, IEC 62018, IEC 62019, IEC 62020, IEC 62021, IEC 62022, IEC 62023, IEC 62024, IEC 62025, IEC 62026, IEC 62027, IEC 62028, IEC 62029, IEC 62030, IEC 62031, IEC 62032, IEC 62033, IEC 62034, IEC 62035, IEC 62036, IEC 62037, IEC 62038, IEC 62039, IEC 62040, IEC 62041, IEC 62042, IEC 62043, IEC 62044, IEC 62045, IEC 62046, IEC 62047, IEC 62048, IEC 62049, IEC 62050, IEC 62051, IEC 62052, IEC 62053, IEC 62054, IEC 62055, IEC 62056, IEC 62057, IEC 62058, IEC 62059, IEC 62060, IEC 62061, IEC 62062, IEC 62063, IEC 62064, IEC 62065, IEC 62066, IEC 62067, IEC 62068, IEC 62069, IEC 62070, IEC 62071, IEC 62072, IEC 62073, IEC 62074, IEC 62075, IEC 62076, IEC 62077, IEC 62078, IEC 62079, IEC 6		

The diagram illustrates a hybrid power system architecture. At the top, a SCADA laptop is connected to an INGECON SUN EMS PLANT CONTROLLER. Below this, the system is divided into three main energy sources: 1. IMPIANTO FOTOVOLTAICO (Photovoltaic Plant) represented by solar panels, which output DC power to an INGECON SUN inverter. 2. BATTERIE (Batteries) represented by a bank of battery units, which output DC power to an INGECON SUN STORAGE inverter. 3. RETE (Grid) represented by power lines and towers. The inverters output AC power, which is then connected to the grid. A green line indicates a communication or control link between the EMS controller and the grid connection point.

DOUBLE + DUAL INVERTER

SINGLE + DUAL INVERTER

DUAL INVERTER

	MS21 DUAL INVERTER	MS21 SINGLE + DUAL INVERTER	MS20 DOUBLE + DUAL INVERTER
NUMBER OF INVERTERS	2	3	4
RATED POWER @30°C / 120 °F	3,227 kVA	4,840 kVA	6,454 kVA
RATED POWER @30°C / 86 °F	3,588 kVA	5,379 kVA	7,172 kVA
VOLTAGE CLASS	24 - 38 kV	24 - 38 kV	24 - 38 kV

INGECON SUN STORAGE

Locale Quadro MT

INGECON SUN

BOX BATTERIA 1.1

BOX BATTERIA 1.2

BOX BATTERIA 2.1

BOX BATTERIA 2.2

BATTERIE LINEA 1

BATTERIE LINEA 2

The diagram illustrates the electrical connection of the INGECON SUN STORAGE 1640 B630 TL inverter. On the left, a battery bank is connected to the DC input of the inverter. The inverter's AC output is connected to the grid through a filter and an AC-precargica unit. The diagram includes labels for 'BATTERIE', 'DC - PRECARICA', 'FILTRO', and 'AC - PRECARICA'.

[illegible]