

INDUSTRY Range

R/W head

TCF100

[www.balogh-rfid.com](http://www.balogh-rfid.com)

## GENERAL FEATURES

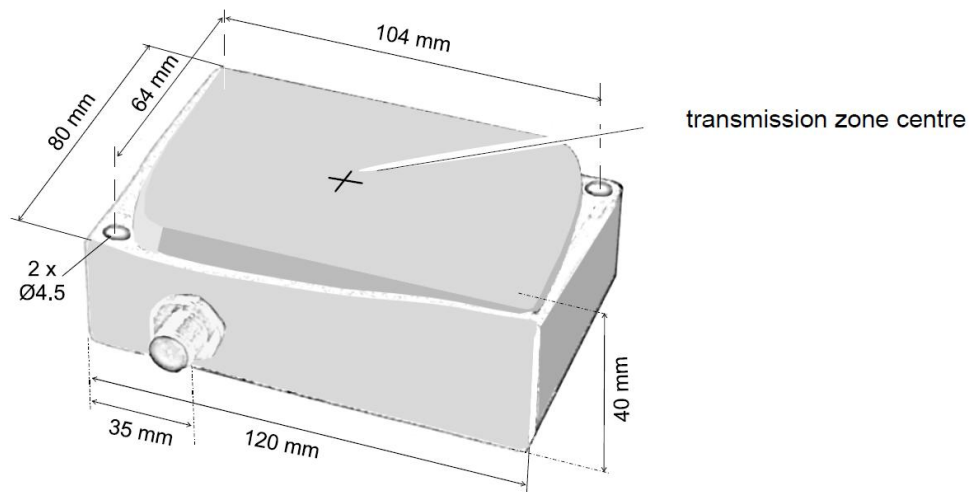
TCF 100 is an R/W head allowing to exchange data with tags TAI or TAM without contact, using a protocol compliant with the standards ISO 18000-3 mode 1 and ISO 15693.

It has to be linked up to a Balogh interface, chosen among:  
- BI\*\*170 McMc (for the tag TAI) or BI\*\*170 TT (for the tag TAM)  
- CEPR96\* (programmable)



## ASSEMBLY DATA

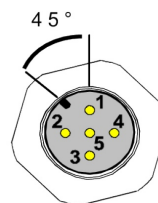
Assembly using two screws 2xØ4.5 (length under head  $\geq 35$  mm, right-angled distances : 104x65 mm)



## CONNECTION

The TCF100 is fitted with a 5 pin M12 metallic male socket. Use a corresponding female cable connector(A-coded, réf. 202 274) and a shielded cable with the following characteristics:

- max length : 50m,
  - overall max. capacity between conductors and the shield :10nF.
- The shield must be in contact to the cable connector housing 360° round crimping.



Pin Nr	Description	Wire colour
1	+24 VDC	brown
2	Output	white
3	Input	blue
4	0 V	black
5	0 V	green/yellow

## CHARACTERISTICS

TCF100	TAG (data carrier)		
	TAI20 IC SLI	TAI30 IC SLI	TAI50 IC SLI
S <sub>n</sub> nominal range	75	130	160
S <sub>r</sub> recommended range	45	80	95
LS <sub>r</sub> length of transmission zone @ Sr	55	105	130
D <sub>tt</sub> distance between tags end to end @ Sr	180	240	320
D <sub>er</sub> distance between transceivers end to end @ Sr	110	190	250
D <sub>ef</sub> distance between transceivers face to face @ Sr	110	190	250
	TAG (data carrier)		
	TAI20 2K FRAM	TAI30 2K FRAM	TAI50 2K FRAM
S <sub>n</sub> nominal range	70	90	150
S <sub>r</sub> recommended range	40	55	90
LS <sub>r</sub> length of transmission zone @ Sr	50	70	115
D <sub>tt</sub> distance between tags end to end @ Sr	180	220	320
D <sub>er</sub> distance between transceivers end to end @ Sr	110	140	220
D <sub>ef</sub> distance between transceivers face to face @ Sr	110	140	220
	TAG (data carrier)		
	TAI711	TAI56	TAM931 2K or 8K
S <sub>n</sub> nominal range	125	200	85
S <sub>r</sub> recommended range	75	120	50
LS <sub>r</sub> length of transmission zone @ Sr	100	140	65
D <sub>tt</sub> distance between tags end to end @ Sr	240	380	240
D <sub>er</sub> distance between transceivers end to end @ Sr	190	360	150
D <sub>ef</sub> distance between transceivers face to face @ Sr	190	360	150

