

### iCall Bathroom Station (SEP)

Local Bus address unit with emergency button, cancel button and pull cord. This bathroom station is connected to the local bus using a 4 wire connection. The bathroom station is programmed as an address on the bus, which can contain up to a maximum of 50 addresses. The IP-unit tests the communication to and from the bathroom station every minute. On the backside there is a connection for the 4 wire local bus and 2 additional inputs and 2 additional outputs to connect external devices.

### General system description

The local bus is a four wire bus that can be connected to any cable structure. Bus topology, star topology or a combination of both can be used. The maximum total cable length between the IP-units and the furthest LB-units on the bus is 3280 feet (1000m) or the lowest voltage at the LB-units Tx or Rx wire is 18V DC. The four wire bus is composed of one wire conducting 24V DC, one wire serving as GND, one wire serving as Rx and one wire serving as Tx. The IP-unit can support up to 50 LB-units per bus. If there are more than 50 LB-units an additional IP unit is needed and another bus needs to be created.

### Features

#### Type of calls on front:

- Bathroom Call
- Bathroom Staff Assist
- Emergency Call
- Staff Presence or Cancel
- Cancel

#### Type of calls on backside input (max 2):

- Call
- Staff Presence or Cancel
- Staff Assist
- Cancel
- Emergency Call
- Bathroom Call
- Door
- Code Blue
- Technical Alarm

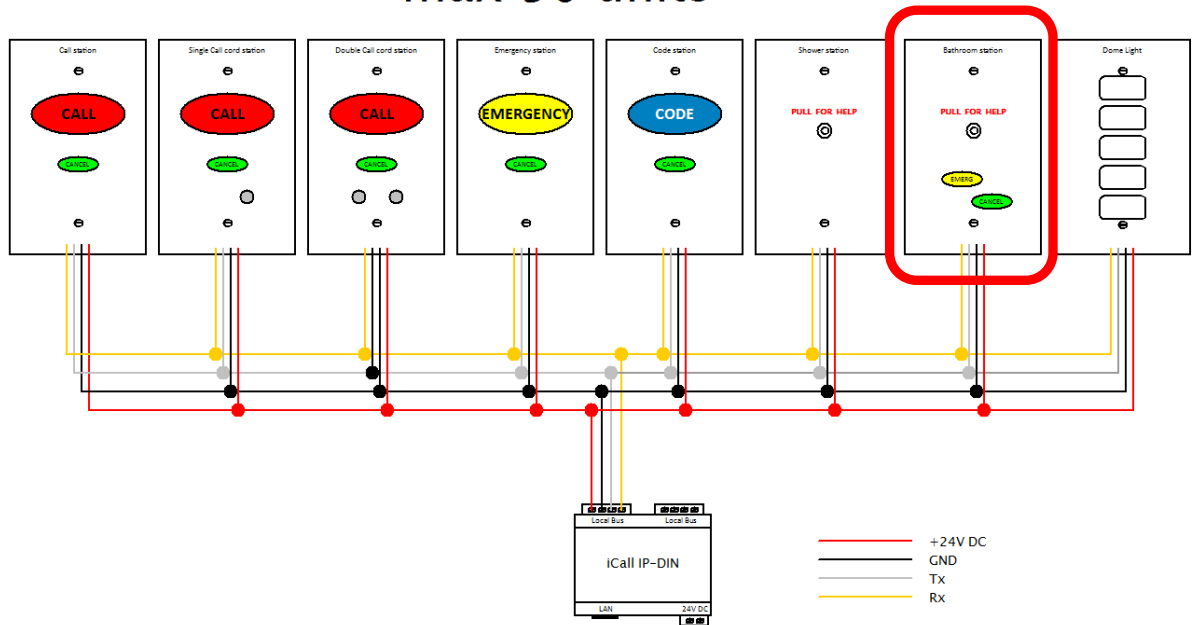
#### Type of outputs on backside (max 2):

- Call
- Staff Presence
- Bathroom Call
- Code Blue
- Technical Alarm

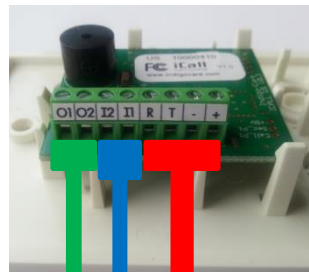


## Topology

max 50 units



## Connections



Name	Description
O1	Output 1
O2	Output 2
I2	Input 2
I1	Input 1
R	Rx data line
T	Tx data line
-	GND
+	+24V DC