All distances are in millimeters (mm)

\* See **Assembly recommendations** chapter (page 3) to have distance description

min	nominal	max	unit
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**Power**

Supply direct voltage (ripple included)	21	24	29	V
Protection against polarity reversal	yes			-
Supply current @ 24VDC	90			mA

**Electronic**

Carrier frequency	13,56		MHz
Protection against short-circuits	yes		-

**General**

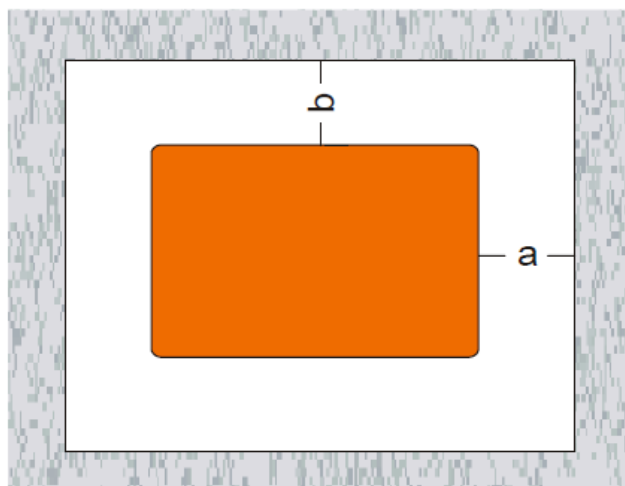
Casing	PA12 (GF30%)		-
Operating temperature	- 25	70	°C
Protection rating	IP65		-
Weight	550		g

## ASSEMBLY RECOMMENDATIONS

- **The head is not to be mounted directly in a recessed metal cavity .**  
A minimum metal-free clearance is required round the head.

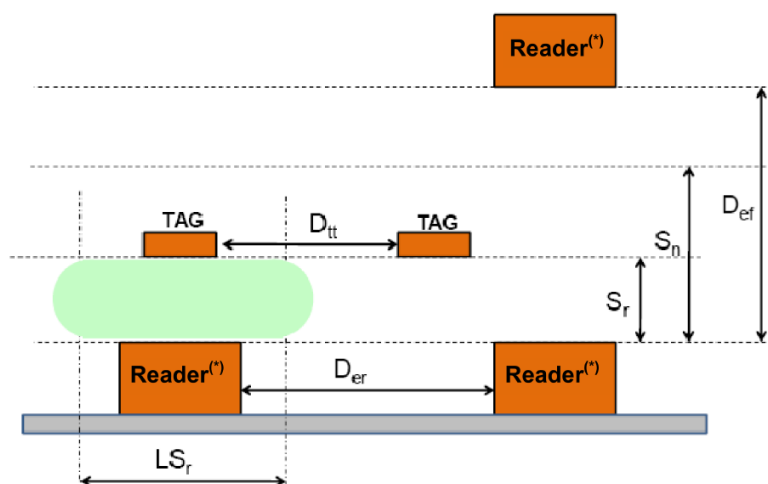
$a \geq 30 \text{ mm}$

$b \geq 30 \text{ mm}$



- **Important:**

To avoid interference between two TCF100, there must be a minimum space ( $D_{er}$ ) between them (refer to the above table)



$S_n$	Nominal range
$S_r$	Recommended range
$LS_r$	Length of transmission zone @ $S_r$
$D_{tt}$	Distance between tags end to end
$D_{er}$	Distance between transceivers end to end
$D_{ef}$	Distance between transceivers face to face
(*)	Header or reader

Transmission zone style  
(the actual outline depends on the reader)

## ACCESSORY

M12 Female connector A-coded, ref 202274.

For various possibles interfaces, Balogh proposes cables with straight connector(s)

- PUR cordset 5 m (réf. 495XXB4512) for BI interfaces (refer to accesories corresponding data sheet),
- PUR cable FFMD5/12 (lenght 2, 10 or 15 m) for the others interfaces.