Version

HW: iCall\_US V0.3  
SW: iCall\_US V1.0

## iCall\_US product range

## General Absolute Maximum Ratings !

		min	typ	max	unit
Supply Voltage	V <sub>cc</sub>	18	24	30	V
Supply Current forward	I <sub>f</sub>	5	6	11	mA
Operating Temperature (ambient)	T <sub>amb</sub>	0	-	65	°C
Maximum reverse voltage	V <sub>r</sub>	-	40	-	V
Leakage current (reverse)	I <sub>r</sub>	-	-	15	µA

## Mechanical properties

Parameter		min	typ	max	unit	
PCB	Dimensions	L x W x H	-	40,5 x 46,5 x 14	-	mm
		L x W x H	-	1,59" x 1,83" x 0,55	-	" (inch)
		L x W x H	-	1594,5 x 1830,7 x 551,2	-	mils
	base material		-	FR-4, Td>=325°C, T260>=60', T288>=5', CTEz<3.7%, Tg>=135°C	-	-
		copper layer thickness	-	1,378	-	mils
	isolation thickness		-	0,035	-	mm
			-	59,055	-	mils
	Total thickness		-	1,5	-	mm
			-	61,811	-	mils
	weight		-	1,57	-	mm
		-	0,0287	-	lbs	
Plastic	base material		reference doc (Polyiac 765A.PDF)	PA-765A	Acrylonitrile Butadiene Styrene	
	Weight		-	0,0276	-	lbs
Foil	base material		reference doc (Reflex LT.PDF)	Reflex	Hardcoated Polyester Film	
	Weight		-	0,0000	-	lbs
Total Assembly	Weight		-	-	-	kg
			-	0,0562	-	lbs
		-	0,026	-	kg	

## Electrical properties

Symbol	Parameter	State	min	typ	max	unit				
V <sub>cc</sub>	Operating Voltage		18	24	30	V dc				
I <sub>f</sub>	Forward Supply Current	Standby	Finders LED off			mA				
			Finders LED low			mA				
			Finders LED medium			mA				
		Emergency	Finders LED high			mA				
			Buzzer low			mA				
			Buzzer medium			mA				
P <sub>tot</sub>	Power Consumption	Standby	Finders LED off	0	0	0	mW			
			Finders LED low	0	0	0	mW			
			Finders LED medium	0	0	0	mW			
			Finders LED high	0	0	0	mW			
		Emergency	Finders LED medium	0	0	0	mW			
			Buzzer low	0	0	0	mW			
			Buzzer medium	0	0	0	mW			
			Buzzer high	0	0	0	mW			
			V <sub>input</sub>	IO input voltage Range	Logical High	independant of V <sub>cc</sub>	3,3	5 ↔ 24	30	V
					Logical Low	independant of V <sub>cc</sub>	0	-	2,8	V
I <sub>output max</sub>	IO Output current limit	current limitation	open-collector	-	55	-	mA			
F	frequency	Buzzer		-	2300	-	Hz			
L	Sound output level	Buzzer	Buzzer state at 'high'	85	-	-	dB			

## Thermal properties

Parameter		min	typ	max	unit
Flamability rating	Plastic	-	V0	-	-
	UL Flame Class* Foil	-	HB	-	-
Suggested temperature use Foil		-40	-	176	°F
		-40	-	80	°C

## Operation / button specific properties

Parameter		min	typ	max	unit
Control buttons					Pull string ; Cancel ; Emergency
indicators	LED's				Emergency ; Cancel ; registration
	Buzzer				Call (toilet) ; Assistance ; Room State ; Call following ; IO defenitions
Pull string	Activation force	min	typ	max	
		-	4,22	-	N
		-	0,43	-	kg
Buzzer interval	ratio Ton / Toff		0,947978	-	lbs
		Urgence		ON=440 OFF=440	-
	Assistance		ON=825 OFF=825	-	ms

## Additional Components

Component	Use	Material			
Magnet	Hall sensor activation	NdFeB => Type:S-06-2,5-HN ; www.supermagnete.be			
Leave Spring	Movement of magnet	Stainless Steel (DIN 17224/59381 Stainless Steel AISI 301 1.4310)			
Pull Cord	Safety Break-away Force	min	typ	max	unit
		-	20	-	kg
		-	44,1	-	lbs
	Material patient cord				
	Material internal cord (piece before safety break-away)				

## Regulations

FCC	Part 15B: 2010-10 ; Class B ANSI C 63.4:2003	Passed	
ESD	IEC 61000-4-2, Edition 2.0 2008-12	Contact discharge @ ±2 kV & ±4 kV	Passed
		Air discharge @ ±4 kV & ±8 kV	Passed
		Indirect discharge via HCP & VCP @ ±2 & ±4 kV	Passed